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Investigation Report for Consolidated Unit 73-002-99 and Corrective Action of Solid Waste Management Unit 73-002, at Technical Area 73

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Prepared by the Environmental Programs Directorate

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July 2007

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EXECUTIVE SUMMARY

This investigation report presents the results of characterization activities conducted at Consolidated Unit 73-002-99 and remediation activities conducted at Solid Waste Management Units (SWMUs) 73-002, 73-004(b), and 73-006 at Los Alamos National Laboratory (the Laboratory). This consolidated unit, located in Technical Area 73, consists of four SWMUs and one area of concern (AOC). The portions of the sites located on the hillside of Pueblo Canyon are on former Laboratory property that is now part of Los Alamos County. The mesa-top sites are located on property still owned by the U.S. Department of Energy (DOE). In 1999, the following SWMUs and AOC were consolidated into 73-002-99 because of their related operational history and geographic proximity:

- SWMU 73-002, a former incinerator and ash surface disposal area located west and north of the Los Alamos County Airport terminal
- AOC 73-003, a former steam-cleaning facility (former structure 00-1123) for garbage trucks, cans, and dumpsters used to collect municipal waste from the Los Alamos townsite
- SWMU 73-004(a), a former septic system that received sanitary waste from toilets and showers in the adjacent incinerator building (building 73-02)
- SWMU 73-004(b), a former septic system located approximately 90 ft northwest of the former steam-cleaning facility (AOC 73-003) that received wash water from the steam-cleaning facility
- SWMU 73-006, two former drainlines that discharged to Pueblo Canyon from the incinerator building (building 73-02)

The objective of this investigation was to complete surface and subsurface characterization of Consolidated Unit 73-002-99 in accordance with the New Mexico Environment Department (NMED)-approved investigation work plan. Characterization data were used to define the nature and extent of contamination and to determine whether the site poses a potential unacceptable risk to human health or the environment. The primary objective of remediation activities performed at SWMU 73-002 in 2005, 2006, and 2007 was to remove incinerator ash and debris with concentrations of chemicals of potential concern (COPCs) exceeding residential screening action levels (SALs) for radionuclides and soil screening levels (SSLs) for inorganic and organic chemicals. In addition, contaminated soil was removed from SWMUs 73-004(b) and 73-006 in 2007.

Field investigation activities conducted in 2005, 2006, and 2007 included drilling boreholes and sampling in and around Consolidated Unit 73-002-99 to characterize the vertical and lateral extent of contamination. Surface and shallow-subsurface samples were collected from beneath the distribution lines, from the septic systems and outfalls, and from the canyon slope after debris was removed. Based on the characterization data from the 2005 to 2007 investigation and from previous investigations conducted at the site, the nature and extent of radionuclide and inorganic and organic COPCs in both surface and subsurface media are defined for Consolidated Unit 73-002-99.

Human health risk screening assessments were conducted for each of the four SWMUs and the one AOC. Ecological risk screening assessments were conducted at Consolidated Unit 73-002-99 for three areas based on similar contaminant sources and topography: (1) SWMU 73-004(b); (2) AOC 73-003; and (3) SWMUs 73-002, 73-004(a), and 73-006.

For SWMUs 73-002, 73-004(a), 73-004(b), and 73-006 and AOC 73-003, exposure point concentrations of carcinogenic COPCs are less than the respective residential SSLs. The total excess cancer risks are less than or approximately 1×10^{-5} and do not exceed or are equivalent to the NMED target level of 1×10^{-5}. The noncarcinogenic exposure point concentrations are less than the respective residential

SSLs, and the hazard indices (HIs) do not exceed the NMED target level of an HI of 1.0. The exposure point concentrations for radionuclide COPCs are less than the respective residential SALs and do not exceed DOE's target dose of 15 mrem/yr. Therefore, concentrations of COPCs in soil and tuff at SWMUs 73-002, 73-004(a), 73-004(b), and 73-006 and AOC 73-003 do not pose a potential unacceptable risk/dose to human health under a residential scenario.

Overall, the uncertainties associated with the evaluation of ecological risks to residual concentrations of chemicals of potential ecological concern in soil and tuff at Consolidated Unit 73-002-99 overestimate potential risk to ecological receptors. The results of the ecological screening assessment indicate that no potential unacceptable risk exists to receptors at Consolidated Unit 73-002-99.

Based on the investigation results, all of the sites within Consolidated Unit 73-002-99, specifically SWMUs 73-002, 73-004(a), 73-004(b), and 73-006 and AOC 73-003, are recommended as "Corrective Action Complete without Controls" because nature and extent have been defined, and no potential unacceptable risk/dose exists under a residential scenario.

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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 (LANS), 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 covers 40 mi^2 of the Pajarito Plateau, which consists of a series of finger-like mesas separated by deep canyons containing perennial and intermittent streams running from west to east. Mesa tops range in elevation from 6200 to 7800 ft above mean sea level (amsl).

The Laboratory's Environmental Programs (EP) Directorate 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 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 is currently investigating sites potentially contaminated by past Laboratory operations. These sites are designated as solid waste management units (SWMUs) or areas of concern (AOCs). Individual SWMUs and AOCs may be grouped into consolidated units.

This investigation report addresses Consolidated Unit 73-002-99, located in Technical Area (TA) 73 and also known as the Airport Ash Pile. The site is potentially contaminated with both hazardous and radioactive chemicals. Corrective actions at the Laboratory are subject to the March 1, 2005, Compliance Order on Consent (the Consent Order). The Consent Order was issued pursuant to the New Mexico Hazardous Waste Act (HWA), New Mexico Statutes Annotated (NMSA) 1978, § 74-4-10, and the New Mexico Solid Waste Act, NMSA 1978, § 74-9-36(D). Information on radioactive materials and radionuclides, including the results of sampling and analysis of radioactive constituents, is voluntarily provided to the New Mexico Environment Department (NMED) in accordance with DOE policy.

1.1 General Site Information

Consolidated Unit 73-002-99 is located at the Los Alamos County Airport on the eastern end of the Los Alamos townsite (Figures 1.1-1 and 1.1-2). One portion of the site is located on the mesa top at the edge of Pueblo Canyon, and the other is located on the slope of Pueblo Canyon. The elevation of the mesa top is approximately 7150 ft amsl, with a 2% slope to the east. The elevation at the bottom of Pueblo Canyon below the site is approximately 6660 ft amsl.

Consolidated Unit 73-002-99 consists of four inactive SWMUs and one inactive AOC consolidated in 1999 according to their related operational history as well as the proximity of each site to one another (Figure 1.1-2). The sites include the following:

- SWMU 73-002, a former waste incinerator, located in building 73-02, and the ash surface disposal area located on the canyon slope north of the former waste incinerator building
- AOC 73-003, a former steam-cleaning facility (former structure 00-1123) for garbage trucks, cans, and dumpsters used to collect municipal waste from the Los Alamos townsite
- SWMU 73-004(a), a former septic system (septic tank, drainline, and outfall) that received sanitary waste from toilets and showers in the incinerator building (building 73-02)

- SWMU 73-004(b), a former septic system (septic tank, drainline, and outfall) that received wash water from the steam-cleaning facility (AOC 73-003)
- SWMU 73-006, two former drainlines that discharged to Pueblo Canyon from floor drains in the incinerator building (building 73-02)

1.2 Field Investigation Scope

The primary objective of this investigation is to complete characterization of Consolidated Unit 73-002-99, in accordance with the approved corrective action and investigation work plan (ITSI 2005, 094312); notices of disapproval (NODs) (NMED 2005, 091657; NMED 2005, 091690); responses to the NODs (2005, 091626, Table 2.18-1); and NMED's approval with modifications (NMED 2005, 092180).

The main investigation activities specified in the approved work plan were surface and shallow subsurface sampling (ITSI 2005, 094312; NMED 2005, 092180), including both sampling to define the nature and extent of residual contamination and confirmation sampling following remediation. At SWMU 73-002, confirmation sampling was performed within the footprint of the former ash pile to verify that cleanup levels were met. Nature and extent sampling at SWMU 73-002 focused on the drainages below the former ash pile because runoff is the primary mechanism for the transport of contaminants from the site. For the mesa top SWMUs and AOC, nature and extent drilling and sampling were conducted to augment the results of previous sampling and to complete the characterization of these sites.

Other investigation activities included field analytical screening, surveying, and borehole drilling and abandonment. Field screening was performed to guide sampling locations and to monitor worker health and safety. Surveying was performed to establish the locations of sampling points. Boreholes were abandoned by plugging with grout to prevent infiltration of water and possible contaminant movement.

1.3 Remediation Activities Scope

The primary objective of the corrective action was to remove ash and associated debris from the disposal area on the south slope of Pueblo Canyon below the former incinerator, now referred to as SWMU 73-002. As directed by the approved work plan, corrective action activities conducted at SWMU 73-002 included the following:

- Ash and Debris Removal. The ash and associated debris were removed from the canyon slope using several methods, including hand-picking, mechanical excavation, and vacuuming. Field screening of the soil and tuff underlying the ash pile was performed to guide waste removal and to aid in collecting soil and tuff samples to verify that cleanup levels had been achieved.
- Waste Management. Wastes removed from the disposal area were placed into appropriate containers (e.g., roll-off bins) and transported off site for disposal. Waste management activities also included screening the wastes for conformance with the waste profiles and preparation of the necessary documentation.
- Site Restoration. Site restoration activities included implementing erosion control measures at the former ash pile. These measures included routing surface water drainage from the airport parking lot away from the disturbed areas and covering the disturbed areas with permanent erosion-control matting.

In addition to the above activities, two unexpected site conditions were encountered during the course of removal that prompted additional actions at SWMU 73-002 that were not included in the approved work plan. The first was the discovery of an intact rifle-launched grenade in the debris. This discovery required

developing and implementing a plan to allow activities to continue in an unexploded ordnance (UXO) environment. The second was the discovery of asbestos-containing materials (ACM), which prompted the development and implementation of an addendum to the approved work plan and site-specific health and safety plan (SSHASP) to manage the ACM. The discovery and removal of the unexploded ordnance is described in section 5.1.1. Asbestos sampling, removal, and disposal activities are described in sections 4.6 and 5.2.2. In addition, contaminated soil was removed from SWMUs 73-004(b) and 73-006. The corresponding deviations from the approved work plan associated with these unexpected site conditions are discussed in section 3.6.

2.0 BACKGROUND

The following sections provide the site descriptions, operational histories, and summaries of previous investigations of the SWMUs and AOC that comprise Consolidated Unit 73-002-99. The approved "Work Plan for Corrective Action of SWMU 73-002 and Investigation of Consolidated Unit 73-002-99" (ITSI 2005, 094312; NMED 2005, 092180) and the "Pueblo Canyon Aggregate Area Investigation Work Plan" (LANL 2005, 090579) provide details of past operations and investigations at Consolidated Unit 73-002-99.

2.1 SWMU 73-002, Airport Ash Pile

2.1.1 Site Description and Operational History

SWMU 73-002, commonly referred to as the Airport Ash Pile, is a former incinerator and surface disposal area located slightly west and north of the Los Alamos County Airport terminal (Figure 2.1-1). The incinerator was operated by the Laboratory from 1947 to 1948 to destroy classified Laboratory documents, after which time it was used to burn municipal trash (LANL 1992, 007667, p. 5-189; LANL 1996, 059374, p. 1; LANL 1996, 054916, p. 1). The incinerator equipment and stack were subsequently removed; no information on the removal dates and operations is available (LANL 1996, 054916, p. 1). Associated with the incinerator was an ash disposal area located north of the building, immediately below the south rim of Pueblo Canyon (LANL 1996, 054916, p. 1). A sizeable deposit of noncombustible materials, primarily composed of rusted metal cans, was located on a ledge below the top of the canyon. From this ledge, the ash deposit extended approximately 140 ft to the top of the canyon edge at a slope of approximately 40 degrees. The width of the ash pile was narrowest at the top (approximately 65 ft) and fanned out, becoming widest at the ledge (approximately 160 ft). Below the ledge, accumulations of ash and other noncombustible materials continued downslope in an irregular manner for some distance but terminated at least 700 ft above the bottom of the canyon (LANL 1996, 054916, p. 1).

The surface disposal area is located on the canyon-slope portion of the site and is presently open space that is accessible to the public. This current land use (recreational) is not expected to change for the foreseeable future. The former incinerator building is located on the mesa-top portion of the site and access is controlled by Los Alamos County. The current land use (industrial) is not expected to change for the foreseeable future.

2.1.2 Historical Investigations

This section summarizes the Resource Conservation and Recovery Act (RCRA) facility investigation (RFI) sampling and investigation activities conducted at SWMU 73-002 in 1996, 1997, and 1998. Details of the RFI are provided in the approved Pueblo Canyon Aggregate Area investigation work plan (LANL 2005,

090579; NMED 2005, 091388) and summarized in the approved work plan (ITSI 2005, 094312; NMED 2005, 092180).

SWMU 73-002, Ash Pile

Eleven samples from eight locations were collected from depths of 0 ft to 4.5 ft below ground surface (bgs) from the ash pile downslope of the incinerator building and analyzed for inorganic chemicals, radionuclides, and organic chemicals. An additional 24 surface samples were collected and analyzed only for radionuclides. The following inorganic chemicals were detected but have no background data for comparison because the samples were collected from ash: aluminum, arsenic, antimony, barium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, vanadium, and zinc (LANL 2005, 090579, Table 2.12-1 and Plate 2.18-2). The radionuclides detected in the surface soil samples were plutonium 239, plutonium-240, uranium-234, uranium-235, and uranium-238 (LANL 2005, 090579, Table 2.18-3 and Plate 2.18-3). Numerous organic chemicals were detected in the ash samples (LANL 2005, 090579, Table 2.18-4), including pesticides, polyaromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), phthalates, and chlorinated dioxins and furans. The chlorinated dioxins and furans were detected only in subsurface samples collected from the ash pile (LANL 2005, 090579, Table 2.18-4 and Plate 2.18-4). Dioxin and furan data from the 1997 sampling were reported in the 2005 work plan (ITSI 2005, 094312, Table 3) with incorrect values. The reported values were 1000 times higher than the detected values.

SWMU 73-002, Debris Field—Debris

The following inorganic chemicals were detected in the five samples collected from the debris field below the ash pile at depths of 0 ft to 7.5 ft bgs: arsenic, barium, cadmium, calcium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, silver, and zinc (LANL 2005, 090579, Table 2.18-2 and Plate 2.18-2). Radionuclides detected in one sample at location 73-02468 were uranium-234, uranium-235, and uranium-238 (LANL 2005, 090579, Table 2.18-3 and shown in Plate 2.18-3). Detected organic chemicals included PCBs, pesticides, halogenated hydrocarbons, and chlorinated dioxins/furans (LANL 2005, 090579, Table 2.18-4 and Plate 2.18-4). Aroclor-1254 was detected in one surface sample (location 73-02270). The pesticide 4,4'-DDT (dichlorodiphenyltrichloroethane) and its metabolite 4,4'-DDE (dichlorophenyltrichloroethylene) were detected in the same sample. Chlorinated dioxins and furans (LANL 2005, 090579, Table 2.18-4) were detected in the two subsurface debris samples (locations 73-02464 and 73-02465) but not in the three surface samples (locations 73-02262, 73-02270, and 73-02468). Tetrachloroethene (PCE) was detected in two of the three surface debris samples (locations 73-02262 and 73-02270).

SWMU 73-002, Debris Field—Soil

Four surface soil samples were collected beneath the debris (LANL 2005, 090579, Table 2.18-1, Plate 2.18-1, and Figure 2.18-1). Four inorganic chemicals were detected above background values (BVs) in these samples (LANL 2005, 090579, Table 2.18-2 and Plate 2.18-2): cadmium (location 73-02454), cobalt (location 73-02457), lead (locations 73-02454 and 73-02457), and manganese (location 73-02457). No radionuclides were detected in any of the surface soil samples collected beneath the debris. Benzoic acid was detected in one soil sample collected from the debris field (LANL 2005, 090579, Table 2.18-4 and Plate 2.18-4). Chlorinated dioxins and furans (LANL 2005, 090579, Table 2.18-4) were detected in one of the soil samples collected (location 73-02457) within the debris field.

SWMU 73-002, Drainage Areas

Fourteen samples were collected from nine locations at depths of 0 ft or 4.8 ft bgs in the drainage areas below the ash pile (LANL 2005, 090579, Table 2.18-1, Plate 2.18-1, and Figure 2.18-1). Eleven of these samples were collected from soil and three were collected from the underlying tuff (LANL 2005, 090579, Table 2.18-1). Thallium was the only inorganic chemical detected above BV in the two soil samples collected from location 73-02452 (LANL 2005, 090579, Table 2.18-2 and Plate 2.18-2). The detection limit for antimony was elevated above the BV in one of the tuff samples. As summarized in Table 2.18-3 and shown in Plate 2.18-3 of the Pueblo Canyon Aggregate Area work plan (LANL 2005, 090579), the only radionuclide detected above fallout value (FV) in soil was tritium (location 73-02255). No organic chemicals were detected in any of the tuff samples, but organic chemicals were detected in several soil samples. A complete list of the organic chemicals detected, provided in Table 2.18-4 and shown in Plate 2.18-4 of the Pueblo Canyon Aggregate Area work plan (LANL 2005, 090579), included pesticides, halogenated hydrocarbons, PAHs, and chlorinated dioxins and furans.

SWMU 73-002, Adjacent to Ash Pile

Two surface samples each were collected to the east and west of the ash pile (LANL 2005, 090579, Table 2.18-1 and Plate 2.18-1). Inorganic chemicals detected above BVs included barium, cadmium, copper, lead, mercury, silver, and thallium (LANL 2005, 090579, Table 2.18-2 and Plate 2.18-2). No radionuclides were detected above BVs/FVs in any of the samples. Detected organic chemicals included PAHs, benzoic acid, phthalates, naphthalene, and chlorinated dioxins and furans (LANL 2005, 090579, Table 2.18-4 and Plate 2.18-4). The chlorinated dioxins and furans were detected in only one sample on each side of the ash pile.

In June 2004, after reviewing data collected during previous field investigations, NMED determined that SWMU 73-002 required site control measures to limit public access and stabilization measures to divert storm water runoff from the airport parking area away from the ash disposal area. The Laboratory submitted a site control and stabilization work plan for the incinerator ash pile in August 2004 (LANL 2004, 087433). Subsequently, DOE decided to remediate the site and submitted the corrective action work plan and historical investigation report described in section 1.2 of this report.

2.1.3 Additional Data Requirements

Based on a review of existing site data for SWMU 73-002, the following data requirements were identified in the approved work plan (ITSI 2005, 094312; NMED 2005, 092180):

- Define vertical extent of chemicals of potential concern (COPCs) in soil and tuff beneath the ash pile
- Complete definition of lateral and vertical extent of COPCs in soil and tuff surrounding the ash pile and in sediment in drainages downslope of the ash pile

2.2 AOC 73-003, Former Steam-Cleaning Plant

2.2.1 Site Description and Operational History

AOC 73-003 was a former steam-cleaning facility (former building 00-1123) for garbage trucks, galvanized steel garbage cans, and dumpsters that were used to collect municipal waste in the Los Alamos townsite. The facility was located on the north side of Airport Road immediately west of the former incinerator (building 73-02) and constructed of concrete block on a concrete slab, with overall

dimensions of 50 ft × 30 ft (Figure 2.2-1). The facility consisted of a drive-through bay for cleaning garbage trucks, a fully enclosed and automated system for cleaning garbage cans, an area for unloading garbage cans to be cleaned, a heater room, and an office. A 50-ft × 20-ft gravel storage yard located on the west side of the facility was used to store clean garbage cans that were exchanged for soiled cans at the time of pickup. Wash water entered one of three 14-in.-diameter floor drains (one drain in the truck cleaning bay, one drain in the garbage can cleaning bay, and one drain in the concrete slab on the north side of the building where garbage cans were staged and initially cleaned) that connected to a septic tank [SWMU 73-004(b)] that discharged through a 6-in. vitrified clay pipe (VCP) to Pueblo Canyon. The steam-cleaning facility was used from 1949 to 1970 and was demolished in 1971. The site is now overlain by the asphalt parking lot of the Los Alamos County Airport.

AOC 73-003 is entirely under the asphalt parking lot of the Los Alamos County Airport; the current land use (industrial) is not expected to change for the foreseeable future.

2.2.2 Historical Investigations

Eight samples were collected from four locations from 2.8 ft to 8.5 ft bgs in the vicinity of the former steam-cleaning facility (LANL 2005, 090579, Table 2.18-1 and Plate 2.18-1). The six shallowest samples were collected from soil or fill (locations 73-10104, 73-10105, 73-10106, and 73-10107), and the two deepest samples were collected from the underlying tuff (locations 73-10106 and 73-10107). The inorganic chemicals cobalt, lead, and zinc were detected above BVs in the fill and soil samples. The following inorganic chemicals were detected above BVs in one of the two tuff samples (sample ID RE73-99-0103): aluminum, arsenic, barium, calcium, chromium, copper, iron, magnesium, nickel, selenium, and vanadium (LANL 2005, 90579, Table 2.18-2 and Plate 2.18-2). No radionuclides were detected in any of the samples. Detected organic chemicals included the pesticide DDT and its metabolites 4,4'-DDD (dichlorodiphenyldichloroethane) and DDE and PAHs (LANL 2005, 90579, Table 2.18-4 and Plate 2.18-4). The PAHs, fluoranthene and pyrene, were detected in one soil sample (sample ID RE73-99-0100). The pesticides DDT, DDD and DDE were detected in two fill samples; DDT was also detected in one of the tuff samples.

2.2.3 Additional Data Requirements

Based on the review of the existing site data for AOC 73-003, the following data requirement was identified in the approved investigation work plan (ITSI 2005, 094312; NMED 2005, 092180): complete determination of nature and extent of COPCs in subsurface soil and tuff beneath the drainlines and storage area associated with the former steam-cleaning facility.

2.3 SWMU 73-004(a), Former Septic System

2.3.1 Site Description and Operational History

SWMU 73-004(a) is a former septic system that received sanitary waste from toilets and showers in the incinerator building (building 73-02). The concrete septic tank was located approximately 90 ft northwest of the former steam-cleaning plant that discharged to Pueblo Canyon through a 6-in. VCP drainline (Figure 2.3-1). The inlet drainline and septic tank were removed in during a 1996 voluntary corrective action (VCA) (LANL 1996, 059374). The mesa-top portion of SWMU 73-004(a) is presently paved and is used as a parking lot for the Los Alamos County Airport. The canyon-slope portion of the site is presently open space and is accessible to the public. The current land uses (industrial and recreational) and are not expected to change for the foreseeable future.

2.3.2 Historical Investigations

A Phase I RFI was conducted at SWMU 73-004(a) in 1996 and 1997. Following the Phase I RFI, the decision was made to remove the tank and its contents and abandon the inlet and outlet drainlines in place; the tank was subsequently removed during a VCA implemented in 1996 (LANL 1996, 054916). Based on confirmation sample results, the VCA recommended no further action (NFA) for SWMU 73-004(a) (LANL 1996, 059374). It was subsequently determined that additional sampling was required to define the extent of contamination at the site. A sampling and analysis plan (SAP) was submitted to NMED in 1998, which documented the RFI results (LANL 1998, 062522).

Seven samples from four locations were collected at depths between 3 ft and 10 ft bgs (LANL 2005, 090579, Table 2.18-1 and Figure 2.18-2). Three of these samples were from soil (locations 73-02207, 73-10095, and 73-10121), one from fill (location 73-02328), and three from tuff (locations 73-02207, 73-10095, and 73-10121). Inorganic chemicals detected above BVs (LANL 2005, 090579, Table 2.18-2 and Plate 2.18-2) in these samples included arsenic (tuff only), barium (tuff and soil), calcium (tuff only), copper (soil only), lead (soil only), silver (soil only), and zinc (soil only). In addition, analytical detection limits were elevated above BVs for antimony, cadmium, mercury, silver, and thallium (LANL 2005, 090579, Table 2.18-2). No radionuclides were detected above BVs/FVs in any of the samples. Organic chemicals were detected in the soil and tuff but not in fill samples (LANL 2005, 090579, Table 2.18-4 and Plate 2.18-4). The pesticides alpha and gamma chlordane, and DDT and its metabolites (DDD and DDE) were detected in the soil samples (location 73-02207). In addition, 2-methylnapthalene, naphthalene, phenanthrene, and trichlorofluoromethane were detected in one soil sample (location 73-02207). Only DDT and toluene were detected in the tuff samples from location 73-02207.

The outfall from this septic system is in the area of the ash pile (SWMU 73-002). Consequently, it is not possible to evaluate the septic system outfall separately from the ash pile. Therefore, data from confirmation samples collected beneath the former ash pile, together with samples collected below (downslope) the former ash pile, and outfall are used to evaluate impacts of the septic system.

2.3.3 Additional Data Requirements

Based on the review of the existing site data for SWMU 73-004(a), the following data requirement was identified in the approved investigation work plan (ITSI 2005, 094312; NMED 2005, 092180): complete the definition of nature and extent of COPCs in subsurface soil and tuff beneath the former septic tank and drainlines and within outfall area.

2.4 SWMU 73-004(b), Former Septic System

2.4.1 Site Description and Operational History

SWMU 73-004(b) was a concrete septic tank that discharged wash water from the steam-cleaning plant through a 6-in. VCP drainline to an outfall on the slope of Pueblo Canyon (LANL 1998, 062522, p. 7) (Figure 2.4-1). The mesa-top portion of SWMU 73-004(b) is presently paved and is used as a parking lot for the Los Alamos County Airport. The canyon-slope portion of the site is presently open space and is accessible to the public. The current land uses (industrial and recreational) are not expected to change for the foreseeable future.

2.4.2 Historical Investigations

During RFI activities in July and August 1996, the septic tank was exposed and found to be intact (LANL 1998, 062522, p. 7). The tank was subsequently removed during VCA activities in August 1996 (LANL 1996, 059374). The area currently is paved and used as a parking lot. Based on sample results, the VCA recommended NFA for SWMU 73-004(b) (LANL 1996, 059374). It was subsequently determined that additional sampling was required to define the extent of contamination, and a SAP was submitted to NMED in 1998 (LANL 1998, 062522).

Twenty samples were collected from 13 locations in tuff, soil, fill and at the end of the outlet pipe (LANL 2005, 090579, Table 2.18-1 and Figure 2.18-3). Two of these samples (locations 73-02326 and 73-02327) were collected from soil at the bottom of the excavated tank location at a depth of 14 ft to 15 ft bgs (LANL, 1996, 059374, Table 3.3.2-1). Depth of the tuff, soil, and fill samples ranged from 0.25 ft to 15 ft bgs. The following inorganic chemicals were detected above BVs in the tuff samples: aluminum, antimony, arsenic, barium, calcium, chromium, cobalt, copper, iron, lead, magnesium, mercury, nickel, thallium, vanadium, and zinc (LANL 2005, 090579, Table 2.18-2 and Plate 2.18-2). The following inorganic chemicals had detection limits above the BVs in the soil samples: antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, silver, and zinc (LANL 2005, 090579, Table 2.18-2). The following inorganic chemicals were detected above BVs in the samples collected from fill: aluminum, beryllium, calcium, chromium, iron, magnesium, mercury, and zinc (LANL 2005, 090579, Table 2.18-2 and Plate 2.18-2). Inorganic chemicals detected above BVs in the outlet pipe included antimony, arsenic, cadmium, chromium, lead, mercury, vanadium, and zinc (LANL 2005, 090579, Table 2.18-2 and Plate 2.18-2). In addition, the following inorganic chemicals had detection limits above BVs in at least one sample: antimony, cadmium, mercury, silver, and thallium (LANL 2005, 090579, Table 2-18-2). Tritium was detected in one tuff sample (location 73-02211) and one soil sample (location 73-02213) (LANL 2005, 090579, Table 2.18-3 and Plate 2.18-3). Organic chemicals were also detected in these samples (LANL 2005, 090579, Table 2.18-4 and Plate 2.18-4). Aroclor-1254 was detected in five soil samples but not in the fill, tuff, or outlet pipe samples. The analyte DDT and its metabolites (DDD and DDE) and alpha and/or gamma chlordane were detected in soil, fill, and outlet pipe samples.

2.4.3 Additional Data Requirements

Based on the review of the existing site data for SWMU 73-004(b), the following data requirement was identified in the approved investigation work plan (ITSI 2005, 094312; NMED 2005, 092180): complete the definition of nature and extent of COPCs in subsurface soil and tuff beneath the former septic tank and drainlines and within outfall area and drainage on the canyon slope.

2.5 SWMU 73-006, Incinerator Drainlines

2.5.1 Site Description and Operational History

SWMU 73-006 consisted of two drainlines that discharged to Pueblo Canyon from the incinerator (building 73-02) (Figure 2.5-1). The west drainline, constructed of 5-in.-diameter cast-iron pipe, originated from two floor drains, now plugged with concrete, one on the west side of the charging floor and the other on the west side of the stoking floor (LANL 1998, 062522, p. 27). The east drainline, also constructed of 5-in.-diameter cast-iron pipe, originated at similar concrete-plugged drains located on the east side of the charging and stoking floors. The drains are presumed to have handled wash water and to have operated concurrently with the incinerator (LANL 1998, 062522, p. 27). The drainlines discharged directly onto the ash disposal area (SWMU 73-002). The current and reasonably foreseeable future land use for SWMU 73-006 is industrial and recreational.

2.5.2 Historical Investigations

In 1997, a Phase I RFI was conducted at SWMU 73-006 (LANL 1997, 056606). The west drainline was removed as part of this RFI. The east drainline could not be located during the Phase I RFI. A SAP was submitted to NMED in 1998 to determine the horizontal and vertical extent of contamination (LANL 1998, 062522).

Ten samples from five locations were collected between 2.8 ft and 8 ft bgs from the fill and tuff (LANL 2005, 090579, Table 2.18-1 and Figure 2.18-4). Inorganic chemicals detected above BVs in the fill included antimony, cadmium, calcium, cobalt, copper, lead, mercury, nickel, silver, and zinc (LANL 2005, 090579, Table 2.18-2 and Plate 2.18-2). The following inorganic chemicals were detected above BVs in the tuff: barium, calcium, copper, lead, mercury, and selenium. In one tuff sample (location 73-02442), the detection limit for mercury was elevated above the BV. Plutonium-239,-240 was detected in one tuff sample (location 73-02443) (LANL 2005, 090579, Table 2.18-3 and Plate 2.18-3). Numerous organic chemicals, including pesticides and PAHs, were detected in tuff at these five sampling locations (LANL 2005, 090579, Table 2.18-4 and Plate 2.18-4).

2.5.3 Additional Data Requirements

Based on the review of the existing site data for SWMU 73-006, the following data requirement was identified in the approved work plan (ITSI 2005, 094312; NMED 2005, 092180): complete the definition of lateral and vertical extent of COPCs beneath drainlines between the incinerator building and the outfall area and in the drainage area on the canyon slope.

3.0 SCOPE OF ACTIVITIES

This section describes the scope of activities conducted at Consolidated Unit 73-002-99 from May 2005 to May 2007. All work was conducted in accordance with the approved investigation work plan (ITSI 2005, 094312; NMED 2005, 092180).

The activities described in the approved work plan had two main objectives: (1) to define the nature and extent of contamination from Consolidated Unit 73-002-99 by collecting additional surface and subsurface data around the site and (2) to reduce or prevent the migration of contamination by removing ash, debris, and environmental media known to contain COPC concentrations exceeding residential screening action levels (SALs) for radionuclides (LANL 2005, 088493) and residential soil screening levels (SSLs) for inorganic and organic chemicals (NMED 2006, 092513).

The quality procedures (QPs) and standard operating procedures (SOPs) used during the 2005–2007 characterization and remediation activities are listed in Table 3.0-1. The most current versions of all QPs and SOPs were used to implement the approved investigation work plan (ITSI 2005, 094312; NMED 2005, 092180). Specific details of the methods used for drilling and sampling activities are described below along with deviations from the approved work plan (section 3.6). The results of sampling data are summarized in section 7.0. Field duplicates were collected at a frequency of 1 field duplicate for every 10 samples collected for the overall sampling program implemented at Consolidated Unit SWMU 73-002-99.

A summary of the characterization and remediation activities at each SWMU and AOC in Consolidated Unit 73-003-99 is provided in the following sections.

3.1 SWMU 73-002, Ash Disposal Area

SWMU 73-002 is situated on the mesa edge and hillside portion of Consolidated Unit 73-002-99 (Photographs 1 and 2, Appendix G). The ash pile covered approximately 11,000 ft^2. The objective of the characterization activities at this site was to define the lateral and vertical extent of contamination. The objective of the remediation activities at SWMU 73-002 was to remove the ash and debris on the hillside with contaminant concentrations exceeding residential SALs and SSLs. Soil samples at SWMU 73-002 were collected from locations within the former ash pile footprint and from the drainages associated with the site (Plate 1), as discussed in the following sections.

3.1.1 Surface Soil Investigation

Soil samples at SWMU 73-002 were collected from locations within the former ash pile footprint, from the edges of the ash pile, and from the drainages associated with the site (Plate 1). Surface samples were collected every 100 linear ft along each of the three drainages associated with the ash pile in March 2006 in accordance with the approved work plan (ITSI 2005, 094312; NMED 2005, 92180). Samples were collected in the eastern and western drainages starting at the top of the hillside and continuing downhill to the canyon floor, and the samples from the middle drainage were collected starting at the base of the ash pile and continuing down to the canyon floor. A total of 29 surface samples were collected from the three drainages (Plate 1) in March 2006. Samples were not collected at one of the predetermined locations in the western drainage because ash was present at the location; however, confirmation samples (locations 73-75564 and 73-27292) were collected within 15 ft of this location following removal of the ash. The results of the confirmation samples are presented in section 3.1.4. Two surface soil samples from the eastern drainage (locations 73-25591 and 73-25592) and three soil samples from the western drainage (locations 73-25602, 73-25603, and 75-25604) were excavated during the removal of ash, debris, and contaminated soil, and additional surface soil samples were not collected from these locations after the removal activities.

Samples were collected for fixed laboratory analysis in accordance with the approved work plan (ITSI 2005, 094312; NMED 2005, 092180). Table 3.1.1-1 summarizes the samples collected in the drainages associated with SWMU 73-002 including sample number, location, interval and analytical suite. All of the surface samples collected within the drainages were analyzed for volatile organic compounds (VOCs) (SW-846 8260B), semivolatile organic compounds (SVOCs) (SW-846 8270C), pesticides (SW-846 8081), PCBs (SW-846 8082), explosive compounds (SW-846 8321A), dioxins and furans (SW-846 8290), target analyte list (TAL) metals (SW-846 6010B/6020/7471A), radionuclides by gamma spectroscopy (U.S. Environmental Protection Agency [EPA] Method 901.1), isotopic plutonium (HASL-300:ISOPU), isotopic uranium (HASL-300:ISOU), perchlorate (SW-846 8731A; EPA Method 314), cyanide (SW-846 9012A), pH (SW-846 9045C), and nitrates (EPA Method 300.0).

3.1.2 Subsurface Soil Investigation—Drainages

The concentrations of inorganic chemicals and radionuclides in the surficial soil samples collected from the three drainages in March 2006 were above BVs, although the concentrations of inorganic chemicals and radionuclides decreased with distance away from the ash pile (i.e., downslope to the canyon bottom). The samples collected in March 2006 defined the lateral extent of contamination (ITSI 2005, 094312; NMED 2005, 092180).

In November 2006, soil samples were collected at six locations within these drainages from depths of 1 to 2 ft bgs to define the vertical extent of inorganic chemicals and radionuclides. These six samples were analyzed for TAL metals (SW-846 6010B/6020/7471A) and radionuclides by gamma spectroscopy (EPA

Method 901.1), isotopic plutonium (HASL-300:ISOPU), and isotopic uranium (HASL-300:ISOU) to define the vertical extent of contamination in the three drainages, as presented in Table 3.1.1-1.

3.1.3 Removal of Ash Pile and Debris

The removal of ash and debris began in November 2005, continued in March 2006, from October to December 2006, and during January and April 2007, and was completed in May 2007. Fieldwork was suspended between January 6 and April 7, 2007, because of snow and ice accumulation on the north-facing hillside of Pueblo Canyon. The debris located outside of the actual ash pile was consolidated into bags and brought to the top of the hillside as described in Section 5.0. Approximately 3544 yd^3 of ash, debris, and contaminated soil was removed from the hillside using a combination of excavation and vacuum techniques. During initial ash removal activities, ACM and UXO (ITSI 2006, 096810; ITSI 2006, 096799) were encountered within the ash and debris, which required modifications to the removal activities and health and safety procedures as discussed in section 4.6 and 5.0.

3.1.4 Confirmation Sampling

Confirmation sampling of SWMU 73-002 was designed to cover the ash pile and debris field using a sampling grid set on 30-ft centers. The grid was established to extend past the visible ash and debris by at least one grid cell (Plate 1). Sampling location IDs were assigned to grid points located in the center of each grid cell. A crosswalk between grid points and sampling location IDs is provided in Appendix H. Samples were collected from the perimeter sampling locations in March 2006. All of these perimeter locations were resampled in December 2006 and in January, April, and May 2007, with the exception of three locations (73-25562, 73-25563, and 73-25567) because the ash and/or debris removal activities were conducted in and around these sampling locations. The sample planned for 1 to 2 ft into the tuff material was not collected from these three perimeter sampling locations during the March 2006 sampling event, but the deeper samples were collected during the November–December 2006 sampling events using a rock drill or hand auger in conjunction with a metal bar. The surface sample from location 73-25561 was not collected in March 2006 because it was located less than 5 ft from location 73-25602. However, the surface soil from this area was removed during excavation activities. In addition, three sampling locations (locations 73-27283, 73-27284, and 73-27681) were added to the western edge because ash and debris were encountered at sampling locations 73-27297, 73-27304, and 73-27680 during removal activities (Plate 1). An additional sampling location (73-27679) was added based on the presence of ash and debris observed at this location.

After the ash and debris were removed from the north-facing slope leading into Pueblo Canyon, confirmation samples were collected from soil and tuff in accordance with the approved work plan (ITSI 2005, 094312; NMED 2005, 092180). Confirmation sampling occurred in November and December 2006, and in January, April, and May 2007; a total of 126 samples were collected from 58 locations from beneath the former ash pile and along the perimeter of the ash pile. The approved work plan called for the collection of up to three samples from each location: one surface soil sample, one soil sample from the soil/tuff interface (the first 6 in. of soil immediately above the rock surface), and one sample from 1 to 2 ft into the underlying tuff (ITSI 2005, 094312; NMED 2005, 092180). Three confirmation samples were collected from these intervals from 14 sampling locations (locations 73-25562, 73-25563, 73-27280, 73-27287, 73-27281, 73-27279, 73-27288, 73-27293, 73-27286, 73-27285, 73-27282, 73-25567, 73-25568, and 73-27678).

Contaminated surface soil was excavated from most of the hillside sampling locations during removal activities based on the x-ray fluorescence (XRF) field-screening results. Surface soils were not present at 37 confirmation sampling locations (locations 73-25564, 73-27297, 73-27304, 73-25569, 73-27680,

73-27292, 73-27298, 73-25570, 73-27299, 73-27306, 73-27312, 73-25571, 73-27679, 73-27316, 73-27289, 73-27294, 73-27300, 73-27307, 73-27313, 73-25572, 73-27319, 73-27290, 73-27295, 73-27301, 73-25573, 73-25565, 73-25566, 73-27291, 73-27296, 73-27302, 73-27309, 73-25574, 73-27303, 73-27310, 73-25575, 73-27284 and 73-27681), which reduced the number of samples that could be collected to two from each location: one surface tuff sample and one sample from 1 to 2 ft into the tuff (Plate 1). This field condition was identified in the approved work plan (ITSI 2005, 094312; NMED 2005, 092180). The deeper soil sample from 1 to 2 ft into the tuff was not collected at two locations (location 73-25564 and 73-27297) as discussed below.

The sample planned for 1.0 to 2.0 ft into the tuff was not collected from three locations near the top of the lower rock outcrop along the western edge of SWMU 73-002 (locations 73-25564, 73-27297, and 73-27283). Sampling technicians were unable to apply sufficient pressure to advance the hand augers or metal bars into the tuff at these locations; therefore, only the surface tuff was sampled using a hammer and chisel.

The sample planned for 1 to 2 ft into the tuff material was not collected from 15 sampling locations on the perimeter of the ash pile (locations 73-25561, 73-25522, 73-25563, 73-25564, 73-25565, 73-25566, 73-25567, 73-25568, 73-25569, 73-25570, 73-25571, 73-25572, 73-25573, 73-25574, 73-25575) during the March 2006 sampling event. The deeper samples were collected from three of these locations during the November and December 2006 sampling events (locations 73-25562, 73-25563, and 73-25567) using the rock drill or hand auger in conjunction with a metal bar. Additional soil samples, including the sample from 1 to 2 ft in the tuff, were collected from the remaining 12 locations after the ash pile and associated debris were removed.

Four of the sampling locations are on a steep slope where fused tuff is exposed at the surface (Photographs 03 and 88, Appendix G). The steep slope prevented the use of the hand-held rock drill for safety concerns, and sampling technicians were unable to apply sufficient pressure to advance the hand augers into the tuff. At these locations, only the surface tuff was sampled using a hammer and chisel (locations 73-27305, 73-27311, 73-27314, and 73-27315). This issue was discussed with NMED staff in a meeting on November 13, 2006, and was approved by NMED via e-mail on November 14, 2006 (NMED 2006, 096193).

Tuff was not encountered at two locations (locations 73-25561 and 73-27308). The geology in these two areas consists of dislodged pieces of tuff with soil in between the tuff. The deepest samples collected at each location were soil samples from a depth of 4.5 to 5.0 ft bgs.

Samples were collected for fixed laboratory analysis in accordance with the approved work plan (ITSI 2005, 094312; NMED 2005, 092180). A total of eight rinsate samples were collected during the confirmation sampling events.

Table 3.1.1-1 summarizes the samples collected at SWMU 73-002 in 2005, 2006, and 2007, including sample number, location, interval, and analytes. Table H-1 in Appendix H summarizes screening-level analytical results and XRF background- and field-screening results. Organic vapor background and headspace screening were not conducted on the samples from the ash pile because VOCs were removed from the analytical suite following discussions with NMED, as summarized below (NMED 2006, 096193). The approved work plan (ITSI 2005, 094312; NMED 2005, 092180) indicated that the confirmation samples for SWMU 73-002 would be analyzed for VOCs (SW-846 8260B), SVOCs (SW-846 8270C), pesticides (SW-846 8081), PCBs (SW-846 8082), explosive compounds (SW-846 8321A), dioxins and furans (SW-846 8290), TAL metals (SW-846 6010B/6020/7471A), radionuclides by gamma spectroscopy (EPA Method 901.1), perchlorates (SW-846 8731A; EPA Method 314), cyanide (SW-846 9012A), pH (SW-846 9045C), and nitrates (EPA Method 300.0). The analytical requirements for the

confirmation samples for SWMU 73-002 were revised based on a review of the sample data from the ash and the perimeter samples collected in March 2006. NMED approved the following changes via e-mail on November 14, 2006, following a meeting to discuss the rationale for modifying the analytical requirements on November 13, 2006 (NMED 2006, 096193).

- Explosive compounds: None of the perimeter sample contained detected concentrations of explosive compounds, but two pieces of ordnance were identified during the removal of ash and associated debris. As a result, the samples collected from sampling locations 73-25564, 73-27297, 73-27292, and 73-27298 where the ordnance was encountered were analyzed for explosive compounds.
- Cyanide: None of the perimeter samples contained detected concentrations of cyanide, but the ash was not analyzed for cyanide. As a result, 20% of the confirmation samples collected in November and December 2006 and in January, April, and May 2007 were analyzed for total cyanide based on XRF screening results.
- VOCs: Only one of the ash pile perimeter samples contained detected concentrations of VOCs, and the ash samples showed only sporadic, low VOC concentrations. As a result, the confirmation samples collected in November and December 2006 and in January, April, and May 2007 were not analyzed for VOCs.
- Nitrates: The historical use of the incinerator did not indicate that nitrates would be present in the soil/tuff below the ash. Low concentrations of nitrates were detected in two samples from the perimeter sampling locations during the March 2006 sampling. As a result, the confirmation samples collected in November and December 2006 and in January, April, and May 2007 were not analyzed for nitrates.
- Radionuclides: The perimeter samples showed detected concentrations of isotopic plutonium and uranium above BVs/FVs; however, gamma spectroscopy results showed no detects above BVs/FVs. As a result, the confirmation samples collected in November and December 2006 and in January, April, and May 2007 were analyzed only for isotopic plutonium and isotopic uranium.

All of the samples collected in March 2006 from the perimeter sampling locations were analyzed for VOCs (SW-846 8260B), SVOCs (SW-846 8270C), pesticides (SW-846 8081), PCBs (SW-846 8082), explosive compounds (SW-846 8321A), dioxins and furans (SW-846 8290), TAL metals (SW-846 6010B/6020/7471A), radionuclides by gamma spectroscopy, (EPA Method 901.1), isotopic plutonium (HASL-300:ISOPU), isotopic uranium (HASL-300:ISOU), perchlorate (SW-846 8731A; EPA Method 314), cyanide (SW-846 9012A), pH (SW-846 9045C), and nitrates (EPA Method 300.0). The analytical requirements for the confirmation samples identified in the approved work plan (ITSI 2005, 094312; NMED 2005, 092180) were revised based on a review of the ash characterization sample data from April 2005 and the perimeter samples collected in March 2006. Section 3.6 presents a discussion of the changes to the analytical program for the confirmation samples. These changes were approved by NMED via e-mail on November 14, 2006 (NMED 2006, 096193), following a meeting on November 13, 2006, to discuss the rationale for modifying the analytical requirements.

3.2 AOC 73-003, Former Steam-Cleaning Plant

AOC 73–003 was a 50-ft by 30-ft concrete block structure (former structure 00-1123) on a concrete slab where garbage cans and dumpsters used to collect municipal waste from the Los Alamos townsite were steam cleaned. Water was collected by three 14-in. floor drains and piped to a septic tank [SWMU 73-004(b)] that drained through a 6-in. VCP to an outfall on the hillside of Pueblo Canyon. The site is currently paved with asphalt and is part of the airport parking lot.

3.2.1 Subsurface Soil Investigation

Six boreholes were advanced at AOC 73-003 using a CME 85 hollow-stem auger (HSA) rig equipped with a 3-in.-internal-diameter split-spoon, core-barrel sampler (Figure 3.2.1-1) (Photograph 34, Appendix G). The methods and procedures followed during field activities are described in Table 3.0-1. These borings were drilled to a depth of 8 ft bgs through approximately 6 ft of fill material and an additional 2 ft into the underlying tuff (Table 3.2.1-1). The samples of the fill material were collected at depths of approximately 2 ft below the asphalt and base rock. Fill samples were not collected from locations 73-25536 and 73-25537 because of poor recovery.

The presence of a former gravel storage yard at the western end of the former steam-cleaning facility was identified during a review of the approved RFI work plan (LANL 1992, 007667). Since the former storage yard was not identified in the approved work plan, two boreholes were drilled in November 2006 (locations 73-27233 and 73-27234) to determine the nature and extent of contamination associated with this portion of AOC 73-003 (ITSI 2005, 094312; NMED 2005, 092180). The sampling intervals were the same for these boreholes as the original six boreholes.

Samples were collected for fixed laboratory analysis at AOC 73-003 in accordance with the approved work plan (ITSI 2005, 094312; NMED 2005, 092180). One rinsate sample was collected during the drilling/sampling activities associated with AOC 73-003. Table 3.2.1-1 summarizes the samples collected at AOC 73-003 in 2006, including sample number, location, interval, and analytical suite and sampling locations are presented in Figure 3.2.1-1. The organic vapor background and field screening results are presented in Table H-2 in Appendix H.

Samples collected from AOC 73-003 in 2006 were analyzed for VOCs (SW-846 8260B), SVOCs (SW-846 8270C), pesticides (SW-846 8081), PCBs (SW-846 8082), TAL metals (SW-846 6010B/6020/7471A), and radionuclides by gamma spectroscopy (EPA Method 901.1), perchlorate (SW-846 8731A; EPA Method 314), cyanide (SW-846 9012A), pH (SW-846 9045C), and nitrates (EPA Method 300.0). Samples collected in 2006 were also analyzed for americium-241 by alpha spectroscopy (HASL-300: Am-241), isotopic plutonium (HASL-300:ISOPU), isotopic uranium (HASL-300:ISOU), and strontium-90 by gas proportional counting (EPA Method 955.0, ASTM: D5811-95M). However, the volume of sample collected for samples RE73-07-74530, RE73-07-74531, RE73-07-74563, and RE73-07-74532 (locations 73-27233 and 73-27234) was not adequate for all of the planned analyses. As a result, these samples were not analyzed for perchlorate, cyanide, pH, and nitrates (see Table 3.2.1-1).

3.3 SWMU 73-004(a), Former Septic System

SWMU 73-004(a) was a septic system located adjacent to the northwest corner of the incinerator building that received wastewater from toilets and showers in the incinerator building (building 73-02). The septic tank was removed during a 1996 VCA (LANL 1996, 059374). The site is currently an unpaved bench that separates the former incinerator from the slope of Pueblo Canyon (LANL 1996, 059374).

3.3.1 Subsurface Soil Investigation

HSA boreholes were advanced at locations 73-25548 and 73-25549 in March 2006. The samples from location 73-25557 were collected with a hand auger because the location was inaccessible to the HSA rig. Borehole location 73-25548 was advanced at the former septic tank location and fill material was encountered to a depth of 8 ft bgs. Samples were collected within the fill, at the fill/tuff interface, and from 1 to 2 ft into the tuff. Tuff was encountered at depths of less than 3 ft in locations 73-25549 and 73-25557 (Figure 3.3.1-1). Because the tuff was shallow, two samples were collected from each of these locations,

as presented in Table 3.3.1-1. Only one sample of the fill was collected from location 73-25549, and a sample of the tuff was not collected from location 73-25557.

Samples were collected for fixed laboratory analysis at SWMU 73-004(a) in accordance with the approved work plan (ITSI 2005, 094312; NMED 2005, 092180). Table 3.3.1-1 summarizes the samples collected at SWMU 73-004(a) in 2006, including sample number, location, interval, and analytical suite. Field screening for organic vapors or XRF were not conducted during the collection of these samples.

Samples collected in March 2006 were analyzed for VOCs (SW-846 8260B), SVOCs (SW-846 8270C), pesticides (SW-846 8081), PCBs (SW-846 8082), TAL metals (SW-846 6010B/6020/7471A), radionuclides by gamma spectroscopy (EPA Method 901.1), explosive compounds (SW-846 8321A), dioxins and furans (SW-846 8290), perchlorate (SW-846 8731A; EPA Method 314), cyanide (SW-846 9012A), pH (SW-846 9045C), and nitrates (EPA Method 300.0).

3.4 SWMU 73-004(b), Former Septic System

SWMU 73-004(b) was a septic system that received wash water from floor drains in the former steam-cleaning facility (AOC 73-003). The tank was located approximately 90 ft northwest of the former steam-cleaning facility and was removed in 1996 (LANL 1996, 059374). The area in and around the former tank location is currently paved with asphalt and is part of the airport parking lot. The outfall area is located on the south hillside of Pueblo Canyon, west of the former ash pile disposal area.

3.4.1 Subsurface Soil Investigation

Five HSA boreholes were drilled and samples collected from beneath the paved area of the parking lot at SWMU 73-004(b) in March 2006 (Figure 3.4.1-1). Fill material was encountered in these boreholes to depths ranging from 5 to 14 ft bgs. Samples were collected from the fill material, at the fill/tuff interface and from the 1 to 2 ft into the tuff in each borehole. Three additional HSA boreholes (locations 73-25550, 73-25551, and 73-25552) were installed along the alignment of the discharge line between the pavement and the slope of Pueblo Canyon. Fill material was not encountered in these boreholes; tuff was encountered at depths between 2.0 and 3.0 ft bgs. As a result, only one sample of soil above the tuff was collected from these three locations in addition to one tuff sample.

Soil and tuff samples were collected from five locations within the former outfall area in March 2006 using hand augers or hand-held drills. Tuff samples were not collected from locations 73-25553, 73-25554, and 73-25556 in March 2006 because of hand auger refusal, although samples from the soil/tuff interface were collected at locations 73-25553 and 73-25556. The tuff samples were collected at locations 73-25555 and 73-25554 in December 2006 using a combination of a hand auger and metal bar. As with all of the outfall areas and ash pile associated with Consolidated Unit 72-002-99, the steep terrain required sampling technicians and sampling equipment to be secured via a rope and pulley system. The soil/tuff samples were hoisted or carried up to the top of the hillside for cataloging and preparation for shipment.

The sample collected from the soil/tuff interface (4 to 5 ft bgs) in location 73-25541 contained PCBs above 1 mg/kg, but the upper and lower sample intervals at this location bound the vertical extent of contamination. The lateral extent of PCBs was not completely defined by the samples collected in March 2006. Two additional boreholes were drilled to the west of location 73-25541 to define the lateral extent of PCBs. Samples collected from the boreholes drilled in March 2006 also contained selenium concentrations above the BV in fill samples from beneath the airport parking lot. As a result, 13 supplemental samples were collected from six locations in November 2006 and analyzed for TAL metals

and PCBs (Table 3.4.1-1). The analyte DDT was detected only in the sample immediately under the septic tank inlet at 7.2 to 7.4 ft bgs and not in a deeper sample in the same borehole at 11.5 to 12.5 ft bgs. Because the septic tank was cast in place, it was removed by collapsing the walls into the tank and not by excavating around the tank. As a result, the sample locations in the tuff outside the tank were not excavated during tank removal.

The deepest sample from location 73-25555 (2 to 3 ft bgs) contained silver above the soil BV, and the lateral and vertical extent was not defined during the March 2006 sampling event. The deepest sample collected from this location was not collected from 1 to 2 ft into the tuff in March 2006 because of refusal with the hand auger but was collected in November 2006 (sample RE73-07-74540) using a hand auger and metal bar. In addition, samples were collected from two additional locations (73-27235 and 73-27236) to define the vertical and lateral extent of silver. The samples collected in the outfall area before 2005 contained elevated concentrations of PCBs. As a result, the supplemental samples collected in November 2006 from the outfall area were analyzed for PCBs in addition to TAL metals (Table 3.4.1-1).

Approximately 36 yd^3 of contaminated soil was removed from the outfall area in May 2007 based on elevated levels of PCBs (Photograph 102, Appendix G). Confirmation soil samples were collected from four locations (73-10100, 73-10101, 73-10102, and 73-10103) and analyzed for PCBs (Table 3.4.1-1) (Photograph 106, Appendix G). This was additional scope not included in the approved work plan (ITSI 2005, 094312; NMED 2005, 092180).

Samples were collected for fixed laboratory analysis at SWMU 73-004(b) in accordance with the approved work plan (ITSI 2005, 094312; NMED 2005, 092180). Field Four rinsate samples were also collected during sampling activities at SWMU 73-004(b). Table 3.4.1-1 summarizes the samples collected at SWMU 73-004(b) in 2006, including sample number, location, interval, and analytes. Field screening for organic vapors or XRF were not conducted during the collection of these confirmation samples.

Samples collected in March 2006 were analyzed for VOCs (SW-846 8260B), SVOCs (SW-846 8270C), pesticides (SW-846 8081), PCBs (SW-846 8082), TAL metals (SW-846 6010B/6020/7471A), radionuclides by gamma spectroscopy (EPA Method 901.1), perchlorate (SW-846 8731A; EPA Method 314), cyanide (SW-846 9012A), pH (SW-846 9045C), and nitrates (EPA Method 300.0). The supplemental confirmation samples collected in November 2006 were analyzed for PCBs and TAL metals, and the confirmation samples collected in May 2007 were analyzed for PCBs.

3.5 SWMU 73-006, Former Incinerator Drainlines

SWMU 73-006 consisted of two drainlines that discharged to the Pueblo Canyon slope from the former floor drains on the east and west sides of the incinerator building. The site is located on an unpaved bench on the southern mesa edge of Pueblo Canyon.

3.5.1 Surface Soil Investigation

HSA boreholes were drilled and samples collected from 2 ft into the fill, to the depth of the drainlines at approximately 8 ft, at the fill/tuff interface, and from 1 to 2 ft into the tuff. Drilling and split-spoon sampling were completed at borehole locations 73-25547, 73-25558, and 73-25559 in March 2006. The deeper sample from location 73-25558 was not collected because of the presence of concrete at a depth of 1.5 ft bgs (Figure 3.5.1-1).

The surface sample from location 73-25558 contained lead above the BV and residential SSL and concentrations of dioxins above residential SSLs. The contaminated fill materials were removed in January 2007 (including location 73-25558), and six confirmation samples were collected from three

locations (73-25558, 73-27240, and 73-27241). This was additional scope not included in the approved work plan (ITSI 2005, 094312; NMED 2005, 092180).

Samples were collected at SWMU 73-006 for fixed laboratory analysis in accordance with the approved work plan (ITSI 2005, 094312; NMED 2005, 092180). Two rinsate samples were collected. Table 3.5.1-1 summarizes the samples collected at SWMU 73-006, including sample number, location, interval, and analytical suite. Field screening for organic vapors or XRF was not conducted when these soil samples were collected.

Samples collected in March 2006 were analyzed for VOCs (SW-846 8260B), SVOCs (SW-846 8270C), pesticides (SW-846 8081), PCBs (SW-846 8082), explosive compounds (SW-846 8321A), dioxins and furans (SW-846 8290), TAL metals (SW-846 6010B/6020/7471A), radionuclides by gamma spectroscopy (EPA Method 901.1), perchlorate (SW-846 8731A; EPA Method 314), cyanide (SW-846 9012A), pH (SW-846 9045C), and nitrates (EPA Method 300.0). The additional samples collected in January 2007 were analyzed for dioxins and furans and TAL metals.

3.6 Deviations from Approved Work Plan

The ash and debris removal procedures outlined in the approved work plan (ITSI 2005, 094312; NMED 2005, 092180) were followed during the investigation and corrective action with the exception of modifications to field procedures required because UXO and ACM had been identified, as described in sections 4.6 and 5.1. Two pieces of UXO were encountered during removal of debris from the edge of Grids B-4 and B-5 (locations 73-73-27292 and 73-27298), and the removal procedures were modified to account for identifying, avoiding, and removing UXO, as described in section 5.1. The removal procedures were modified after ACM was identified in the ash materials (section 4.6), including the requirements for analyzing daily personnel samples, daily perimeter samples, and clearance samples for asbestos.

Additional samples were collected in November and December 2006 and in January, April, and May 2007 to define the nature and extent of contamination at the SWMUs and AOC of Consolidated Unit 73-002-99, except SWMU 73-004(a). The following sampling activities were not specified in the approved work plan (ITSI 2005, 094312; NMED 2005, 092180) but were conducted to define the nature and extent of contamination at Consolidated Unit 73-002-99:

- Samples were collected 1 to 2 ft bgs from six locations within the drainages associated with SWMU 73-002 to define the vertical extent of inorganic chemicals and radionuclides because the required sampling in the approved work plan (ITSI 2005, 094312; NMED 2005, 092180) only included surface soil samples.
- Two additional boreholes were drilled at AOC 73-003 and three samples were collected from each borehole to evaluate a gravel storage yard identified at the western end of the former steam-cleaning facility.
- Two additional boreholes were drilled as step-out boreholes at SMWU 73-004(b) to define the lateral and vertical extent of PCBs and selenium within the parking lot.
- Soil samples were collected from four locations within the outfall associated with SWMU 73-004(b) to define the lateral and vertical extent of silver and PCBs.

The approved work plan (ITSI 2005, 094312; NMED 2005, 092180) outlined the procedures to be followed for the removal of ash, debris, and contaminated soil from SWMU 73-002. Contaminated soil was removed from two additional areas based on the analytical data collected during historical

investigations and in March 2006. Contaminated soil was removed from the following two areas in addition to the ash pile:

- 36 yd^3 of soil containing PCBs was removed from the outfall associated with SWMU 74-004(b). Six confirmation soil samples were collected from three locations following these removal activities.
- 25 yd^3 of contaminated soil was removed from SWMU 73-006 between the incinerator and the piers that extend over the mesa edge. Confirmation samples were collected from three locations following the removal of the soil containing dioxins and lead.

Deviations from the approved work plan in the sampling locations and procedures implemented at Consolidated Unit 73-002-99 are listed below.

- The surface sampling from location 73-25561 was not collected because it was located less than 5 ft from location 73-25602.
- Surface samples were not collected at one location in the western drainage because the sampling location was within the ash pile. The surface soil was excavated from this location during removal activities. Confirmation samples (locations 73-25564 and 73-27292) were collected within 15 ft of this location.
- Three sampling locations (73-27283, 73-27284, and 73-27681) were added to the western edge because ash and debris were encountered at locations 73-27297, 73-27304, and 73-27680 during removal activities. An additional sampling location (73-27679) was added based on the presence of ash/debris in grid cell C-8.
- The sample planned for 1 to 2 ft into the tuff was not collected from three sampling locations (73-25564, 73-27297, and 73-27283) because of tuff resistance at these locations. Sample technicians using the rock drill or hand auger in conjunction with a metal bar were unsuccessful at collecting tuff samples from these locations.
- Tuff was not encountered at two locations (locations 73-25561 and 73-27308). The geology in these two areas consists of dislodged pieces of tuff with soil in between the tuff. Two soil samples were collected from these two locations at depths of 4.5 to 5 ft bgs.
- Contaminated surface soil was removed from most of the hillside sampling locations during removal activities based on XRF field-screening results. Surface soil was not present at 37 confirmation sampling locations, which reduced the number of samples collected to two from each location. This condition was noted as a possible field condition in the approved work plan.
- Four of the hillside sampling locations (73-27305, 73-27311, 73-27314, and 73-27315) were positioned on near vertical surfaces with slopes greater than 70 degrees, and only a surface sample could be collected from each of these locations. Sampling crews attempted to collect tuff samples using hand augers and power drills from these locations; however, sample recovery could not be achieved.
- Field screening for organic vapors or metals by XRF was not conducted when soil samples were collected from AOC 73-003 during the March 2006 sampling, and was not conducted during the November–December 2006 and 2007 confirmation sampling at SWMUs 73-004(a), 73-004(b), 73-006. The soil samples were collected from these areas based on visual observations and the sample intervals outlined in the approved work plan.
- The volume of sample collected for samples RE73-07-74530, RE73-07-74531, RE73-07-74532, and RE73-07-74563 (locations 73-27233 and 73-27234) at AOC 73-003 were not adequate for

the planned analyses specified in the approved work plan. As a result, these samples were not analyzed for perchlorate, cyanide, pH, and nitrates.

- Fill samples were not collected from locations 73-25536 and 73-25537 at AOC 73-003 because of poor recovery.
- Only one sample of the fill was collected from location 73-25549 at SWMU 73-004(a), and a tuff sample was not collected from location 73-25557.
- The approved work plan (ITSI 2005, 094312; NMED 2005, 092180) indicated that the confirmation samples for SWMU 73-002 would be analyzed for VOCs (SW-846 8260B), SVOCs (SW-846 8270C), pesticides (SW-846 8081), PCBs (SW-846 8082), explosive compounds (SW-846 8321A), dioxins and furans (SW-846 8290), TAL metals (SW-846 6010B/6020/7471A), radionuclides by gamma spectroscopy (EPA Method 901.1), perchlorates (SW-846 8731A; EPA Method 314), cyanide (SW-846 9012A), pH (SW-846 9045C), and nitrates (EPA Method 300.0). The analytical requirements for the confirmation samples for SWMU 73-002 were revised based on a review of the sample data from the ash and the perimeter samples collected in March 2006. NMED approved the following changes via e-mail on November 14, 2006, following a meeting to discuss the rationale for modifying the analytical requirements on November 13, 2006 (NMED 2006, 096193):
    - ❖ Explosive compounds: None of the perimeter sample contained detected concentrations of explosive compounds, but two pieces of ordnance were identified during the removal of ash and associated debris. As a result, the samples collected from sampling locations 73-25564, 73-27297, 73-27292, and 73-27298 where the ordnance was encountered were analyzed for explosive compounds.
    - ❖ Cyanide: None of the perimeter samples contained detected concentrations of cyanide, but the ash was not analyzed for cyanide. As a result, 20% of the confirmation samples collected in November and December 2006 and in January, April, and May 2007 were analyzed for total cyanide based on XRF screening results.
    - ❖ VOCs: Only one of the ash pile perimeter samples contained detected concentrations of VOCs, and the ash samples showed only sporadic, low VOC concentrations. As a result, the confirmation samples collected in November and December 2006 and in January, April, and May 2007 were not analyzed for VOCs.
    - ❖ Nitrates: The historical use of the incinerator did not indicate that nitrates would be present in the soil/tuff below the ash. Low concentrations of nitrates were detected in two samples from the perimeter sampling locations during the March 2006 sampling. As a result, the confirmation samples collected in November and December 2006 and in January, April, and May 2007 were not analyzed for nitrates.
    - ❖ Radionuclides: The perimeter samples showed detected concentrations of isotopic plutonium and uranium above BVs/FVs; however, gamma spectroscopy results showed no detects above BVs/FVs. As a result, the confirmation samples collected in November and December 2006 and in January, April and May 2007 were only analyzed for isotopic plutonium and isotopic uranium.

4.0 FIELD INVESTIGATION RESULTS

This section summarizes the methods, procedures, and results of the characterization and remediation activities at Consolidated Unit 73-002-99. The methods and procedures are discussed further in

Table 3.0-1. Information and data specific to the characterization of potential contamination and confirmation sampling are presented in section 7.0.

4.1 Surface Conditions

The elevation of the mesa-top portion of Consolidated Unit 73-002-99 is approximately 7150 ft amsl. The surface conditions at Consolidated Unit 73-002-99 vary, the mesa top SWMUs and AOC exist partially or fully under pavement or structures, and each has an outfall leading to the Pueblo Canyon hillside and the mesa top slopes to the northeast at a 40% grade. Surface slopes vary from gradients of less than 5% to nearly vertical relief; the Pueblo Canyon slope drops to the north to an elevation of approximately 6660 ft amsl at the bottom of Pueblo Canyon. Consolidated Unit 73-002-99 is located in the Bandelier Tuff, which breaks into a series of benches and steep slopes that grade into Pueblo Canyon.

Consolidated Unit 73-002-99 is an inactive site; no operations have been conducted at the site since the mid-1970s. The building used to house the incinerator (building 73-02) is currently used by Los Alamos County for storage, and the former steam-cleaning facility has been removed. That portion of the site to the west of the former incinerator building is paved and is used as a parking area by the Los Alamos County Airport.

Fill material and limited, undisturbed, surface soils constitute the landscape around Consolidated Unit 73-002-99, with fill the dominant surface material. Where undisturbed, the soil on the mesa top is thin and poorly developed; it tends to be silty to fine sand in texture near the surface and more clay-like beneath the surface. A discussion of the soil types in the Los Alamos area can be found in section 2.2.1.3 of the installation work plan (LANL 2000, 066802, p. 2-22) and in Nyhan et al. (1978, 005702, pp. 24-25).

The undisturbed canyon slope into Pueblo Canyon is a highly vegetated, steeply dipping colluvial surface composed of a matrix of soil with poorly sorted, subangular boulders of Bandelier Tuff. The soil profile exposed during sampling revealed an organic rich zone resting on regolith composed of boulder debris.

Before corrective action was taken, incinerator ash covered the upper portion of the canyon slope at SWMU 73-002. The ash extended approximately 140 ft down from the top of the slope and formed a fan approximately 65 ft wide at the top and 160 ft wide at the bottom. Below the ash pile was a bench formed at the top of an outcrop. This bench served as an accumulation point for cans and other debris. Debris was also present in a drainage channel through the outcrop and on the canyon slope below the outcrop. During the corrective action the ash and debris were removed from the canyon slope. During the removal of the ash and debris, the surface was disturbed and, as a result, exposed to higher erosion potential. Erosion-control measures known as best management practices (BMPs) were implemented during and after the 2005–2007 field activities. Photographs showing the ash pile and debris slope and stages of removal are provided in Appendix G.

4.1.1 Relationship to Other SWMUs and AOCs

Other consolidated units, SWMUs, and AOCs located in the vicinity of Consolidated Unit 73-002-99 include the following:

- Consolidated Unit 73-001(a)-99, a former landfill [SWMU 73-001(a)] and former septic system [SWMU 73-004(d)]. The landfill is situated north of the airport runway in TA-73, along the edge of Pueblo Canyon approximately 800 ft east of Consolidated Unit 73-002-99. The landfill operated from 1943 to 1973 for disposal of municipal solid waste and occupies an area of approximately 12 acres. SWMU 73-004(d) consisted of the septic system that served the landfill office. This septic system was located east of the present airport terminal building and within the footprint of the SWMU 73-001(a) landfill. An interim measure was implemented at the site in 2003 to remove

waste from the canyon slope below the former landfill (DOE 2003, 076185). The site was recently capped as part of a remedy implemented pursuant to the Consent Order.

- Consolidated Unit 73-001(b)-99, a former waste oil pit [SWMU 73-001(b)], four former HE storage bunkers [SWMU 73-001(c)], and landfill debris disposal area [SWMU 73-001(d)]. These sites are located near the east end of the airport runway, along the edge of Pueblo Canyon, approximately 4000 ft east of Consolidated Unit 73-002-99. The waste oil pit was used from 1947 to 1974 to dispose of waste oils from the former Zia motorpool, craft shops, and a vehicle shop. The bunkers were used by the Zia Company and the Laboratory protective force and were demolished in 1974. The landfill debris disposal area consists of two trenches constructed in 1984 to receive waste excavated from a portion of SWMU 73-001(a). SWMUs 73-001(b) and 73-001(c) are both within the footprint of SWMU 73-001(d) and were removed when the trenches were constructed. The site was recently capped as part of a remedy implemented pursuant to the Consent Order.
- SWMU 73-004(c), a former septic system. This septic system served two restrooms in the former airport terminal in TA-73 and was located approximately 150 ft east of Consolidated Unit 73-002-99. The septic system operated from approximately 1946–1964 and is believed to have been removed before or during the 1984 airport expansion. The area of the former terminal building and septic tank was covered with 9-in.-thick concrete pavement as part of the airport expansion.

These consolidated units and SWMUs did not contribute to surface and/or subsurface contamination at Consolidated Unit 73-002-99. They are located to the east of Consolidated Unit 73-002-99 and are at a lower elevation so that runoff from these sites did not impact Consolidated Unit 73-002-99. Drainage from these sites is to the north into Pueblo Canyon east of Consolidated Unit 73-002-99.

4.2 Exploratory and Characterization Drilling

This subsection describes the locations, methods, and depths of subsurface explorations including the types of equipment used, the borehole logging procedures, the soil or rock classification system used to describe the observed materials, exploration equipment, decontamination procedures, and conditions encountered that may have affected or limited the investigation.

A description of the site conditions observed during subsurface investigation activities is included in this subsection. Site plans showing the locations of all borings and excavations are included in the figures section of the report. Borehole logs for the drilling activities associated with AOC 73-003, SWMU 73-004(a), SWMU 73-004(b), and SWMU 73-006 are provided in Appendix C. Drilling activities were not conducted at SWMU 73-002; where taken, the samples were collected by hand augers or by hand.

Similar drilling, logging, and sampling activities were followed at these four sites. Soil samples for visual logging and analytical samples were collected with a modified California split spoon sampler driven to sampling depths with a CME-85 HSA. After the CME rig was positioned over the predetermined sample site, the first split-spoon sample was collected beneath the asphalt and base rock cover at about 2 ft into the underlying fill. The site geologist noted soil type using the Unified Soil Classification System and sample depth, and the soil was placed in prelabeled sample containers. A second soil sample was taken at the sediment-tuff contact, and the third sample was taken from a depth of 1 to 2 ft in the underlying tuff.

The drilling activities at AOC 73-003 and SWMU 73-004(b) were conducted within the airport parking lot, with the exception of three boreholes for SWMU 73-004(b) (locations 73-25550, 73-25551, and 73-25552) that were located adjacent to the parking lot. The boreholes within the parking lot encountered 2 to 6 in. of asphalt overlying varying amounts of fill materials above the Bandelier Tuff. The thickness of fill materials

encountered at AOC 73-003 varied from 2.5 to 6 ft. The greatest thickness of fill materials encountered was 14.5 ft at location 73-25540, which was located adjacent to the former separator. The thickness of fill materials in the remainder of SWMU 73-004(b) varied from 4.5 to 7.5 ft.

Two boreholes were drilled at SWMU 73-004(a) and two boreholes were drilled at SWMU 73-006 at locations between the incinerator and the former ash pile. These borings encountered tuff at depths between 2.5 and 7.5 ft. The remaining samples from these two SWMUs were collected using hand augers because of difficulties associated with obtaining utility clearance between the incinerator building and the former ash pile.

The drilling equipment (e.g., augers, rods) was decontaminated between locations by the drilling subcontractor and the waste soil/cuttings and decontamination water was placed in drums, stored on-site, profiled, and disposed as investigation-derived waste (IDW). Liquid and solid IDW was managed separately from individual sites. Appendix F provides information on IDW disposal.

4.3 Geodetic Surveys

This subsection describes the methods, dates of measurement, and the results of surveys to establish the coordinates of sampling locations and the boundaries of excavations. A series of contiguous 30-ft sampling grids forming a rectangle was established from the top to the toe of the ash pile along the upper, north-facing wall of Pueblo Canyon (Plate 1). Additionally, 30- $\times$ 30-ft grids were located around the perimeter of this rectangle. Three grids were added to the western edge of the grids, and one additional grid was added to the northern edge based on the presence of ash and debris. Characterization samples were collected from sampling locations in the center of each grid for the ash pile and around the perimeter. Grid points and corresponding sampling location IDs are provided in Appendix H.

The three drainages downgradient from the ash pile samples were sampled every 100 lineal feet. The sampled spot was staked after sampling was complete. After the SWMUs and the drainages were sampled in March 2006, each sample was surveyed in the field by a New Mexico Registered Land Surveyor. Each sampling location was surveyed with a total station, differential global-positioning system (GPS).

The sampling locations overlain by pavement were initially surveyed using previous sampling locations where coordinates were available. Once the previous sampling locations were identified in the field, the proposed locations were marked and the underground utility clearance was conducted before ground was broken. After HSA sampling or hand auguring of these sites was completed, the exact sampling location was resurveyed by a New Mexico Registered Land Surveyor.

North American Vertical Datum (NAVD) 1988 was selected as the reference datum for all surveying. Each survey point within the ash pile area was located using a GPS satellite coordinate or tape measured from the location to a known fixed horizontal point surveyed using North American Datum (NAD) 1983. Sampling survey coordinates are provided in Table 4.3-1.

4.4 Subsurface Conditions

The scope of the current investigation included only shallow boreholes drilled to a maximum depth of 18 ft bgs with most boreholes advanced to 8 ft or less and did not include characterization of the subsurface geologic units underlying the site. The general stratigraphy at the site is summarized below, but no site-specific information is available defining the thicknesses of the geologic units at Consolidated Unit 73-002-99 (LANL 2005, 088493, p. 208).

The bedrock directly underlying the site is cooling unit 3 of the Tshirege Member of the Bandelier Tuff (Qbt 3). In the general area of Consolidated Unit 73-002-99, the Tshirege Member of the Bandelier Tuff is

separated from the lower Otowi Member at about 340 ft bgs by the Cerro Toledo interval (Qct), a 10- to 40-ft-thick sequence of volcaniclastic sediments and primary fallout deposits (LANL 2005, 090579, p. 77). The basal Guaje Pumice Bed of the Otowi Member separates the Bandelier Tuff from the underlying clastic fanglomerate sediments of the Puye Formation (Tp).

4.5 Field Screening

This subsection describes field screening methods implemented during remediation and sampling activities including head-space analysis for VOCs and XRF for metals. Screening data for head space analysis and XRF are presented in Appendix H. Radiation screening was also conducted prior to submittal of soil samples.

Field screening for VOCs was conducted in conjunction with sample collection in accordance with SOP-06.33, "Headspace Vapor Screening with a Photo Ionization Detector." Headspace VOC screening was performed for samples collected at SWMU 73-002 during November 2006 using a HNU PI101 photoionization detector (PID) equipped with an 11.7-eV lamp; VOC screening data are presented in Table H-2 (Appendix H).

Field screening for metals was conducted in conjunction with the confirmation sample collection at the former ash pile in accordance with SOP-09.13, "X-Ray Fluorescence Analysis." Screening by XRF was performed for all confirmation samples using a Nikon Model XLT 700 XRF. A minimum of four XRF samples, including one sample from the center of each grid cell, were collected following the removal of ash and debris (the crosswalk in Appendix H). These results were compared to SSLs and BVs as discussed in Appendix H. Additional removal activities were conducted when the XRF results were greater than the SSLs/BVs and additional XRF results were collected from these areas. Confirmation soil samples were collected after at least four XRF samples were below SSL/BVs (Table H-1).

Radiation screening was conducted on all samples by a radiation control technician before the samples were shipped offsite for analysis. All the radiation screening results were within local background ranges. The results of the radiation screening are presented on the sample collection logs in Appendix C.

4.6 Asbestos Sampling

On October 9, 2006, materials considered to be potentially asbestos-containing in the ash were observed (Photograph 52, Appendix G). Ash removal activities were suspended until the ash pile and associated materials could be assessed for the presence of asbestos and the appropriate health and safety provisions implemented. Additional information on the characterization of the ash and associated debris relative to the presence of asbestos can be found in a report prepared for DOE by Innovative Technical Solutions, Inc. (ITSI 2006, 096799). Bulk asbestos sampling results are presented in Table H-3 of Appendix H.

Following the confirmation of the presence of ACM, modifications to the approved work plan were made as an addendum to the work plan and the SSHASP to outline the steps necessary to manage the ACM (Photographs 53 and 55, Appendix G). The addendum specifically identified the controls, training requirements, responsibilities, and requirements needed to be in compliance with the asbestos regulatory standard, as summarized below.

- Perform site-specific asbestos awareness training.
- Revise established work zones. The Exclusion Zone, known as a Regulated Area for asbestos-related work, consisted of the active work area where ash materials are handled. A Decontamination Zone for personnel decontamination was set up adjacent to the Exclusion Zone.

Containers or trash bags for used personnel protective equipment (PPE) were located in this area. Personnel were required to shower when leaving the Regulated Area.

- Hand-washing facilities were available for personnel use. A trailer was setup at the edge of the Decontamination Zone to store PPE and allow for showers during personnel decontamination.
- All asbestos waste materials were contained in plastic-lined bins. The bins were labeled in accordance with the Occupational Health and Safety Administration (OSHA) Asbestos Standard (29 CFR 1926.1101), while on-site and all asbestos waste was labeled, packaged, and manifested in accordance with federal and state requirements.
- Personnel in the Regulated Area were required to wear Tyvek coveralls and respiratory protection even when work activities were not ongoing.
- Personal and perimeter air sampling for asbestos were conducted. Personal monitoring occurred on a daily basis for at least two employees. Perimeter sampling for asbestos was conducted during all ash removal/handling activities.

All work activities associated with this project were evaluated for potential exposure to asbestos. Removal of ACM was performed by an asbestos abatement contractor licensed in New Mexico, in accordance with the OSHA Asbestos in Construction Standard. Two registered abatement contractors were utilized during the removal of the ash and associated debris.

Personal-exposure air monitoring was performed during the removal of ash for the purpose of verifying the work area protection levels. Perimeter air sampling for asbestos was conducted during all ash removal/handling activities at a minimum of two locations. Table H-4 in Appendix H contains additional information on the collection and analysis of these air samples. All of the air sampling data were below the OSHA permissible exposure limits for asbestos.

Following the removal of the ash and debris in November and December 2006, samples were collected from each of the 35 points on the sampling grid previously established over the site (section 3.1.4, Plate 1) and analyzed for asbestos to confirm that all ACM had been successfully removed before confirmation samples were collected. Before demobilization of the Spyder excavator, seven additional tuff samples were collected from the center portion of the ash pile at locations corresponding to the ash characterization samples and analyzed for asbestos. Before remediation and sampling activities resumed in April 2007, soil samples were collected from the remaining grid points to confirm that asbestos was not present since all visible ash had previously been removed. None of the clearance samples collected after the removal of ACM contained detectable levels of asbestos as shown in Table H-5 in Appendix H.

The removal activities conducted in April and May 2007 consisted of removing contaminated soil and associated debris. These removal activities were conducted in accordance with the approved work plan because asbestos was not encountered in any of the April 2007 samples and previously cleared sampling locations.

4.7 Borehole Abandonment

All of the boreholes from the March 2006 and November–December 2006 drilling programs were plugged and abandoned with a bentonite/Portland cement mixture in accordance with the approved work plan (ITSI 2005, 094312; NMED 2005, 092180). The abandoned boreholes were inspected 24 h after abandonment to determine if additional bentonite/cement was required to address settlement. The placement of additional bentonite/cement was not required. Borehole logs for the drilling activities associated with AOC 73-003, SWMU 73-004(a), SWMU 73-004(b), and SWMU 73-006 are presented in

Appendix C. Drilling and associated borehole abandonment activities were not conducted at SWMU 73-002.

4.8 Groundwater

Investigation of groundwater conditions was not within the scope of the current investigation. Alluvial groundwater in Pueblo Canyon was investigated as part of the investigation of the Los Alamos/Pueblo Canyon watershed (LANL 2004, 087390) and are summarized below.

The occurrence of alluvial groundwater in Pueblo Canyon below Consolidated Unit 73-002-99 was characterized as part of the Los Alamos/Pueblo Canyons investigation. The alluvial monitoring well nearest to Consolidated Unit 73-002-99 is well PAO-3, which is located approximately 5000 ft downslope down the canyon from the site. Water level monitoring performed from August 2000 to September 2003 showed this well to be dry approximately 60% of the time (LANL 2004, 087390, p. 7-74). An evaluation of water-level data for well PAO-3 showed that water-level variations are closely tied to precipitation and associated flood events and to winter and spring snowmelt (LANL 2004, 087390, p. 7-24).

Three rounds of sampling were conducted at alluvial well PAO-3 during the Los Alamos/Pueblo Canyons investigation. A variety of inorganic chemicals were detected. The only inorganic chemical detected above a standard was manganese, detected at 355 µg/L, slightly above the 200 µg/L standard for domestic water supplies, in one sample. Three radionuclides (americium-241, plutonium-239/-240, and strontium-90) were detected but were below standards. No organic chemicals were detected (LANL 2004, 087390).

4.9 Surface Water

Surface water is not present at Consolidated Unit 73-002-99-99, and investigation of surface water was not within the scope of the current investigation. The mesa-top portion of the consolidated unit is either paved with asphalt or covered with vegetation. These surface conditions, combined with the flat topography, create a low potential for erosion. Sites with release components on the slope [SWMUs 73-002, 73-004(a), 73-004(b), and 73-006] have higher potential for erosion. Before it was removed, the canyon slope portion of Consolidated Unit 73-002-99 was covered with dense vegetation, including native shrubs, grasses, and forbs typical of disturbed soil. Vegetation was dominated by the shrub chamisa (*Chrysothamnus nauseosus*).

The nearest occurrence of surface water is in Pueblo Canyon below Consolidated Unit 73-002-99. The Los Alamos/Pueblo Canyons investigation report characterized surface water occurrence in Pueblo Canyon near Consolidated Unit 73-002-99 as ephemeral, with local bedrock pools and emergent alluvial groundwater (LANL 2004, 087390, p. 7-67).

Surface water in Pueblo Canyon is monitored by a network of automated gage stations described in the National Pollutant Discharge Elimination System (NPDES) Storm Water Multi-Sector General Permit Nos. NMR05A734 and NMR05A735. The nearest downstream gage station in this monitoring network, E060, is located approximately 10 mi downstream from Consolidated Unit 73-002-99. In 2004, 2005, and 2006 monitoring was conducted for Sector K benchmark pollutants at station E060. Specific analyses were conducted for inorganic chemicals, dioxin and furans, PCBs, and radionuclides (americium-241, gamma spectroscopy, gross alpha, gross beta, isotopic plutonium, isotopic thorium, isotopic uranium, radium-226, radium-228, and strontium-90) at this station. A cumulative summary of the analytical results at station E060 from 2004, 2005, and 2006 are presented in the Storm Water Pollution Prevention Plan for SWMUs and AOCs and the Storm Water Monitoring Plan (LANL 2007, 096981, Volume 1, Attachment 2, Tables

A1–A12). The Laboratory also monitors site-specific storm water runoff from SWMUs 73-002 and 73-006 in accordance with the Federal Facility Compliance Agreement (FFCA) between DOE and EPA. Samples are collected at a single-stage sampler (sample management area P-SMA-2) located approximately 500 ft from the SWMUS (Figure 4.9-1). Samples collected at P-SMA-2 are submitted for analysis of inorganic chemicals and mercury, in addition to general water-quality measurements (e.g., total suspended sediments). The results of the site-specific monitoring conducted in 2004, 2005, and 2006 are provided in the Storm Water Pollution Prevention Plan (LANL 2007, 096981, Volume 1, Attachment 2, Tables B1 to B-8).

In accordance with the requirements of the FFCA, erosion-control BMPs consisting of check dams and rock-lined drainages on the east and west sides of the incinerator facility have been installed at Consolidated Unit 73-002-99. Additionally, earthen berms were installed to control storm water run-on and runoff associated with the access roads at both ends of the site boundary, and earthen berms were installed at the drainages across the access road just northwest and northeast of the incinerator facility. Straw wattles were emplaced along the upper edge of the mesa top. These BMPs were installed primarily to divert storm water run-on away from the site and to control erosion and transport of sediments from the ash pile area (LANL 2004, 087433, p. 4-5). Erosion-control BMPs were installed as part of postremediation site restoration activities and are described in section 5.4.

5.0 DEBRIS AND ASH REMOVAL ACTIVITIES AT SWMU 73-002 AND SOIL REMOVAL ACTIVITIES AT SWMUs 73-004(b) AND 73-006

The primary objective of removal activities implemented at SWMU 73-002 was to remove the ash and debris on the slope below the former incinerator. The ash contained COPCs at concentrations exceeding residential SALs for radionuclides and residential SSLs for inorganic and organic chemicals. In general, the extent of remediation activities in the SWMU 73-002 was determined by the visible presence of ash and debris on the slope, but a limited amount of soil outside of the visible ash and debris (approximately 200 yd^3) containing inorganic chemicals above residential SSLs was also removed.

The upper section of SWMU 73-002 consisted primarily of the ash pile, which started below the incinerator building and continued down the slope for approximately 140 ft. At this point, the ash was prevented from continuing down the slope by a large number of cans that had come to rest on a rock outcrop (Photographs 1, 2, 3, 35, and 38, Appendix G). The debris extended for approximately 100 ft from the top of the rock outcrop down the slope, although some heavier objects were found as far as 300 ft downslope from the rock outcrop. The removal of the debris outside the ash pile was conducted separately, as discussed in the following sections.

5.1 Debris Removal

The debris located beyond the ash pile consisted primarily of metal cans, fire brick, pottery, car parts, and tires. The extent of the debris field was established through field investigation during the characterization of the ash in 2005. The debris field started at the top of the rock outcrop and was also encountered in the two drainages located on the sides of the ash pile (Photographs 3, 15, 16, 20, Appendix G). The rock outcrop extends approximately 80 ft down the slope and is nearly vertical with an average slope of 70 degrees. Vegetation on the outcrop consisted primarily of scrub oak (Photographs 35 and 38, Appendix G).

5.1.1 Manual Removal

The removal of debris outside of the ash pile was initiated in early November 2005. Debris was collected using hand tools and placed into bags and gunnysacks for removal from the hillside. Field technicians used rappelling equipment to safely collect debris from the steeper portions of the debris field. After a week of consolidating material, a skyline yarder was brought to the site to haul the debris to the mesa top where it was loaded into roll off bins. The skyline yarder is a piece of equipment primarily used for logging operations that allows materials to be brought up steep slopes using a motorized carriage attached to a skyline (Photographs 21, 24, 41, and 42, Appendix G). The skyline yarder was run from the top of a 40-ft mast near the former incinerator to an anchor at the bottom of the canyon (Photographs 25 and 26, Appendix G). Debris-filled bags were placed in a cargo net attached to the carriage of the skyline yarder with a retractable cable, called a hayline. The carriage brought the cargo net to the surface where it was dumped into the bucket of a front-end loader, which deposited the material into roll-off bins. A total of 100 yd^3 of debris was bagged from outside the ash pile and removed from the hillside in November 2005. Waste management documentation for the debris removal is included in Appendix F.

On November 16, 2005, a World War II Japanese rifle grenade was discovered during debris removal operations on the western portion of the hillside on top of the rock outcrop (Photographs 27 and 28, Appendix G). The Laboratory's Emergency Response Team was called to the site where the rifle grenade was detonated in place. Removal of debris was suspended until procedures could be put in place to control the potential hazard associated with UXO, and the crews and equipment were demobilized while the UXO hazard was evaluated.

Modifications to the approved work plan (ITSI 2005, 094312; NMED 2005, 092180) and SSHASP were made as an addendum to outline the steps necessary to provide UXO-construction support (ITSI 2006, 096810). These modifications included the presence of a UXO team to observe all intrusive activities in the debris field as well as in the ash pile to ensure that any additional UXO were identified and not removed from the hillside with the debris and ash as outlined below. The team's role was to

- provide munitions and explosives of concern (MEC) oversight during the collection of metallic debris to ensure that no hazardous MEC materials were collected;
- identify any potentially hazardous MEC items, mark the item, and report the location to the site superintendent and on-site Health and Safety Officer;
- provide MEC oversight during the collection of ash to original grade as required;
- sort, certify, and verify (as required) all debris before it is shipped off-site;
- support the collection of soil samples, as required;
- provide initial MEC awareness training for all project personnel;
- provide daily tailgate safety awareness training;
- provide a MEC safety briefing during daily tailgate safety meetings; and
- promote an overall awareness among the field project team of the potential presence of MEC at the site.

The procedures for securing UXO and coordinating the removal of the UXO with the Emergency Response Team were also included in the addendum (ITSI 2006, 096810). The procedures also included initial UXO awareness training for all site personnel as well as daily awareness training at tailgate safety meetings.

During December 2005, the debris in the roll-off boxes was emptied, inspected by the UXO team and reloaded into the boxes to verify that no UXO was in the debris. UXO items were not identified, and no additional debris was removed from the site during the inspection.

In September 2006, additional crews were remobilized to complete the removal of debris and ash from the site using the same processes and equipment employed in 2005. In addition to bagging cans, heavier items including pieces of concrete culverts, car parts, and large bricks were removed by attaching them directly to the hayline or by loading the items into 8-ton nylon super sacks (Photographs 37, 38, and 39, Appendix G).

On October 7, 2006, while personnel were bagging debris, a 37-mm projectile was discovered in the same area of the site where the rifle grenade was found (Photograph 51, Appendix G). The UXO team determined that the round had been rendered inert and coordinated the removal and disposition of the projectile with the Laboratory's Emergency and Response Team. The removal of debris from the hillside that had not come into contact with ash was completed in early October 2006. A total of 220 yd^3 of debris was bagged and removed from outside the ash pile during the fall of 2006. Waste management documentation for the debris is provided in Appendix F.

A total of 320 yd^3 of debris from outside the ash pile was bagged and removed from the hillside during the two events. The remainder of the debris removed during the project was in contact with either ash or contaminated soil and was removed and disposed of along with the ash and contaminated soil.

5.2 Ash Removal, SWMU 73-002

The ash consisted primarily of small angular and granular material commingled with an abundance of broken glass and degraded metal, probably from cans. A lesser amount of debris encountered in the ash included small bricks, large metal items, conglomerates of melted glass, metal and rock, and transite (discussed in Section 4.6). Other objects noted in the ash included strips of film, wire, and paper items that were not completely incinerated.

The top of the ash pile was defined by a concrete pad with two piers extending over the ash pile (Photograph 9, Appendix G). The piers were used to dump the ash onto the slope, and the ash fanned out from the piers to the east and west. The bottom of the ash pile was defined by a heavy concentration of cans and debris at the top of a rock outcrop, which held the ash from migrating downslope. The ash extended past the can/debris pile in two small areas on the western edge of the site. The ash was removed using a mixture of excavation and vacuum techniques as discussed in the following sections.

5.2.1 Pilot Test of Ash Removal by Vacuum

In November 2005, a Reach Guzzler trailer-mounted vacuum was mobilized to determine the cost-effectiveness of using vacuum systems to remove all of the ash. This vacuum system utilized high volume air flow suction with a 1-µ filter exhaust. After multiple attempts using different techniques and settings to vacuum the ash, it was apparent that this particular vacuum was not adequate to remove the ash.

In December 2005, a Gap Vac truck-mounted Super Sucker was brought to the site for a pilot test for vacuuming the ash (Photograph 18, Appendix G). The Gap Vac operated for approximately 1 wk removing a total of 26 yd^3 of ash indicating that this system could be used to remove ash from the slope (Photographs 29 and 30, Appendix G). Volumes were low during this operation because the ground was frozen. The removal of the ash using the Gap Vac system was conducted under the observation of the UXO team.

The ash removed using both systems was placed into double-lined nylon super sacks and stored on-site. The production rates for the vacuum systems indicated that the bulk of the ash should be removed by excavation, with the vacuum system being used for residual cleaning. Following the two pilot tests, the ash pile was covered with plastic sheeting in preparation for the winter (Photographs 31 and 32, Appendix G).

5.2.2 Ash Removal by Excavation

In October 2006, an excavator specializing in steep-slope operations, known as a "Spyder" excavator, was mobilized to excavate the bulk of the ash from the hillside (Photographs 43, 44, 45, 49, 50, 58, 60, 66, and 68, Appendix G). The Spyder excavator consolidated ash under the skyline yarder where the ash was loaded into a steel 2½-yard bucket attached to the hayline, and the ash was brought to the top of the slope and emptied directly into lined roll-off boxes (Photographs 46 and 57, Appendix G). To minimize dust, water sprinklers were used to add moisture to the ash before excavation activities began (Photograph 55, Appendix G). During operations, a dedicated field technician was placed above the excavation working off rappelling lines to spray the work area with water (Photographs 47, Appendix G). Water was also used to control dust when the bucket was dumped into the roll off boxes. The ash was dumped slowly into the boxes so the UXO team could identify suspect items contained in the ash. When suspect UXO items were identified, crews spread out the ash inside the roll-off box using rakes to allow the UXO team to inspect the suspect item (Photographs 36 and 61, Appendix G). No UXO items were identified during the removal of the ash.

Several pieces of transite and two pieces of asbestos-containing fabric were found in the ash, as discussed in section 4.6 (Photograph 52, Appendix G). The crews operating the Spyder excavator and skyline yarder, as well as the workers at the disposal facility, received asbestos worker training. All of the roll-off boxes were double lined with 6-mil or 10-mil poly liners and all seams glued and taped to prevent ash from becoming exposed following the identification of ACM.

Near the end of October 2006, the volume of ash being removed exceeded the on-site storage capacity because of the limitations on transportation of roll-off boxes to TA-54. A temporary lined stockpile area was created at the top of the slope to store the ash until additional roll-off boxes became available (Photograph 64, Appendix G). The stockpile was created using two layers of 10-mil poly sheets for a total of 20-mil protection on the top and bottom, and all poly-liner seams were glued and taped to prevent migration of the ash (Photographs 62 and 64, Appendix G). A total of 544 yd^3 of ash was placed into the temporary stockpile, and the stockpile was emptied and loaded into roll-off boxes within 1 wk.

On October 31, 2006, excavation of the bulk ash was completed, and both the Spyder excavator and skyline yarder were decontaminated and demobilized from site. A total of 1937 yd^3 of ash was removed using these two pieces of equipment. The remainder of the ash was removed using a vacuum system (as discussed below) because the remaining material was in areas inaccessible to the Spyder excavator or were in crevices between rocks requiring detailed removal activities.

5.2.3 Ash Removal by Vacuum

In November 2006, after the bulk ash had been removed by excavation, a Gap Vac Super Sucker vacuum truck was brought to the site to complete the ash removal. The crew used small hand tools to remove ash from crevices between rocks (Photographs 71 and 72, Appendix G). A second Gap Vac truck was brought in to increase production. The trucks emptied the ash collected into their hoppers onto the concrete pad where it was loaded into double-lined roll-off boxes using a skid steer loader.

In addition, field screening with the XRF (section 4.5) indicated that contaminated soil was present in some areas following the removal of the ash. The crews used hand tools to loosen the contaminated soil and tuff in these areas before the material was removed with the vacuum (Photographs 90 and 93, Appendix G).

The removal of ash using the Gap Vac system was suspended on November 29, 2006, following a snow storm that made working on the steep slope unsafe (Photographs 73, 74, 77, and 78, Appendix G). The vacuum operations were restarted on December 7, 2006, after partial snow melt allowed access to the slope; however, the small hand tools were not able to break up the frozen soil. The vacuum crews switched to electrical demolition hammers to break up the contaminated soil and associated debris (Photographs 76 and 77, Appendix G). A snow storm on December 28 and December 29, 2006, left over 2 ft of snow on the hillside, preventing the completion of vacuum operations until the spring of 2007. In November and December 2006, the vacuum trucks were used to remove a total of 753 yd^3 of ash and contaminated soil from between the rock outcrops. The upper two-thirds of the site was cleaned with the vacuum trucks before the winter demobilization.

The two vacuum trucks were remobilized to the site on April 9, 2007, to remove the remaining contaminated soil and associated debris from the lower rock outcrop as well as to remove additional soil from three sampling locations (73-25564, 73-27281, and 73-27296). The sample results from November and December indicated that the surface samples required additional removal to achieve residential SSLs. Additional confirmation samples were collected from these locations in April 2007, following additional vacuum operations. A total of 376 yd^3 of ash was removed using the vacuum systems between April 9 and May 3, 2007. A spring snow storm on April 13, 2007, required that vacuum operations cease for 2 days because of safety concerns.

The contaminated soil in the lower rock outcrop contained a significant amount of metallic debris. In order to prevent the vacuum lines from being plugged with this debris and contaminated soil, the metallic debris was placed in the 8 ton sacks for disposal with the contaminated soil. A crane was mobilized to the site on April 30, 2007, to remove 158 yd^3 of bagged debris and contaminated soil from the lower portion of the site (Photographs 98 and 99, Appendix G), These bags of debris and contaminated soil were stored and disposed of with the ash/contaminated soil removed by vacuum operations.

5.3 Removal Activities SWMU 73-004(b)

The samples collected from the outfall area during previous investigations encountered PCB concentrations above the residential SSL, and the soil samples collected in March 2006 and November 2006 delineated the vertical and horizontal extent of the PCBs. Soil within the outfall area was removed to a depth of 2 ft in May 2007; the vacuum system was used to remove ash and contaminated soil from SWMU 73-002 (Photograph 102, Appendix G). The 36 yd^3 of contaminated soil was managed separately for disposal purposes.

5.4 Removal Activities SWMU 73-006

The sample collected from location 73-25558 contained elevated levels of lead and dioxins. The contaminated soil around the foundation associated with the former smokestack was removed by hand to a depth of 10 to 12 in. in January 2007. Confirmation soil samples were collected from the base of this excavation, and the excavated area was backfilled with road base to allow access to this area (Photographs 81 and 82, Appendix G). The presence of buried utilities for the former incinerator and for the airport facility limited the excavation activities. The 25 yd^3 of contaminated soil was managed with the ash and contaminated soil removed from the ash pile (SWMU 73-002).

5.5 Packaging and Staging of Ash and Debris for Transportation and Disposal

This section describes the packaging, staging, transportation, and disposal of ash debris, and IDW from the remediation of SWMUs 73-002, 73-004(b), and 73-006, although the waste generated from the removal activities at SWMU 73-006 were managed and disposed along with the wastes from SWMU 73-002. The waste streams generated from the implementation of investigation and remediation activities included (1) metallic debris collected outside of the ash pile, which primarily consisted of cans, without visible ash; (2) ash and contaminated soil containing ACM and debris, which included old car parts, cans, tires, bricks, rubber, stainless-steel pipe, and other miscellaneous metal debris; (3) contaminated soil with debris, which primarily consisted of cans, without ACM; (4) soil contaminated with low concentrations of PCBs (<10 mg/kg) removed from the SWMU 73-004(b) outfall area; (5) decontamination water from the decontamination of sampling and excavation equipment; (6) drill cuttings; and (7) IDW including PPE, disposable sampling equipment, plastic sheeting, decontamination supplies, etc.

The containers for all these waste streams were labeled per regulatory requirements pending generation transport and disposal paperwork. The waste streams were profiled through the Laboratory's Waste Services department for approval of final disposition of the waste. The waste characterization and management documentation is provided in Appendix F.

The wastes from SWMU 73-002 were excavated and/or vacuumed and placed in IP1 super-sacs or into lined, tarped roll-containers. Once the containers were full, the waste was taken from the waste load-out area between the incinerator and ashpile and placed in a fenced waste accumulation area within the airport parking lot, which was posted with radioactive waste and ACM placards.

The waste stream consisting of miscellaneous debris collected outside of the ash pile that had no visible signs of ash was determined to be industrial waste and was disposed at off-site landfills. Five shipments of debris removed from the site in November 2005, comprising a total of 22.9 tons, were incorrectly disposed at the Los Alamos County landfill instead of at an industrial landfill as required by the approved work plan (ITSI 2005, 094312). Because this waste was not disposed of in accordance with the work plan, NMED required DOE to provide additional information on the waste stream, including copies of all manifests, shipping documents, certifications, disposal facility receipts, and waste characterization analytical data (NMED 2005, 092425). This information was provided to NMED by DOE on January 18, 2006 (DOE 2006, 096979). All other waste associated with this waste stream, including the debris removed in October 2006, was disposed at the Waste Management Landfill in Rio Rancho, NM.

Characterization of the ash and associated debris waste stream was based on waste characterization data from samples of ash collected in situ. Initial characterization was based on sampling performed by ITSI in 2005 (ITSI 2005, 094312). Additional characterization was based on sampling performed during the implementation of the approved work plan. Characterization results showed that the waste did not exhibit any characteristic of hazardous waste. Although several hazardous constituents potentially associated with listed hazardous wastes were detected at trace levels, NMED concurred that the waste did not contain any listed hazardous wastes (NMED 2006, 093544). On October 9, 2006, materials in the ash that were considered to be potentially asbestos-containing were observed, and the waste was resampled for asbestos. Waste characterization data confirmed that the waste stream contained ACM, and the waste characterization strategy form was amended to include the new waste stream. The waste stream consisting of ash with associated debris was handled as low-level waste (LLW) with ACM and disposed at Area G at TA-54.

The contaminated soil and debris removed in April and May 2007 was sampled to determine that this waste stream did not contain ACM because the ash had been removed previously. The contaminated soil

and debris were determined to still be LLW. This waste stream was managed in accordance with the approved work plan as LLW and was disposed at Area G at TA-54.

The soil removed from the outfall area of SWMU 73-004(b) was placed in lined, tarped roll-off containers and stored in the waste storage area in the airport parking lot. This waste was determined to be nonregulated soil (<10 mg/kg PCB) and was disposed at the Waste Management Landfill in Rio Rancho, New Mexico.

The decontamination water was containerized in drums and stored in the waste storage area within the airport parking lot. The decontamination water was characterized as LLW and was disposed of at Area G at TA-54.

Drill cuttings were containerized in drums and stored within the waste storage area of the airport parking lot. Two drums of drill cuttings contained elevated levels of selenium that were presumed to be RCRA characteristic waste, and a hazardous waste storage area was established within the overall waste storage area for the management of these drums. Weekly inspections were conducted for the drums in this hazardous waste storage area. These drums were shipped to Area L at TA-54 as presumed RCRA characteristic wastes based on concerns about the duration of on-site waste accumulation activities. The remaining IDW was characterized and determined to be LLW and was disposed at Area G at TA-54.

On November 16, 2005, a World War II Japanese rifle grenade was discovered during debris-removal operations on the western portion of the hillside. The Laboratory's Emergency Response Team was called to the site where the team detonated the rifle grenade in place. On October 7, 2006, a 37-mm projectile was discovered while bagging debris in the same area of the site as the rifle grenade. The UXO team determined that the round had been rendered inert and coordinated the removal and disposition of the projectile with the Laboratory Emergency and Response Team.

5.6 Site Restoration

Site restoration activities included implementation of erosion-control BMPs at the former ash pile. These measures included routing surface water drainage from the airport parking lot away from the disturbed areas and covering the disturbed areas with permanent erosion-control matting (Photographs 103, 108, 109, and 110, Appendix G).

6.0 REGULATORY CRITERIA

This section describes the regulatory criteria used for screening sample results and for evaluating whether cleanup levels have been met. Regulatory criteria identified in Section XI.C.8 of the Consent Order include cleanup standards, risk-based screening levels, and risk-based cleanup goals, and are established by medium. These criteria are discussed in the following subsections. Applicable criteria identified in this section are included in the data tables in section 7 and in Appendix B.

6.1 Screening Levels

Screening levels for chemicals are NMED residential SSLs as presented in the "Technical Background Document for Development of Soil Screening Levels, Revision 4.0" (NMED 2006, 092513). In accordance with this guidance, if an NMED residential SSL is not available for a chemical, the EPA Region 6 screening level is used as the SSL (adjusted to 10^{-5} risk for carcinogens)(EPA 2006, 094321). Residential SSLs are presented in the chemical data tables.

Screening levels for radionuclides in soil and tuff are residential SALs based on a 15 mrem/yr dose and are derived using RESRAD, Version 6.21 (LANL 2005, 088493). The SALs for residential exposure are presented in radionuclide data tables.

6.2 Cleanup Goals and Levels

The cleanup goals specified in Section VIII of the Consent Order are a target risk level of 10^{-5} for carcinogens and a hazard index (HI) of 1.0 for noncarcinogens. DOE has established a cleanup goal of 15 mrem/yr for radioactively contaminated sites. The screening levels described in section 6.1 are based on these cleanup goals.

Section VIII.B.1 of the Consent Order specifies that SSLs for chemicals are to be used as cleanup levels unless determined to be impracticable or unless SSLs do not exist for the current and reasonably foreseeable future land use. In the case of Consolidated Unit 73-002-99, the current and reasonably foreseeable future land use is industrial for the mesa-top portion and recreational for the canyon-slope component. However, use of cleanup levels based on these land uses requires controls to ensure that land use remaines consistent with these cleanup levels. Because this property is either no longer under the administrative control of DOE, or is planned for transfer from DOE control, the cleanup levels are based on residential land use. Although residential land use is not representative of current or reasonably foreseeable future land use, cleanup to residential levels does not require future controls on land use.

Cleanup levels for radionuclides are the residential SALs based on 15 mrem/yr (LANL 2005, 088493), which is consistent with DOE's guidance for release of sites for unrestricted use (DOE 2000, 067489).

7.0 SITE CONTAMINATION

The following sections summarize the results of field-screening and fixed analytical sampling results obtained during remediation and characterization/confirmation sampling activities at Consolidated Unit 73-002-99. Appendix B provides a detailed review of the analytical results.

7.1 Sampling Summary

With the exceptions presented in section 3.6, sampling and analysis were conducted as specified in the approved work plan for corrective action of SWMU 73-002 and investigation of Consolidated Unit 73-002-99 (ITSI 2005, 094312; NMED 2005, 092180). Additional samples were collected based on review of initial sampling results to define the extent of contamination and to confirm cleanup of SWMUs 73-004(b) and 73-006, which was not originally planned. All the analytical data are presented in Appendix E (on DVD and CD)

7.1.1 SWMU 73-002

Sampling conducted at SWMU 73-002 included characterization sampling to define the extent of contamination and confirmation sampling to determine whether cleanup levels were achieved by removal activities (Plate 1). Historical sampling at SWMU 73-002 is described in section 2.1.2. Most of these sampling locations were excavated during the ash and debris removal activities, and the results from these samples were not used to define the extent of contamination. Characterization sampling performed during the recent investigation is described in sections 3.1.1, 3.1.2, and 3.1.4. Characterization sampling at SWMU 73-002 also included collecting surface soil/sediment samples from the three drainages next to and below the ash pile, as specified in the approved work plan (ITSI 2005, 094312; NMED 2005,

092180). Based on an initial review of analytical results, an additional six subsurface samples were collected in the drainages to define the vertical extent of contamination.

Confirmation sampling is described in section 3.1.4 and included collecting soil and tuff samples from locations within the footprint of the former ash pile, as specified in the approved work plan (ITSI 2005, 094312; NMED 2005, 092180). At each location, samples were collected from up to 3 depth intervals, depending on site conditions.

The above sampling was conducted in three sampling campaigns. In March 2006, 57 samples were collected from 45 locations. Twenty-three of these samples from 16 locations were later excavated during remedial activities. From November 2006 to January 2007, 75 samples were collected from 39 locations. Four samples from three locations were later excavated during remedial activities. The final sampling campaign took place in April and May 2007. Fifty-two samples were collected from 29 locations. Excluding excavated samples, there are a total of 167 samples from 91 locations from the historical and recent sampling events for SWMU 73-002. These samples and associated analyses are summarized in Table 3.1.1-1, and the sampling locations are shown in Plate 1.

7.1.2 AOC 73-003

The characterization of nature and extent of contamination at AOC 73-003 is based on a combination of the results from historical sampling and sampling conducted during the current investigation. Historical sampling at AOC 73-003 is described in section 2.2.2 and included eight samples collected from four locations (LANL 2005, 090579, Table 2.18-1). During the current investigation, 14 samples were collected from six locations as specified in the approved work plan (ITSI 2005, 094312; NMED 2005, 092180). Four samples specified in the approved work plan were not collected because of a lack of core recovery or insufficient soil thickness. In addition, six samples were collected from two locations not specified in the approved work plan to investigate a former storage area that was identified during a review of historical documents (locations 73-27233 and 73-27234). The samples collected at AOC 73-003 and associated analyses are summarized in Table 3.2.1-1 and sampling locations are presented in Figure 3.2.1-1.

7.1.3 SWUM 73-004(a)

The characterization of nature and extent of contamination at SWMU 73-004(a) is based on both the results from historical sampling and sampling conducted during the current investigation. Historical sampling at SWMU 73-004(a) is described in section 2.3.2 and included the collection of seven samples from four locations (LANL 2005, 090579, Table 2.18-1). During the current investigation, seven samples were collected from three locations as specified in the approved work plan (ITSI 2005, 094312; NMED 2005, 092180). One sample specified in the approved work plan was not collected because of insufficient soil thickness. The samples collected at SWMU 73-004(a) during the current investigation and associated analyses are summarized in Table 3.3.1-1 and sampling locations are presented in Figure 3.3.1-1.

7.1.4 SWMU 73-004(b)

The characterization of nature and extent of contamination at SWMU 73-004(b) is based on both the results from historical sampling and sampling conducted during the current investigation. Historical sampling at SWMU 73-004(b) is described in section 2.4.2 and included 19 samples collected from 12 locations (LANL 2005, 090579, Table 2.18-1). Five samples from four locations were later excavated during cleanup activities. During the current investigation, 31 samples were collected from 13 locations as specified in the approved work plan (ITSI 2005, 094312; NMED 2005, 092180). One of these samples was excavated during cleanup activities, along with five historical samples. Seven samples specified in

the approved work plan were not collected because of hand-auger refusal or insufficient soil thickness. Based on an initial review of analytical results, an additional 13 samples were collected from 6 locations not specified in the approved work plan to define extent of contamination. Finally, eight confirmation samples from four existing locations were collected following cleanup activities. The samples collected at SWMU 73-004(b) during the current investigation and associated analyses are summarized in Table 3.4.1-1 and sampling locations are presented in Figure 3.4.1-1.

7.1.5 SWMU 73-006

The characterization of nature and extent of contamination at SWMU 73-006 is based on both the results from historical sampling and sampling conducted during the current investigation. Historical sampling at SWMU 73-004(b) is described in section 2.5.2 and included the collection of 10 samples from five locations (LANL 2005, 090579, Table 2.18-1). During the current investigation, eight samples were collected from five locations as specified in the approved work plan (ITSI 2005, 094312; NMED 2005, 092180). One of these samples was later excavated during cleanup activities. Six samples specified in the approved work plan were not collected because of hand-auger refusal or insufficient soil thickness. Based on an initial review of analytical results, an additional four samples were collected from two locations not specified in the approved work plan to define extent of contamination. Two additional confirmation samples from an existing location were collected following cleanup activities. The samples collected at SWMU 73-006 during the current investigation and associated analyses are summarized in Table 3.5.1-1 and sampling locations are presented in Figure 3.5.1-1.

7.2 Field-Screening Results

The following sections summarize field-screening results for radioactivity, metals, and VOCs from the recent investigation.

7.2.1 Field Screening for Radioactivity

Radiation screening was conducted on all samples by a radiation control technician before the soil samples were shipped. All the radiation-screening results were within local background ranges. The results of the radiation screening are presented on the sample collection logs in Appendix C.

7.2.2 Field Screening for VOCs

Field screening for VOCs was conducted in conjunction with the confirmation sample collection at the site in accordance with SOP-06.33, “Headspace Vapor Screening with a Photo Ionization Detector.” Headspace VOC screening was performed for samples collected at SWUM 73-002 during November 2006 using a HNU PI101 PID equipped with an 11.7-eV lamp. VOC screening data are presented in Table H-2, in Appendix H; all vapor-screening results were less than 1 ppm.

7.2.3 Field Screening for Metals

Field screening for metals was conducted in conjunction with the confirmation sample collection at the former ash pile in accordance with SOP-09.13, “X-Ray Fluorescence Analysis.” XRF screening was performed for all confirmation samples using a Nikon Model XLT 700 XRF. A minimum of four XRF samples, including one sample from the center of each grid cell (which corresponds to a specific sampling location [see crosswalk in Appendix H]), was collected from each of the grid cells following the visual removal of ash and debris. These results were compared with SSLs and BVs, as presented in Table H-2

in Appendix H. The majority of the SSL/BV exceedances were for lead, arsenic, iron, and vanadium, although manganese and copper exceeded SSL/BV in one or two XRF samples. Additional removal activities were conducted when the XRF results were greater than the SSLs/BVs and additional XRF results were collected from these areas. Confirmation soil samples were collected after a minimum of four XRF sample readings below SSL/BVs.

In addition to clearing grids with the XRF before confirmation samples were collected, aliquots from the confirmation samples were collected and tested with the XRF. These additional XRF samples are presented in Table H-2, and the results of these XRF readings on samples submitted to SMO were below SSLs/BVs with the following exceptions:

- Two XRF samples (samples RE73-07-74775 and RE73-07-74732) contained arsenic at concentrations slightly higher than the BV of 8.17 mg/kg. These analytical samples were submitted to SMO because arsenic was not detected in any of the other XRF samples associated with these locations.
- One XRF sample (sample RE73-07-74680) contained vanadium above the residential SSL of 78.2 mg/kg. This sample was submitted to SMO because the sample collected above this sample did not have elevated vanadium.

7.3 Analytical Laboratory Results

The results of laboratory analysis of samples for each SWMU or AOC are summarized below. The data included in the evaluation are the data collected during the current investigation, as well as the historical data still in place used to define nature and extent of contamination.

7.3.1 SWMU 73-002

A detailed evaluation of the sampling results for SWMU 73-002 is presented in Appendix B, section B-2.0. Based on this evaluation, 17 inorganic chemicals, 9 radionuclides, and 47 organic chemicals were identified as COPCs (Table 7.3.1-1). Inorganic COPCs were identified by evaluating inorganic chemicals above BVs or above the maximum concentrations of the background data sets. Inorganic chemicals above BVs at SWMU 73-002 are presented in Table 7.3.1-2 and the sampling locations and analytical results of inorganic chemicals detected above BVs are shown in Plate 2. Radionuclide COPCs were identified by an evaluation of radionuclides detected above BVs or FVs or detected in subsurface soil and tuff if a fallout radionuclide. Radionuclides detected above BVs/FVs at SWMU 73-002 are presented in Table 7.3.1-3 and the sampling locations and analytical results of radionuclides detected above BVs/FVs are shown in Plate 3. Organic COPCs were identified by the detected organic chemicals in samples collected at SWMU 73-002. Detected organic chemicals are presented in Table 7.3.1-4, and the sampling locations and analytical results of detected organic chemicals are shown in Plate 4. Because of the large number of detected dioxin and furan congeners, results for individual congeners are not included in Plate 4. Instead, the toxicity equivalent (TEQ) concentration of 2,3,7,8-tetrachlorodibenzodioxin (TCDD) is presented in Plate 4. The TEQ represents the concentration of TCDD that would be equivalent in toxicity to the concentrations of all the detected congeners. Concentrations of individual detected congeners are presented in Table 7.3.1-4.

Evaluation of the nature and extent of contamination at SWMU 73-002 is discussed in Appendix B, section B-6.1. Based on this evaluation, the lateral and vertical extent of contamination at SWMU 73-002 is defined.

Analytical results for the 132 confirmation samples collected upon completion of ash, debris and contaminated soil removal activities indicated that cleanup goals were met. The concentrations of metals, PCBs, and dioxins and furans in these confirmation samples were generally 2 orders of magnitude lower than concentrations in the ash. Analytical results for samples collected from the four locations (73-25564, 73-27297, 73-27292, and 73-27298) where the two ordnances were encountered were nondetect for explosive compounds.

7.3.2 AOC 73-003

A detailed evaluation of the sampling results for AOC 73-003 is presented in Appendix B, section B-3.0. Based on this evaluation, 11 inorganic chemicals and 10 organic chemicals were identified as COPCs (Table 7.3.2-1). No radionuclide COPCs were identified for AOC 73-003. Inorganic chemicals above BVs at AOC 73-003 are presented in Table 7.3.2-2, and the sampling locations and analytical results of inorganic chemicals detected above BVs are shown in Figure 7.3.2-1. Detected organic chemicals are presented in Table 7.3.2-3, and the sampling locations and analytical results of detected organic chemicals are shown in Figure 7.3.2-2.

Evaluation of the nature and extent of contamination at AOC 73-003 is discussed in Appendix B, section B-7.2. Based on this evaluation, the lateral and vertical extent of contamination at AOC 73-003 is defined.

7.3.3 SWMU 73-004(a)

A detailed evaluation of the analytical results for SWMU 73-004(a) is presented in Appendix B, section B-4.0. Based on this evaluation, 12 inorganic chemicals and 28 organic chemicals were identified as COPCs (Table 7.3.3-1). No radionuclide COPCs were identified for SWMU 73-004(s). Inorganic chemicals above BVs at SWMU 73-004(a) are presented in Table 7.3.3-2, and the sampling locations and analytical results of inorganic chemicals detected above BVs are shown in Figure 7.3.3-1. Detected organic chemicals are presented in Table 7.3.3-3, and the sampling locations and analytical results of detected organic chemicals, including TEQs to represent detected dioxin and furan congeners, are shown in Figure 7.3.3-2.

Evaluation of the nature and extent of contamination at SWMU 73-004(a) is discussed in Appendix B, section B-6.3. Based on this evaluation, the lateral and vertical extent of contamination at SWMU 73-004(a) is defined.

7.3.4 SWMU 73-004(b)

A detailed evaluation of the analytical results for SWMU 73-004(b) is presented in Appendix B, section B-5.0. Based on this evaluation, 18 inorganic chemicals, 1 radionuclide, and 31 organic chemicals were identified as COPCs (Table 7.3.4-1). Inorganic chemicals detected above BVs at SWMU 73-004(b) are presented in Table 7.3.4-2, and the sampling locations and analytical results of inorganic chemicals above BVs are shown in Figure 7.3.4-1. Radionuclide detected above BVs/FVs at SWMU 73-004(b) are presented in Table 7.3.4-3, and the sampling locations and analytical results of radionuclides above BVs/FVs are shown in Figure 7.3.4-2. Detected organic chemicals are presented in Table 7.3.4-4, and the sampling locations and analytical results of detected organic chemicals are shown in Figure 7.3.4-3.

Evaluation of the nature and extent of contamination at SWMU 73-004(b) is discussed in Appendix B, section B-6.4. Based on this evaluation, the lateral and vertical extent of contamination at SWMU 73-004(b) is defined.

7.3.5 SWMU 73-006

A detailed evaluation of the analytical results for SWMU 73-006 is presented in Appendix B, section B-6.0. Based on this evaluation, 13 inorganic chemicals, 1 radionuclide, and 40 organic chemicals were identified as COPCs (Table 7.3.5-1). Inorganic chemicals detected above BVs at SWMU 73-006 are presented in Table 7.3.5-2, and the sampling locations and analytical results of inorganic chemicals above BVs are shown in Figure 7.3.5-1. The sampling locations and analytical results of radionuclides detected above BVs/FVs at SWMU 73-004(b) are shown in Figure 7.3.5-2. Detected organic chemicals are presented in Table 7.3.5-3, and the sampling locations and analytical results of detected organic chemicals, including TEQs to represent detected dioxin and furan congeners, are shown in Figure 7.3.5-3.

Evaluation of the nature and extent of contamination at SWMU 73-006 is discussed in Appendix B, section B-6.5. Based on this evaluation, the lateral and vertical extent of contamination at SWMU 73-006 is defined.

8.0 CONCLUSIONS

8.1 Summary of Investigation Activities

The primary objective of this investigation was to complete the characterization of Consolidated Unit 73-002-99 in accordance with the approved investigation work plan (ITSI 2005, 094312; NMED 2005, 092180). Field investigation activities conducted in 2005, 2006, and 2007 included drilling boreholes and sampling in and around Consolidated Unit 73-002-99 to characterize the vertical and lateral extent of contamination. Surface and shallow subsurface samples were collected from beneath distribution lines, from the former septic systems and outfalls, within drainages below the former ash pile, and from within the ash pile disposal area after ash and debris were removed. Based on the characterization data from the 2005–2007 investigation and from previous investigations conducted at the site, the nature and extent of radionuclide, inorganic, and organic COPCs in both surface and subsurface media are defined for Consolidated Unit 73-002-99.

8.1.1 SWMU 73-002

Appendix B, section B-7.1, provides a detailed discussion of the nature and extent of residual contamination at SWMU 73-002. The lateral extent of contaminants from Consolidated Unit 73-002-99 was evaluated by collecting samples from the three drainages that receive runoff from the site. The results of confirmation sampling indicate that the vertical and lateral extent of contamination of inorganic chemicals, radionuclides, and organic chemicals is defined. Analytical results from confirmation samples collected from beneath the former ash pile and debris area and within the perimeter area around the former ash pile indicate that source materials have been adequately remediated. The sampling grid was extended farther east on the debris slope than was sampled historically. The samples collected along the eastern edges of the grid had fewer COPCs and/or lower COPC concentrations than samples from originally collected from within the ash pile before cleanup. Based on the distribution and concentrations of COPCs detected in confirmation samples at SWMU 73-002, the objectives of the investigation have been met.

8.1.2 AOC 73-003

Appendix B, section B-7.2, provides a detailed discussion of the nature and extent of residual contamination at AOC 73-003. Historical sampling at AOC 73-003 focused on characterizing potential

releases from the drainline beneath the former building. Samples collected from AOC 73-003 in 2006 and 2007 were collected outside the footprint of the former building and at greater depths than the historical samples to determine the nature and extent of inorganic and organic COPCs at the site. The inorganic COPCs exceeding background at various locations and depths across the site were evaluated, and most were determined to reflect the natural variability of the tuff and not indicative of a release. The detected concentrations of selenium appear to be strongly related to the sampling event date rather than to the sampling location. Detected organic chemicals decreased to nondetect with depth. Because the site lies beneath an asphalt parking lot, no pathways exist for residual subsurface contamination migration. Based on the distribution and concentrations of COPCs at AOC 73-003, the objectives of the investigation have been met.

8.1.3 SWMU 73-004(a)

Appendix B, section B-7.3, provides a detailed discussion of the nature and extent of residual contamination at SWMU 73-004(a). Historical sampling at SWMU 73-004(a) focused on characterizing potential releases from the septic tank and the drain line from the septic tank. Samples collected at SWMU 73-004(a) in 2006 were stepped out from historical sampling locations and taken at greater depths than the historical samples to determine the nature and extent of inorganic and organic COPCs at the site. The outfall for the drain line discharges onto SWMU 73-002 and releases from the outfall were characterized as part of the investigation of SWMU 73-002. Extent of COPCs is defined by adjacent SWMUs 73-002, 73-004(b), and 73-006 or by decreasing concentrations. Based on the distribution and concentrations of COPCs at SWMU 73-004(a), the objectives of the investigation have been met.

8.1.4 SWMU 73-004(b)

Appendix B, section B.7.4, provides a detailed discussion of the nature and extent of residual contamination at SWMU 73-004(b). Historical sampling at SWMU 73-004(b) focused on characterizing potential releases from the septic tank and the drain line from the septic tank. Samples collected at SWMU 73-004(b) in 2006 were stepped out from historical sampling locations and taken at greater depths than the historical samples to determine the nature and extent of inorganic and organic COPCs at the site. Based on the distribution and concentrations of COPCs following cleanup activities, the objectives of the investigation have been met.

8.1.5 SWMU 73-006

Appendix B, section B-7.5, provides a detailed discussion of the nature and extent of residual contamination at SWMU 73-006. Historical sampling at SWMU 73-006 focused on characterizing potential releases from the drainlines and emissions stack associated with the former incinerator. Samples collected from SWMU 73-006 in 2006 and 2007 were taken outside the footprint of the former stack and at greater depths than the historical samples to determine the nature and extent of inorganic and organic contamination at the site. Based on the distribution and concentrations of COPCs following cleanup activities, the objectives of the investigation have been met.

8.2 Summary of Remediation Activities

The primary objective of remediation activities implemented at SWMU 73-002 in 2005, 2006, and 2007 was to remove incinerator ash and debris from the slope of Pueblo Canyon with concentrations of COPCs exceeding residential SALs for radionuclides and SSLs for inorganic and organic chemicals. The remediation objective has been met.

8.2.1 SWMU 73-002

After waste characterization sampling was completed in 2005, a total of 3544 yd^3 of ash, associated debris, and contaminated soil was removed from the canyon slope of SWMU 73-002 using several methods, including hand picking, mechanical excavation, and vacuuming. Field screening of the soil and tuff underlying the ash pile was performed to guide waste removal and to verify that cleanup levels had been achieved. Wastes removed from the disposal area were placed into appropriate containers (e.g., roll-off bins) and transported off-site for disposal. Waste management activities included screening the wastes for conformance with the waste profiles and preparation of the necessary documentation. Site restoration activities included implementation of erosion control BMPs at the former ash pile area. These measures included routing surface water drainage from the airport parking lot away from the disturbed areas and covering the disturbed areas with permanent erosion-control matting.

8.2.2 SWMU 73-004(b)

Approximately 36 yds^3 of contaminated soil was excavated from the outfall area of SWMU 73-004(b) in May 2007 to remove elevated concentrations of PCBs. Confirmation soil samples were subsequently collected from four locations; analytical results indicate that the cleanup goals were met.

8.2.3 SWMU 73-006

In January 2007, 25 yd^3 of contaminated soil was excavated from SWMU 73-006 adjacent to the former incinerator emission stack foundation to remove soils contaminated with lead and dioxins. Confirmation samples were collected from three locations; the analytical results indicated that cleanup goals were met.

8.3 Comparisons to Cleanup Levels

This section presents a comparison of the exposure point concentrations of COPCs detected at the SWMUs and AOC comprising Consolidated Unit 73-002-99 to applicable cleanup levels. For each of these sites, the COPCs identified in Appendix B, section B-1, were compared to residential SSLs for inorganic and organic COPCs (EPA 2006, 094321; NMED 2006, 092513) or SALs (LANL 2005, 088493) for radionuclide COPCs. As a first step in the screening process, the maximum detected concentration of each COPC from the depth interval 0 to 12 ft was compared to 10% of the residential SSL or SAL. If the maximum detected concentration was less than 10% of the residential SSL or SAL, the COPC was eliminated from further evaluation. If the maximum detected concentration was 10% or more of the residential SSL or SAL, the COPC was evaluated further by calculating 95% upper confidence limits (UCLs).

Calculation of the 95% UCL is based on EPA guidance (EPA 2002, 085640), which is also the basis for the EPA software ProUCL. The choice of UCL calculation method is based on the distribution of the data. If the p-value indicates that the untransformed data are not significantly different from normal ($p>0.05$), normal distribution is assumed. If the p-value is less than 0.05, normality is rejected and lognormality is considered. If the log transformed data are not significantly different from normal ($p>0.05$), lognormality is assumed. If the p-value is less than 0.05, then lognormality is rejected and a nonparametric (distribution free) UCL is used. For normal data, the UCL is based on the Student t-statistic. For lognormal data, the Land method using the H-statistic (H-UCL) is used, unless the sample size and skew of the data indicate that the Land method is not appropriate. In that case, the Chebyshev inequality using minimum variance unbiased estimates of the lognormal parameters is used. If the distribution is neither normal nor lognormal, a nonparametric estimate based on the Chebyshev inequality using the mean and standard deviation is used. In calculating the UCL values, nondetects were included as one-half the detection limit for that sample.

Samples from SWMUs 73-002, 73-004(a), and 73-006 were analyzed for dioxins and furans. Only one of the dioxin and furan congeners, TCDD, has a SSL (EPA 2006, 094321). Therefore, dioxin and furan data were evaluated using toxicity equivalency factors (TEFs) to convert the congeners to equivalent TCDD concentrations. The sum of the equivalent congener concentrations is known as the TEQ concentration and was compared to the residential SSL for TCDD. The TEF values were obtained from 2005 World Health Organization guidance (available at http://www.who.int/ipcs/assessment/tef_update/en/index.html). Initially, the maximum detectedconcentration of each congener was used with TEFs to calculate a maximum TEQ value. If this value was less than 10% of the residential SSL for TCDD, dioxins and furans were eliminated from further consideration. If the maximum TEQ exceeded 10% of the residential SSL for TCDD, the 95% UCL for each congener was determined and used to calculate a 95% UCL TEQ for TCDD.

8.3.1 SWMU 73-002

The results of the comparisons of COPC concentrations to the residential SSLs and SALs are presented in Table 8.3.1-1. Arsenic is the only COPC with the maximum detected concentration exceeding the residential SSLs or SALs. Four other inorganic COPCs (aluminum, antimony, lead, and thallium) and three organic COPCs (Aroclor-1254, benzo[a]pyrene, and benzo[b]fluoranthene) had concentrations or detection limits exceeding 10% of the residential SSLs. In addition, the maximum TCDD TEQ exceeded 10% of the residential SSL for TCDD. Two radionuclides (cesium-137 and plutonium-239) had concentrations exceeding 10% of the residential SALs.

Aluminum, antimony, arsenic, lead, thallium, Aroclor-1254, benzo(a)pyrene, benzo(b)fluoranthene, cesium-137, plutonium-239, and dioxin and furan congeners were evaluated further by calculating the 95% UCLs. The results of the UCL calculations are presented in Table 8.3.1-2 for all except TCDD. The 95% UCLs for each of the dioxin/furan congeners were used to calculate a 95% UCL TEQ TCDD concentration, which is presented in Table 8.3.1-3.

The 95% UCLs were used to calculate a HI for noncarcinogenic COPCs, cancer risk for carcinogenic COPCs, and dose for radionuclide COPCs (Table 8.3.1-4). The HI is 0.2, which is less than the cleanup goal of 1.0. The total excess cancer risk is 7×10^{-6}, which is less than the cleanup goal of 10^{-5}. The total dose is 3.3 mrem/yr, which is less than the cleanup goal of 15 mrem/yr. The equivalent total risk from radionuclide COPCs for the residential scenario based on EPA preliminary remediation goals (http://epa-prgs.ornl.gov/radionuclides/) is 4×10^{-7}. There is no potential unacceptable risk or dose to human health under a residential scenario at SWMU 73-002.

8.3.2 AOC 73-003

The results of the comparison of COPC concentrations to the residential SSLs and SALs are presented in Table 8.3.2-1. The maximum detected concentration of arsenic exceeded the residential SSL. Three inorganic COPCs (aluminum, lead, and manganese) had concentrations exceeding 10% of the residential SSLs. Organic and radionucide COPC concentrations did not exceed the residential SSLs or SALs and did not exceed 10% of the residential SSLs or SALs.

Aluminum, arsenic, lead, and manganese were evaluated further by calculating the 95% UCLs. The results of the UCL calculations are presented in Table 8.3.2-2. The 95% UCLs were used to determine a HI for noncarcinogenic COPCs and a cancer risk for carcinogenic COPCs, which are presented in Table 8.3.2-3. The HI is 0.4, which is less than the cleanup goal of 1.0. The total excess cancer risk is approximately 1.0×10^{-5}, which is equivalent to the cleanup goal of 10^{-5}. The 95% UCL for arsenic at this site (4.3 mg/kg) is similar to the BV in soil and tuff (8.17 mg/kg and 3.14 mg/kg), less than the maximum

background concentrations (9.5 mg/kg and 5 mg/kg). There is no potential unacceptable risk to human health under a residential scenario at AOC 73-003.

Because no radionuclide COPCs had concentrations exceeding 10% of the residential SALs, the cleanup goal for radionuclides (15 mrem/yr) is met for AOC 73-003.

8.3.3 SWMU 73-004(a)

The results of the comparisons of COPC concentrations to the residential SSLs and SALs are presented in Table 8.3.3-1. No COPC concentrations exceeded the residential SSLs or SALs. However, three inorganic COPCs (antimony, lead, and thallium) had concentrations or detection limits exceeding 10% of the residential SSLs. No organic COPCs had concentrations exceeding 10% of the residential SSLs and no radionuclide COPCs had concentrations exceeding 10% of the residential SALs. The maximum TCDD concentration (2.22×10^{-6} mg/kg) is less than 10% of the residential SSL (3.9×10^{-5} mg/kg) and results in a total excess cancer risk of 6×10^{-7}, which is less than the cleanup goal of 10^{-5}.

The three inorganic COPCs exceeding 10% of the residential SSLs are noncarcinogens. These COPCs were evaluated further by calculating the 95% UCLs. The results of the UCL calculations are presented in Table 8.3.3-2. The 95% UCLs were used to determine a HI, which is presented in Table 8.3.3-3. The HI is 0.6, which is less than the cleanup goal of 1.0.

Because no radionuclide COPCs had concentrations exceeding 10% of the residential SALs, the cleanup goal for radionuclides (15 mrem/yr) is met for SWMU 73-004(a).

8.3.4 SWMU 73-004(b)

The results of the comparisons of COPC concentrations to the residential SSLs are presented in Table 8.3.4-1. The maximum detected concentrations of arsenic, Aroclor-1254, Aroclor-1260, and DDT exceeded the residential SSLs. Seven other inorganic COPCs (aluminum, antimony, cobalt, lead, silver, thallium, and vanadium) had concentrations or detection limits exceeding 10% of the residential SSLs. Three other organic COPCs (benzo[a]pyrene, benzo[b]fluoranthene, and DDD) had concentrations exceeding 10% of the residential SSLs. No radionuclide COPCs had concentrations exceeding 10% of the residential SALs.

All COPCs exceeding the residential SSLs or exceeding 10% of the residential SSLs were evaluated further by calculating 95% UCLs. The results of the UCL calculations are presented in Table 8.3.4-2.

The 95% UCLs were used to determine a HI for noncarcinogenic COPCs and a cancer risk for carcinogenic COPCs (Table 8.3.4-3). The HI is 35, which exceeds the cleanup goal of 1.0. The total excess cancer risk is 4×10^{-4}, which exceeds the cleanup goal of 10^{-5}. Much of the elevated HI and cancer risk is the result of Aroclor-1254 and Aroclor-1260. The 95% UCLs for Aroclor-1254 and Aroclor-1260 (19.2 mg/kg each) are much higher than the maximum detected concentrations (4.54 and 1.96 mg/kg, respectively). The 95% UCLs are influenced by the results of one historical sample (sample 0173-96-0243 at location 73-02211), which was collected at a depth of 7.2 ft bgs, and had elevated detection limits for Aroclor-1254 and Aroclor-1260 (370 mg/kg based on a dilution factor of 10,000). Both Aroclor-1254 and Aroclor-1260 are undetected in this sample. Aroclors were not detected above a detection limit of 0.037 mg/kg in the deeper sample collected at 11.5 to 12.5 ft bgs at location 73-02211. Aroclors were also not detected in any of the 17 samples from the eight sampling locations (3 to 18 ft bgs) surrounding location 73-02211. If the 95% UCLs are recalculated using a detection limit of 0.037 mg/kg for this sample (the reported detection limit divided by the dilution factor), the resultant 95% UCLs are 0.66 mg/kg for Aroclor-1254 and 0.46 mg/kg for Aroclor-1260.

The total excess cancer risk is also overestimated because of a single high DDT concentration (170 mg/kg) at a depth of 7.2-7.4 ft bgs at location 73-02211. The highest detected DDT concentration in samples from the five closest boreholes (all within 20 ft of location 73-02211) was 0.021 mg/kg. These results, combined with the nondetect DDT reported in the deeper sample from location 73-02211 (11.5 to 12.5 ft bgs), indicates very limited extent of DDT above the SSL. The 95% UCL for DDT was recalculated without the high DDT concentration and was 0.06 mg/kg.

Using the revised 95% UCLs for Aroclor-1254, Aroclor-1260, and DDT for the comparison to residential SSLs results in an HI of approximately 2 and a total excess cancer risk of approximately 2×10^{-5} (Table 8.3.4-4).

Further evaluation of exposure point concentrations indicates that the 95% UCLs for aluminum and thallium (13,030 and 0.30 mg/kg, respectively) are less than the BVs for soil (29,200 and 0.73 mg/kg, respectively) and Qbt 3 (7340 and 1.1 mg/kg, respectively) and the 95% UCL for vanadium (17.5 mg/kg) is less than BV for soil (39.6 mg/kg) and less than the maximum background concentration for Qbt 3 (21 mg/kg). Similarly, the 95% UCL for arsenic is 3.77 mg/kg, which is less than the BV for soil (8.17 mg/kg) and less than the maximum background concentration for Qbt 3 (5 mg/kg). Therefore, the exposure associated with these inorganic chemicals is equivalent to background at SWMU 73-004(b) and is not likely to pose a potential risk. Eliminating the inorganic COPCs results in an HI of approximately 1.0, which is equivalent to the cleanup goal of 1, and an excess cancer risk of 8×10^{-6}, which is less than the cleanup goal of 10^{-5}. Therefore, there is no potential unacceptable risk to human health under a residential scenario at SWMU 73-004(b).

Because no radionuclide COPCs had concentrations exceeding 10% of the residential SALs, the cleanup goal for radionuclides (15 mrem/yr) is met for SWMU 73-004(b).

8.3.5 SWMU 73-006

The results of the comparisons of COPC concentrations to the residential SSLs and SALs are presented in Table 8.3.5-1. No maximum detected concentrations exceeded the residential SSLs or SALs. Six inorganic COPCs (aluminum, antimony, lead, mercury, selenium, and vanadium), and one organic COPC (benzo[a]pyrene) had concentrations or detection limits exceeding 10% of the residential SSLs. In addition, the TCDD TEQ based on maximum detected congener concentrations (3.8×10^{-5} mg/kg) exceeds 10% of the residential SSL for TCDD (3.9×10^{-5} mg/kg). No radionuclide COPCs had concentrations exceeding 10% of the residential SALs.

All COPCs exceeding 10% of the residential SSLs were evaluated further by calculating 95% UCLs. The results of the UCL calculations are presented in Table 8.3.5-2. The 95% UCLs for each of the dioxin and furan congeners were used to calculate a 95% UCL TEQ TCDD concentration, which is presented in Table 8.3.5-3.

The 95% UCLs were used to determine a HI for noncarcinogenic COPCs and cancer risk for carcinogenic COPCs (Table 8.3.5-4). The HI is 0.8, which is less than the cleanup goal of 1.0. The total excess cancer risk is 1.3×10^{-5}, which is equivalent to the cleanup goal of 10^{-5}. As shown in Table 8.3.5-3, most of the cancer risk is associated with TCDD. This risk is overestimated because the 95% UCL for TCDD (3.8×10^{-5} mg/kg) exceeds the maximum detected concentration for TCDD (1.31×10^{-6} mg/kg) because elevated detection limits (5.0×10^{-5} to 1.1×10^{-4} mg/kg) in three historical samples. If the TCDD TEQ is calculated using the maximum detected TCDD concentration instead of the 95% UCL, the total excess cancer risk equals 1×10^{-5}, which is equivalent to the cleanup goal of 10^{-5}. Therefore, there is no potential unacceptable risk to human health under a residential scenario at SWMU 73-006.

Because no radionuclide COPCs had concentrations exceeding 10% of the residential SALs, the cleanup goal for radionuclides (15 mrem/yr) is met for SWMU 73-006.

8.4 Summary of Ecological Risk

Ecological risk screening assessments were conducted for AOC 73-003, SWMU 73-004(b), and for the combined area of SWMUs 73-002, 73-004(a), and 73-006. SWMUs 73-002, 73-004(a), and 73-006 were evaluated together because they are in the same general area, and the outfalls from SWMUs 73-004(a) and 73-006 terminated within the ash and debris disposal area (SWMU 73-002). AOC 73-003 is entirely under the asphalt parking lot of the Los Alamos County Airport and as such is not likely to result in exposure to ecological receptors under current conditions. Likewise, the septic tank and lines associated with SWMU 73-004(b) are under the asphalt parking lot but the discharge line daylights on the canyon slope. The only portion of the SWMU that results in exposure to ecological receptors under current conditions is the outfall and drainage on the canyon slope.

Based on the ecological risk screening assessments, several chemical of potential ecological concern (COPECs) (including some COPECs without ESLs) were identified at each site or area evaluated. Overall, the uncertainties associated with the evaluation of ecological risks to residual concentrations of COPECs in the soil and tuff overestimate the potential risk to ecological receptors. All of the COPECs were eliminated by analyzing a number of factors (e.g., background concentrations, potential effects to populations (individuals for threatened and endangered [T&E] species), the relative toxicity of related compounds, and the infrequency of detection) at each site or area. The results of the ecological risk screening assessments indicate no potential risk to ecological receptors, and further investigation and corrective action are not warranted based on ecological risk.

8.5 Additional Data Requirements

The review and evaluation of the data collected from SWMUs 73-002, 73-004(a), 73-004(b), and 73-006 and AOC 73-003 demonstrate that the investigation and remediation activities conducted at these sites have addressed the Consent Order requirements. The data demonstrate that inorganic chemical, organic chemical, and radiological contamination is characterized, the nature and extent of contamination is defined, and cleanup goals have been met. Therefore, no additional data is required for these sites.

9.0 RECOMMENDATIONS

The determination of site status is, in part, based on the results of the risk screening assessments. Depending upon the scenario used as the decision scenario for a site, the site condition is identified as either corrective action complete with or without controls. The residential scenario is the only scenario under which corrective action complete without controls is applicable, that is, no additional corrective actions or conditions are necessary. The other scenarios (industrial, construction worker, and recreational) result in corrective action complete with controls, that is, some type of land use and/or other institutional controls must be in place to ensure that the land use remains consistent with site cleanup levels. Therefore, if the investigation of a site is determined to be complete, a Certificate of Completion for a site is requested under one of these provisions.

9.1 SWMU 73-002

The Laboratory is requesting a Certificate of Completion (corrective action complete without controls) from NMED for SWMU 73-002 based on results of the investigation and remediation activities

implemented at the site. The site is located on a canyon-slope portion, is presently open space, and is accessible to the public. This current land use (recreational) is not expected to change for the foreseeable future. However, the risk screening assessment did not indicate a potential unacceptable risk or dose under a residential scenario (risks and dose were less than or equivalent to NMED's and DOE's target levels). The SWMU does not present a potential ecological risk based on the risk screening assessment. Because SWMU 73-002 poses no potential unacceptable risk or dose to human health under the residential scenario and the environment, it is appropriate to conclude that no site controls or future actions are necessary.

9.2 AOC 73-003

The Laboratory is requesting a Certificate of Completion (corrective action complete without controls) from NMED for AOC 73-003 based on results of the investigation activities implemented at the site. AOC 73-003 is entirely under the asphalt parking lot of the Los Alamos County airport; this current land use (industrial) is not expected to change for the foreseeable future. However, the risk screening assessment did not indicate a potential unacceptable risk or dose under a residential scenario (risks and dose were less than or equivalent to NMED's and DOE's target levels). The AOC does not present a potential ecological risk based on the risk screening assessment because it is entirely under an asphalt parking lot. Because AOC 73-003 poses no potential unacceptable risk or dose to human health under the residential scenario and the environment, it is appropriate to conclude that no site controls or future actions are necessary.

9.3 SWMU 73-004(a)

The Laboratory is requesting a Certificate of Completion (corrective action complete without controls) from NMED for SWMU 73-004(a) based on results of the investigation activities implemented at the site. The current and reasonably foreseeable future land use for SWMU 73-004(a) is industrial and recreational. However, the risk-screening assessment did not indicate a potential unacceptable risk or dose under a residential scenario (risks and dose were less than NMED's and DOE's target levels). Because SWMU 73-004(a) poses no potential unacceptable risk to human health under the residential scenario and the environment, it is appropriate to conclude that no site controls or future actions are necessary.

9.4 SWMU 73-004(b)

The Laboratory is requesting a Certificate of Completion for Corrective Action Complete without Controls from NMED for SWMU 73-004(b) based on the results of the investigation and remediation activities implemented at the site. The mesa-top portion of SWMU 73-004(b) is presently paved and is used as a parking lot for the Los Alamos County Airport. The canyon-slope portion of the site is presently open space and is accessible to the public. The current land uses (industrial and residential) are not expected to change for the foreseeable future. However, the risk-screening assessment did not indicate a potential unacceptable risk under a residential scenario (risks were less than or equivalent to NMED's target levels). Because SWMU 73-004(b) poses no unacceptable risk to human health for the residential scenario and the environment, it is appropriate to conclude that no site controls or future actions are necessary,

9.5 SWMU 73-006

The Laboratory is requesting a Certificate of Completion (corrective action complete without controls) from NMED for SWMU 73-006 based on results of the investigation activities implemented at the site. The current and reasonably foreseeable future land use for SWMU 73-006 is industrial and recreational. However, the risk screening assessment did not indicate a potential unacceptable risk or dose under a residential scenario (risks or dose were less than or equivalent to NMED's and DOE's target levels). Because SWMU 73-006 poses no potential unacceptable risk or dose to human health or the environment for the residential scenario and the environment, it is appropriate to conclude that no site controls or future actions are necessary.

10.0 REFERENCES AND MAP DATA SOURCES

10.1 References

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Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau; the U.S. Department of Energy–Los Alamos Site Office; 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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Structures; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 27 April 2007.

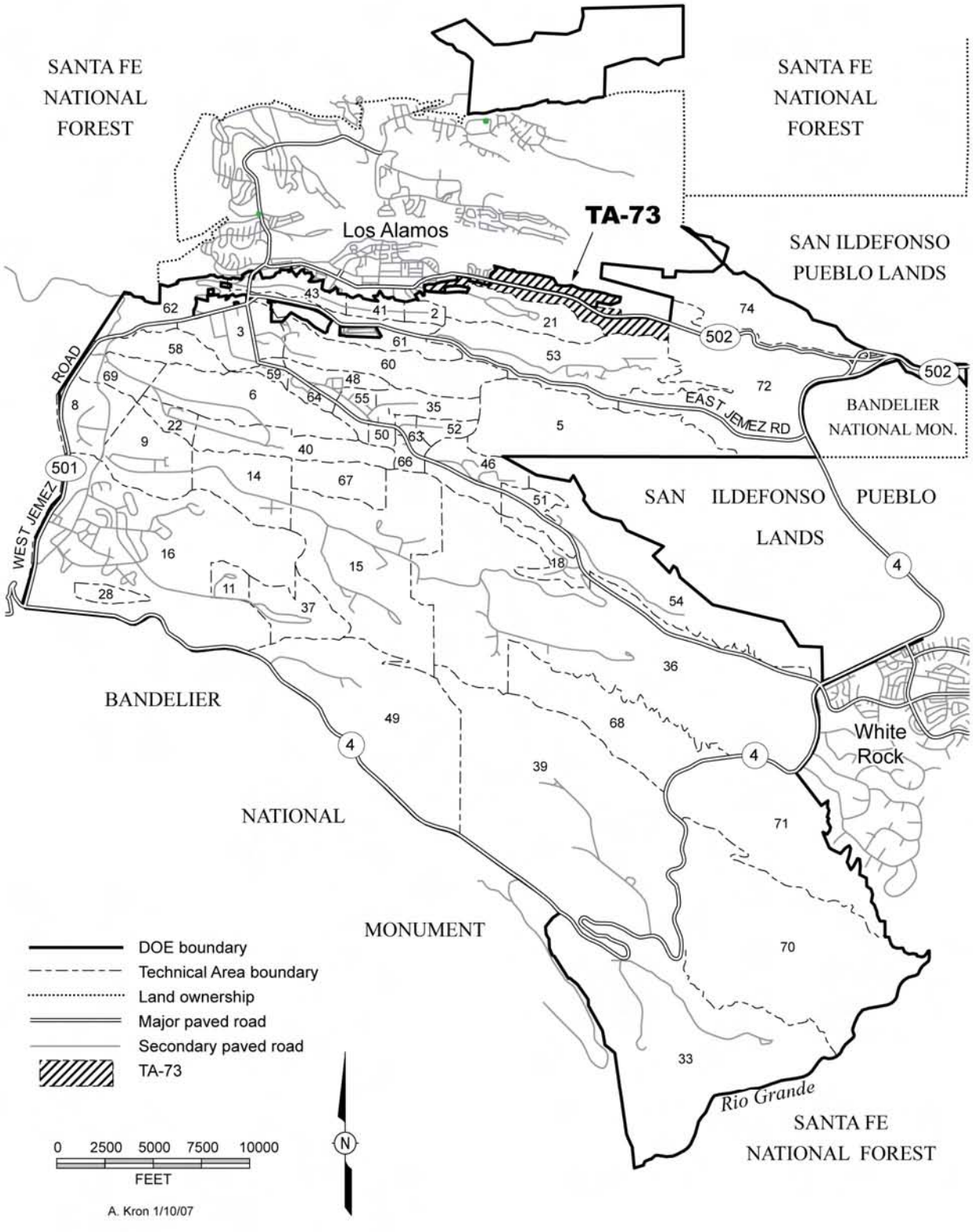


Figure 1.1-1 Location of TA-73 with respect to Laboratory technical areas and surrounding land holdings

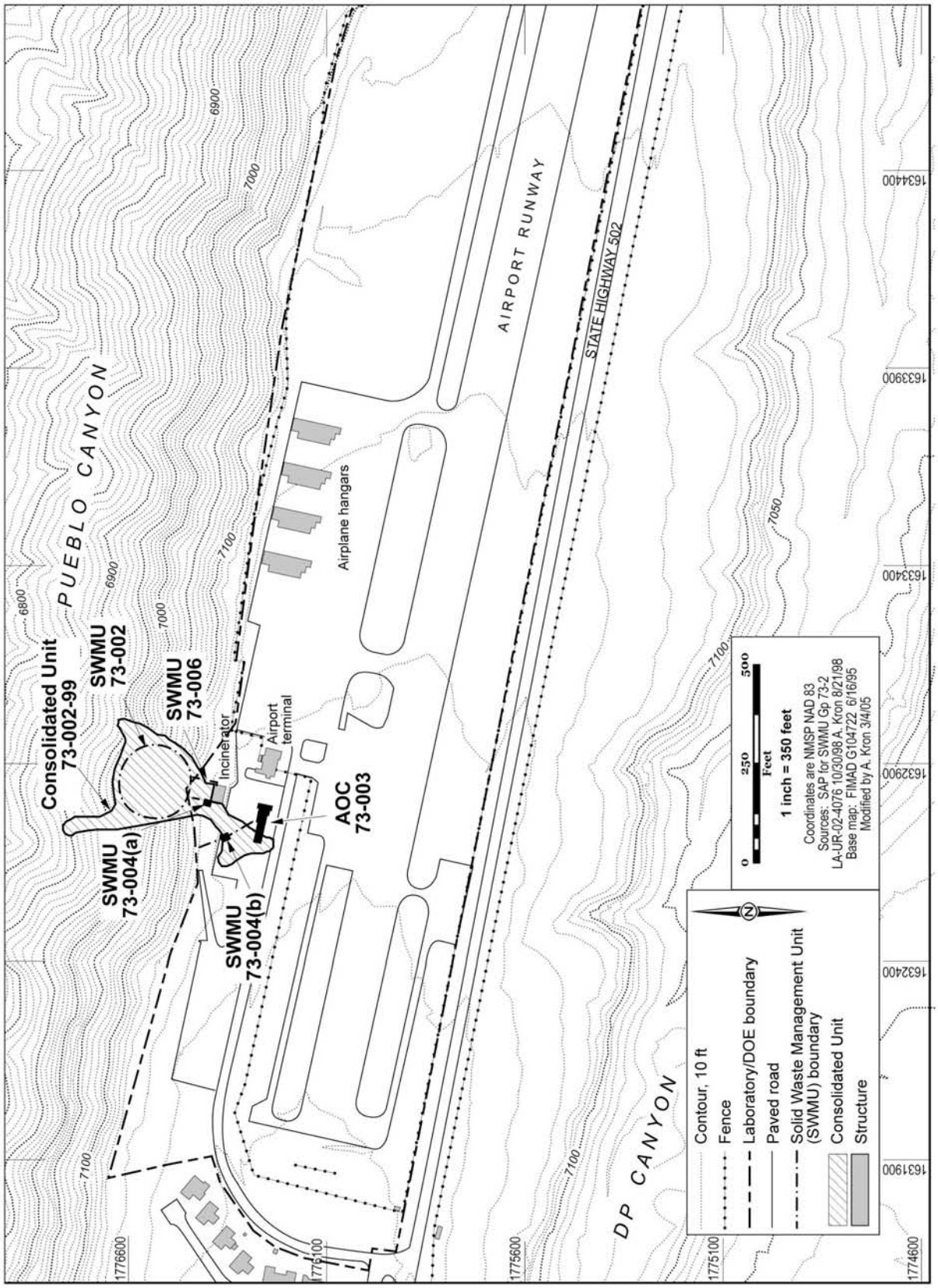


Figure 1.1-2 Location of Consolidated Unit 73-002-99, miscellaneous airport structures

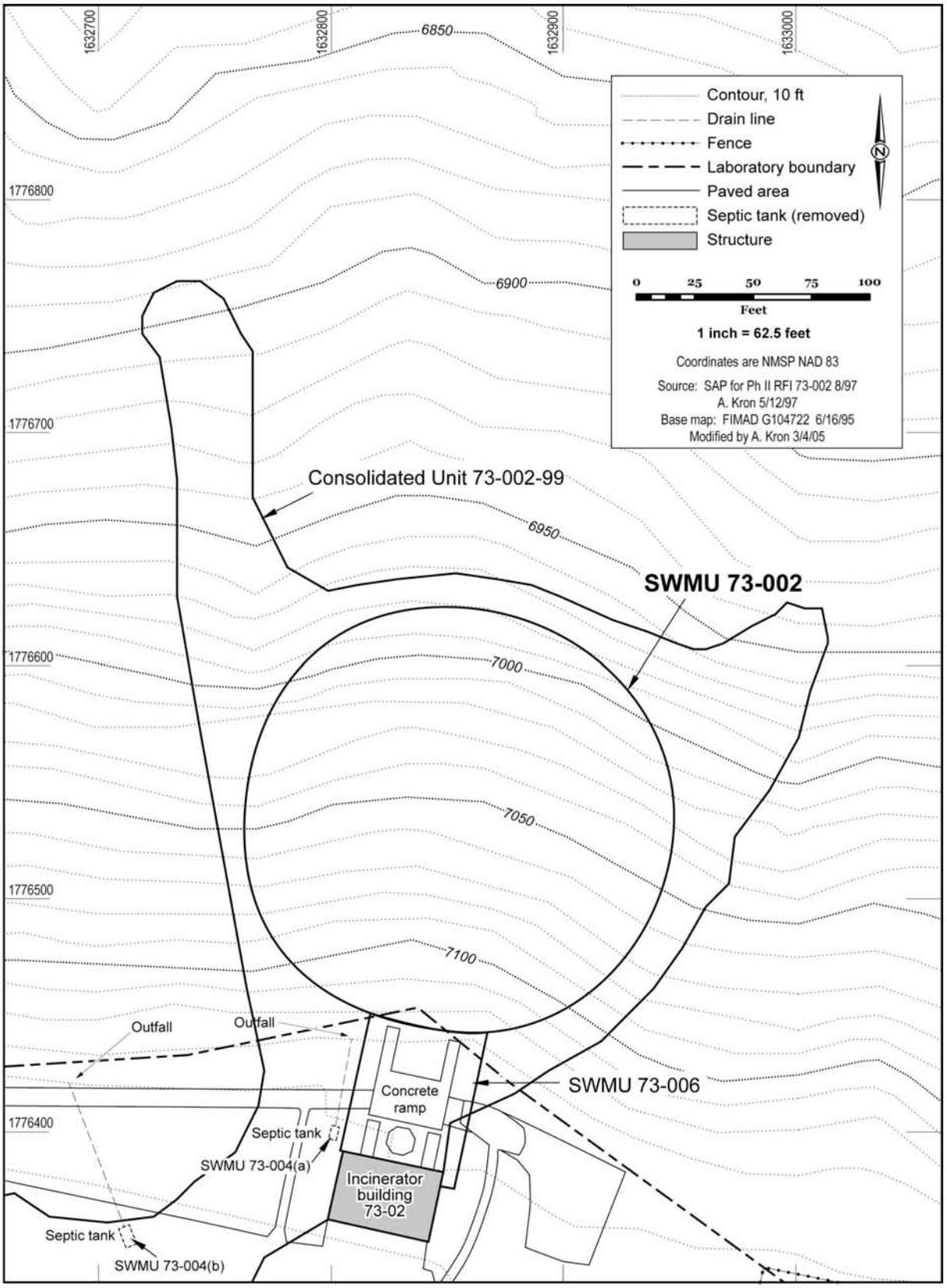


Figure 2.1-1 Location of SWMU 73-002, incinerator and surface disposal area

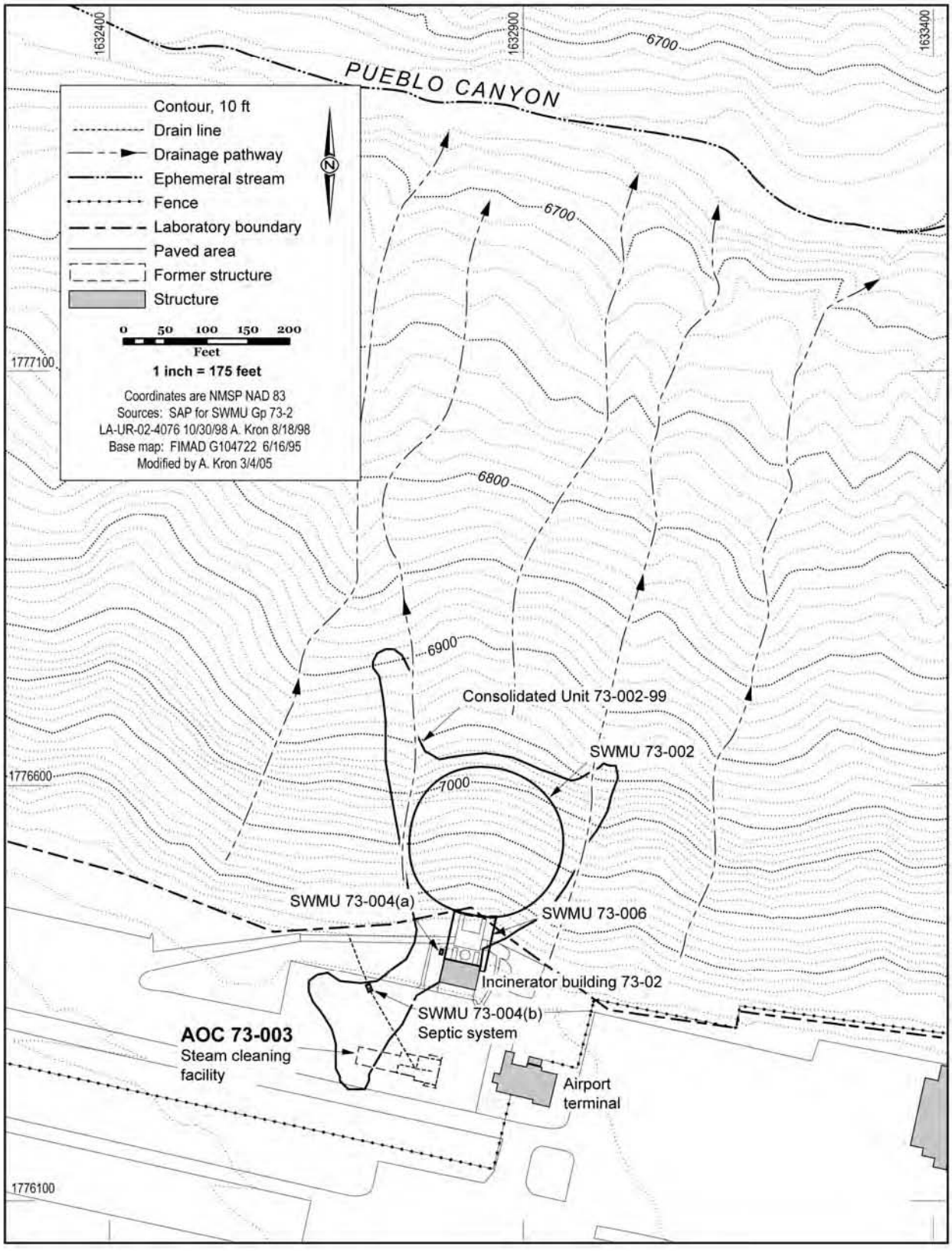


Figure 2.2-1 Location of AOC 73-003, former steam-cleaning plant

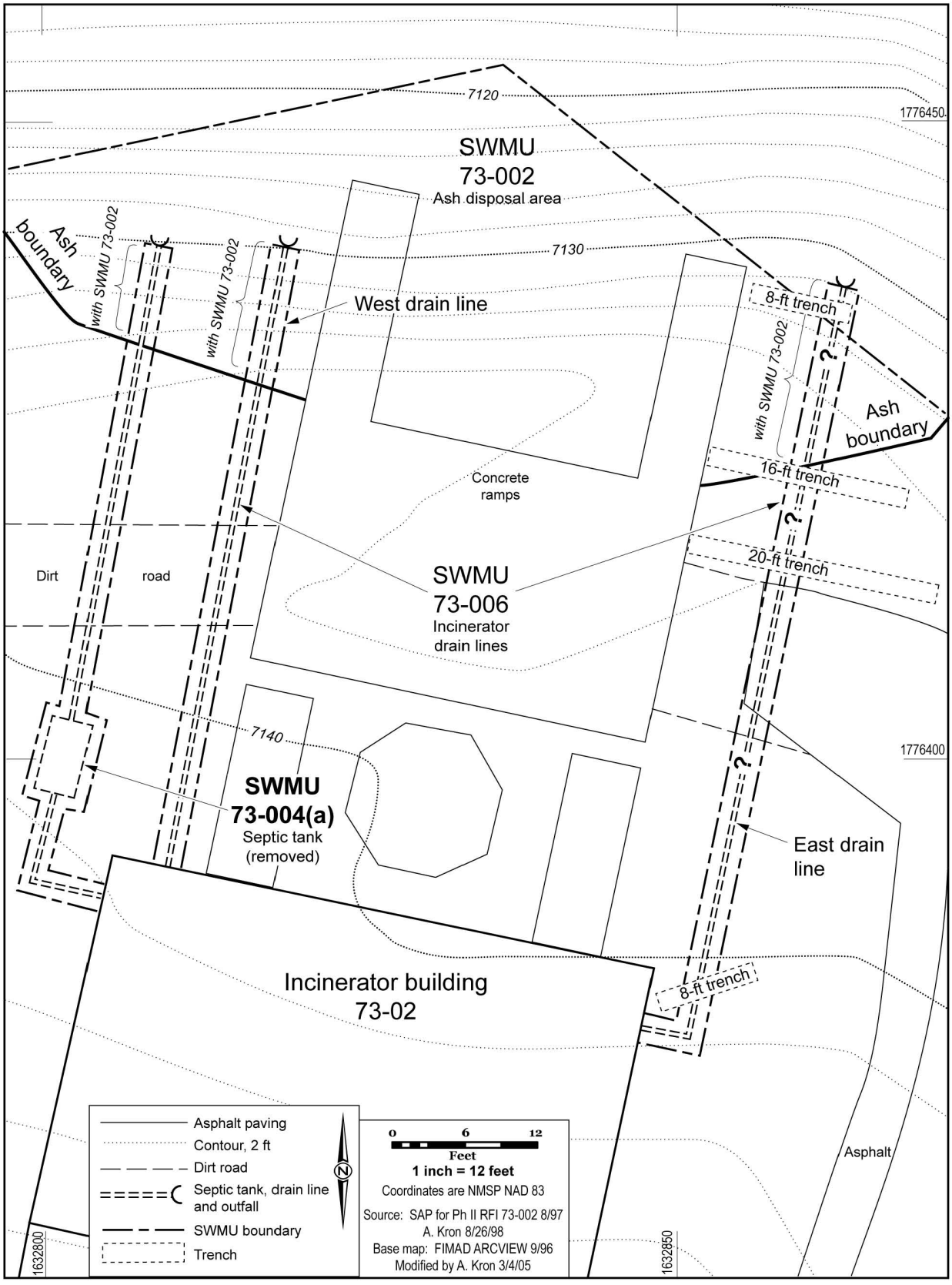


Figure 2.3-1 Location of SWMU 73-004(a), former septic system

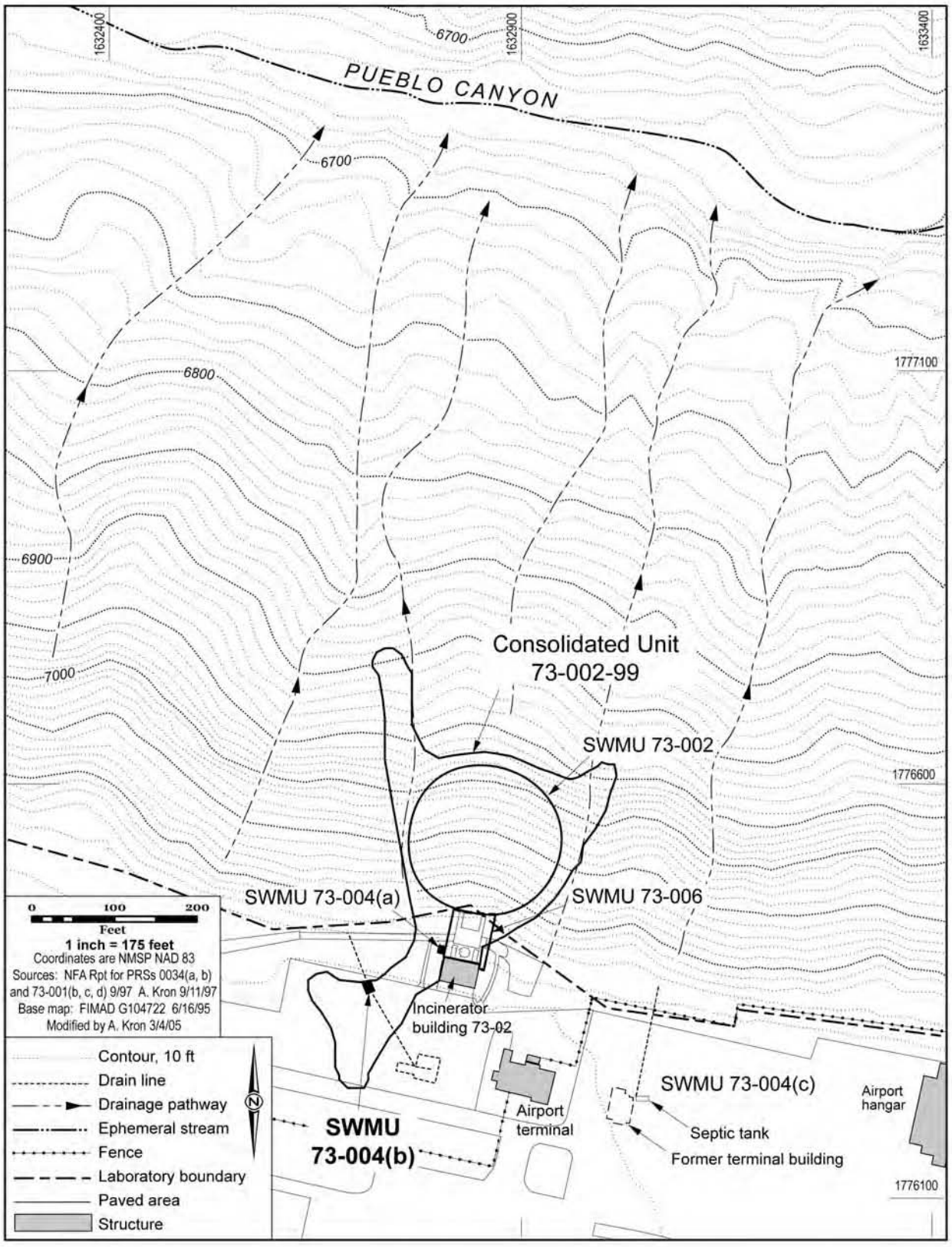


Figure 2.4-1 Location of SWMU 73-004(b), former septic system

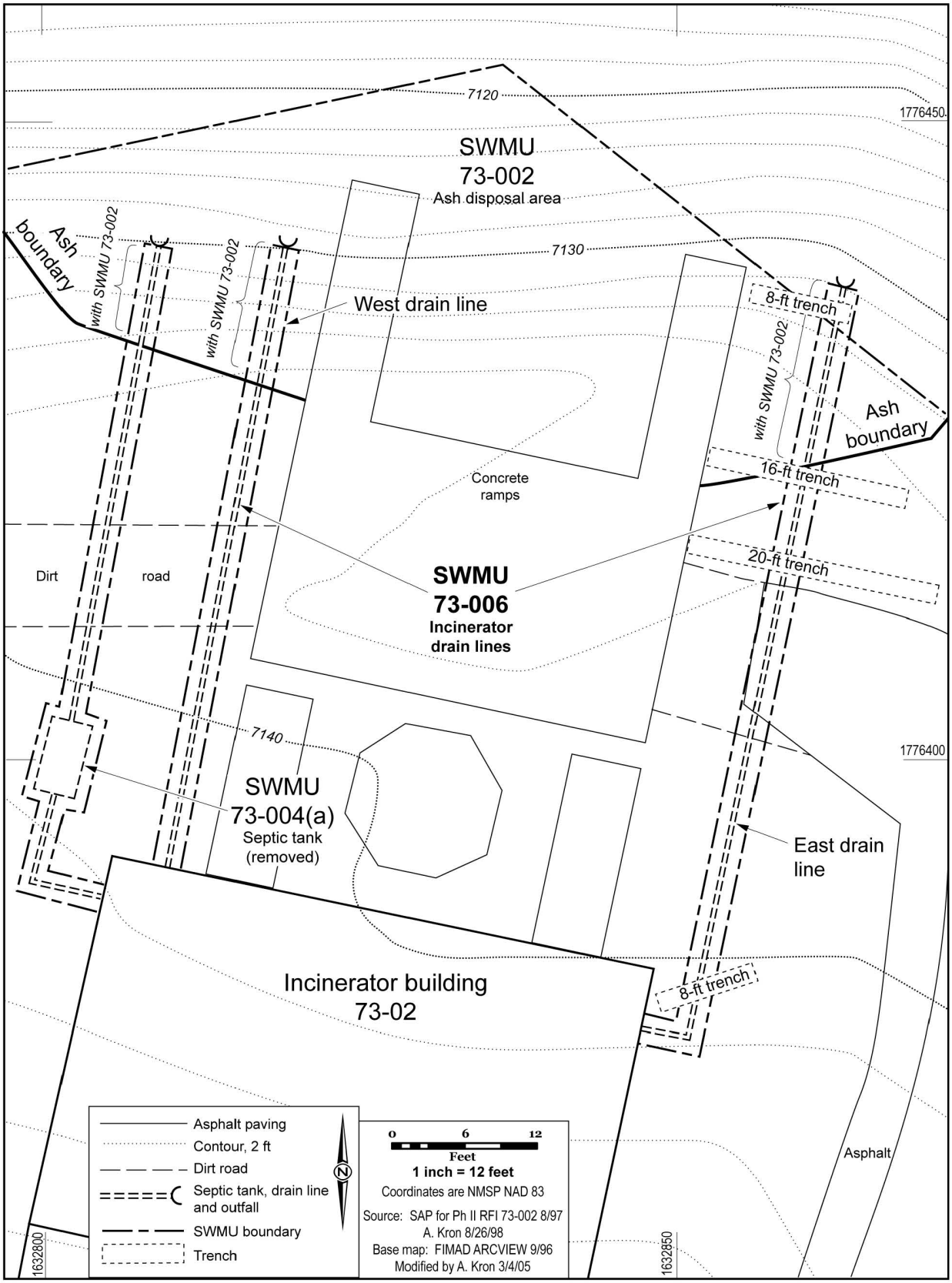


Figure 2.5-1 Location of SWMU 73-006, incinerator drainlines

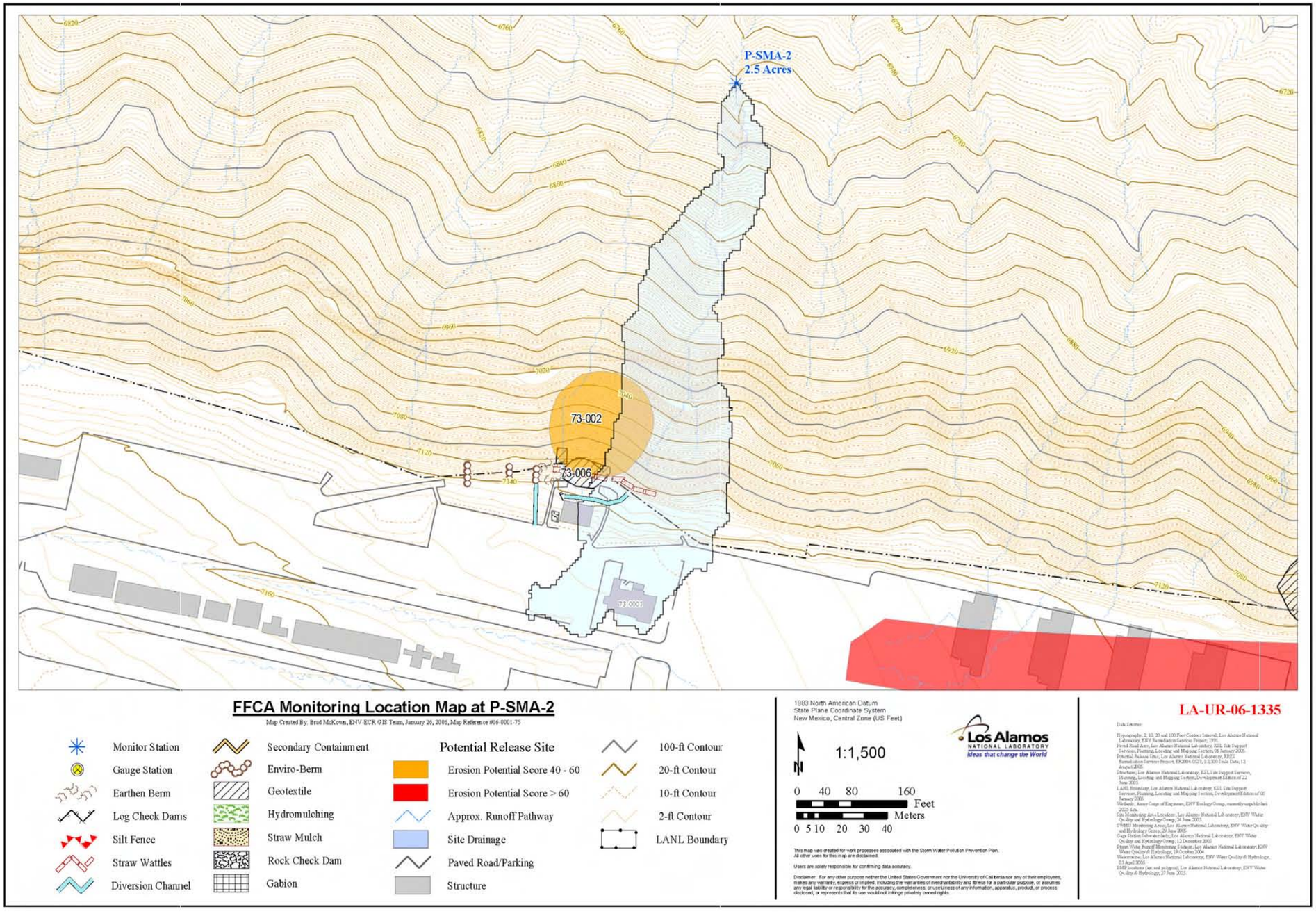


Figure 4.9-1 Location of FFCA monitoring station at P-SMA-2

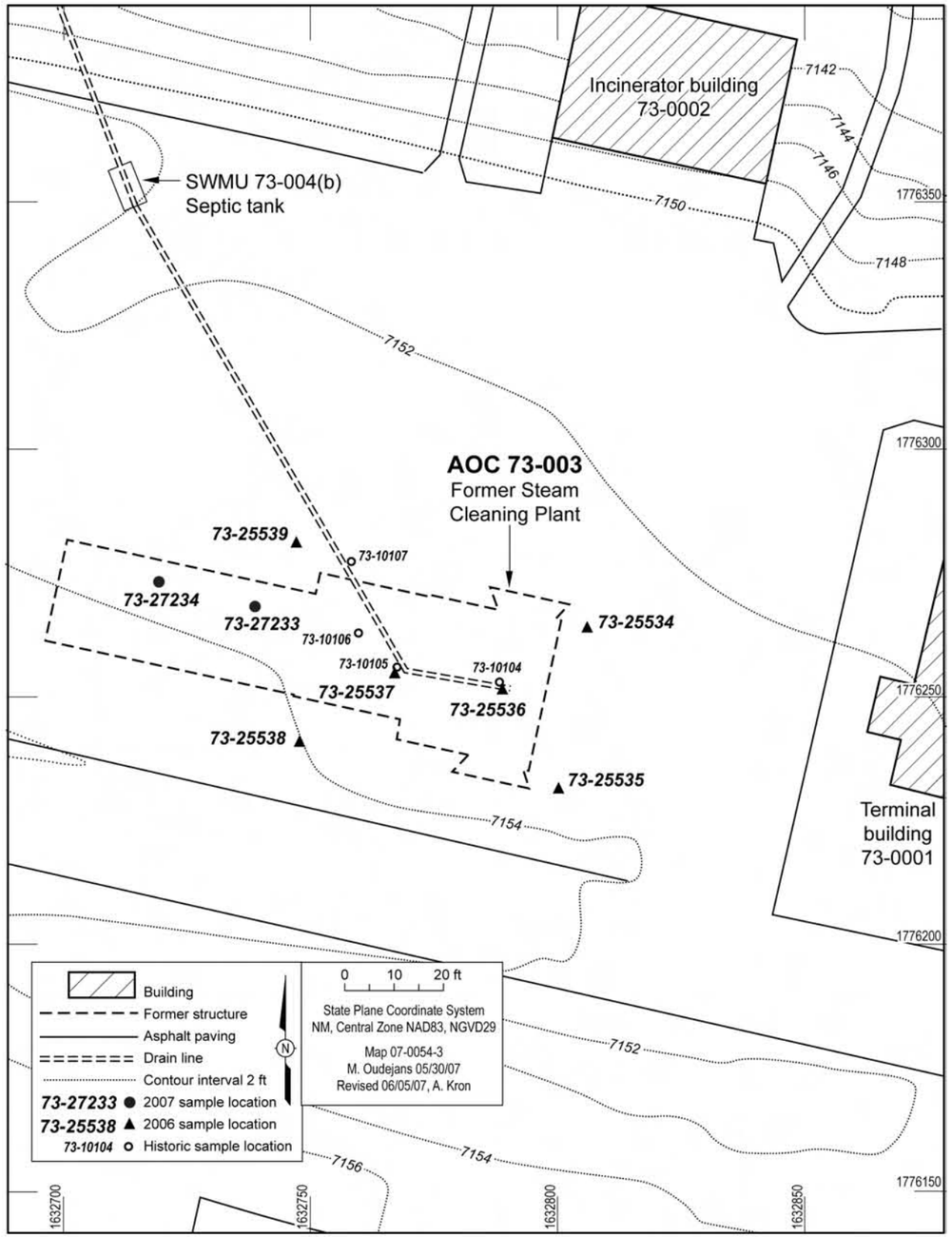


Figure 7.1.2-1 Sampling locations at AOC 73-003

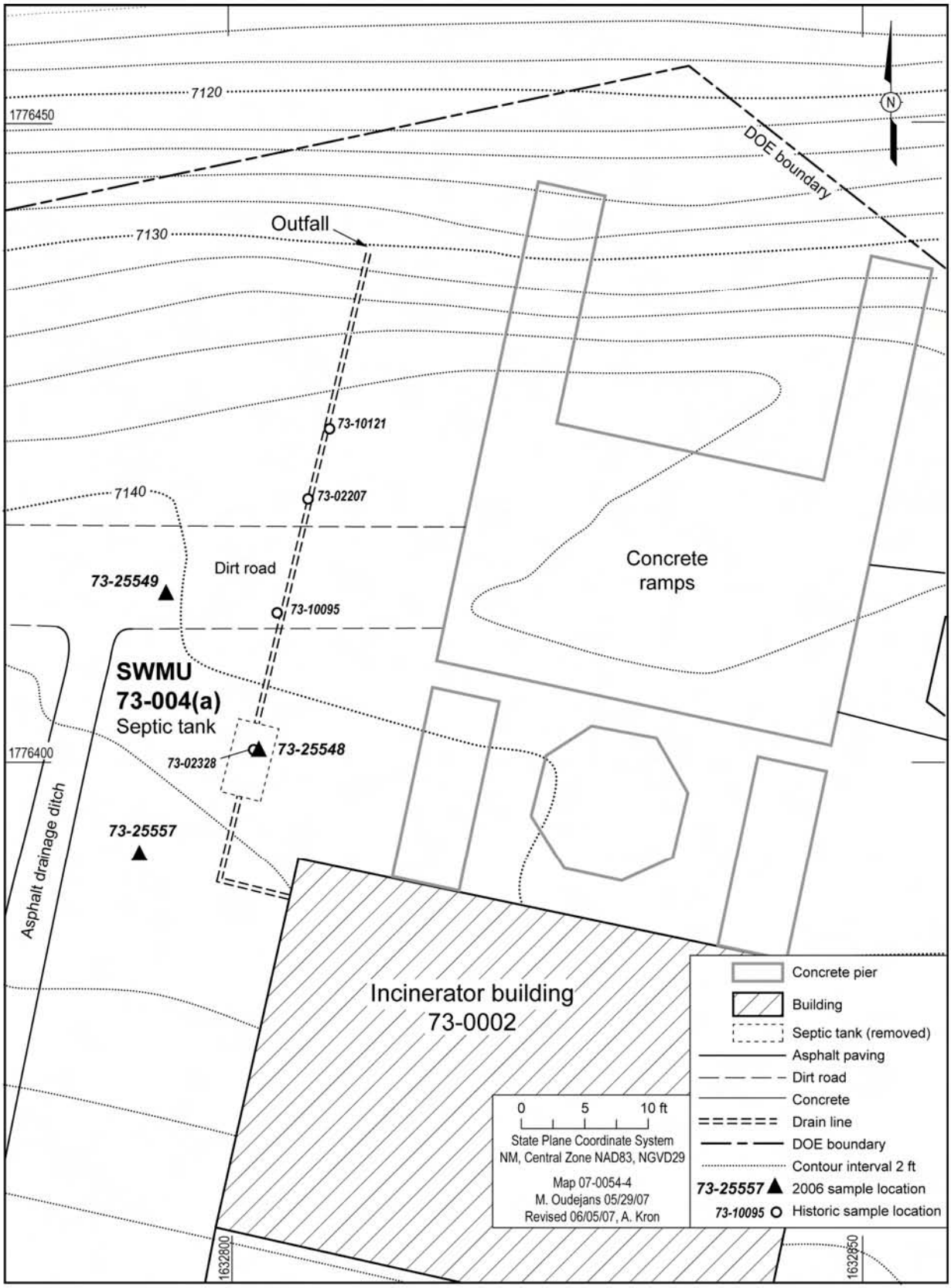


Figure 7.1.3-1 Sampling locations at SWMU 73-004(a)

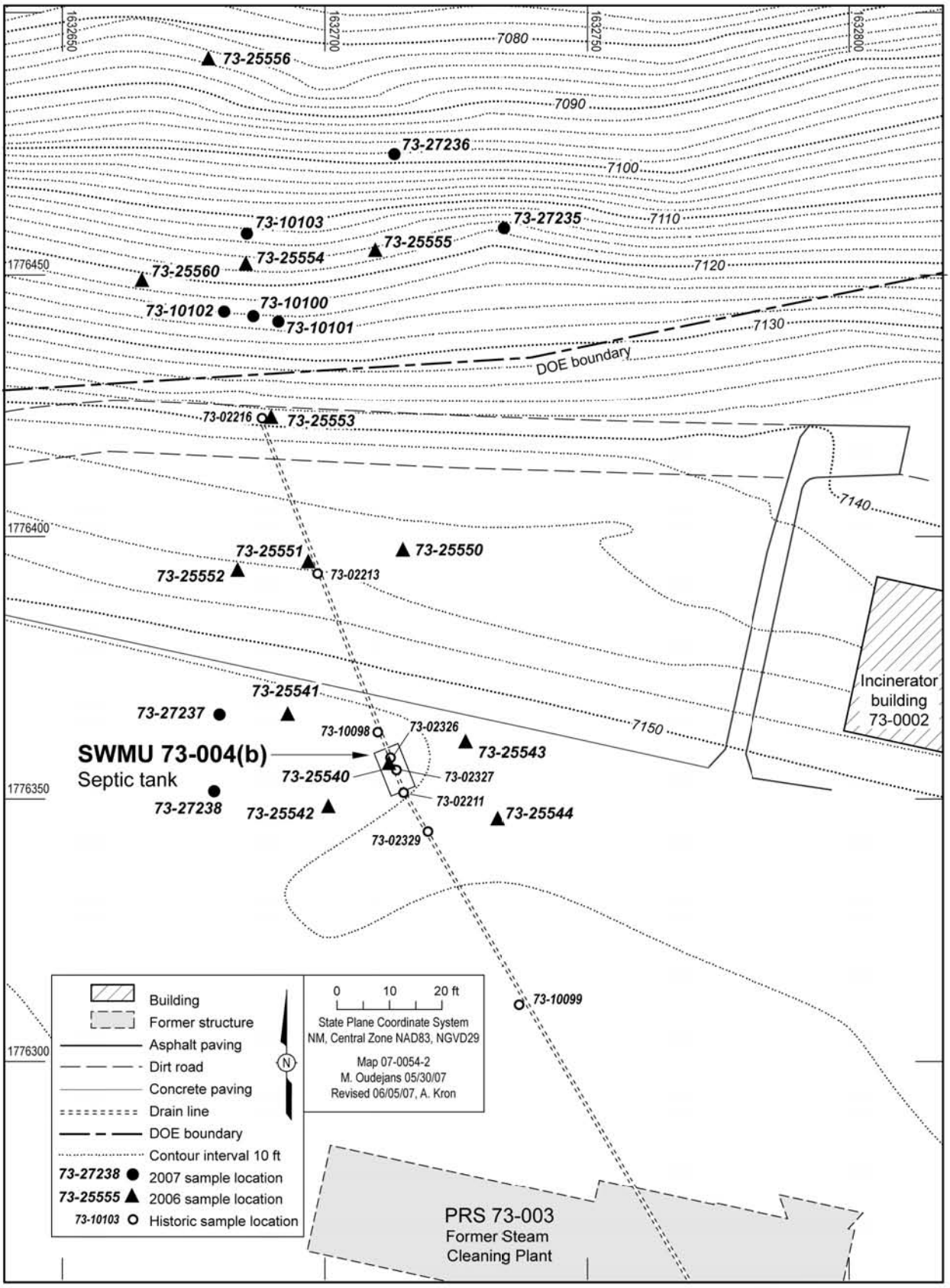


Figure 7.1.4-1 Sampling locations at SWMU 73-004(b)

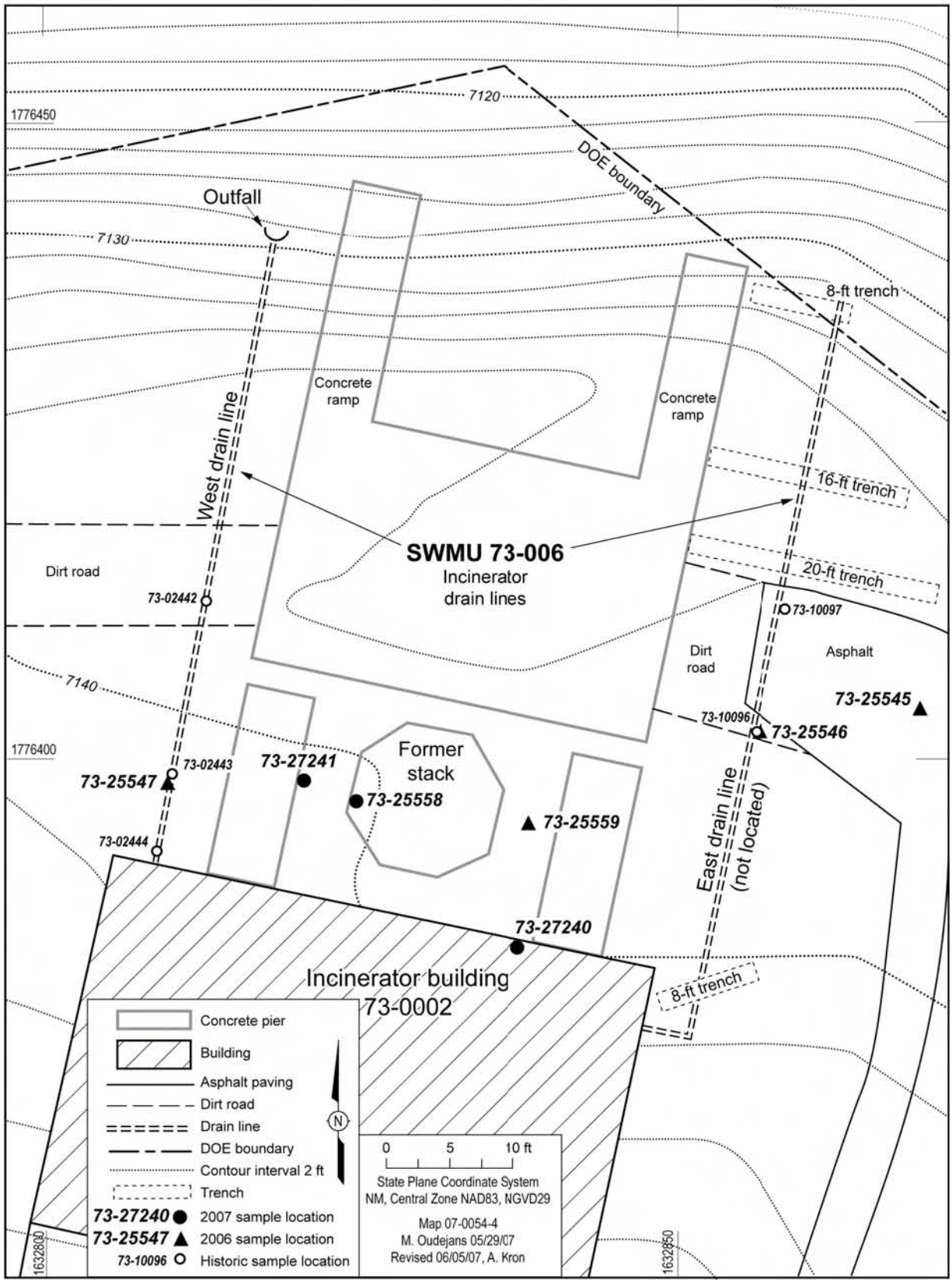


Figure 7.1.5-1 Sampling locations at SWMU 73-006

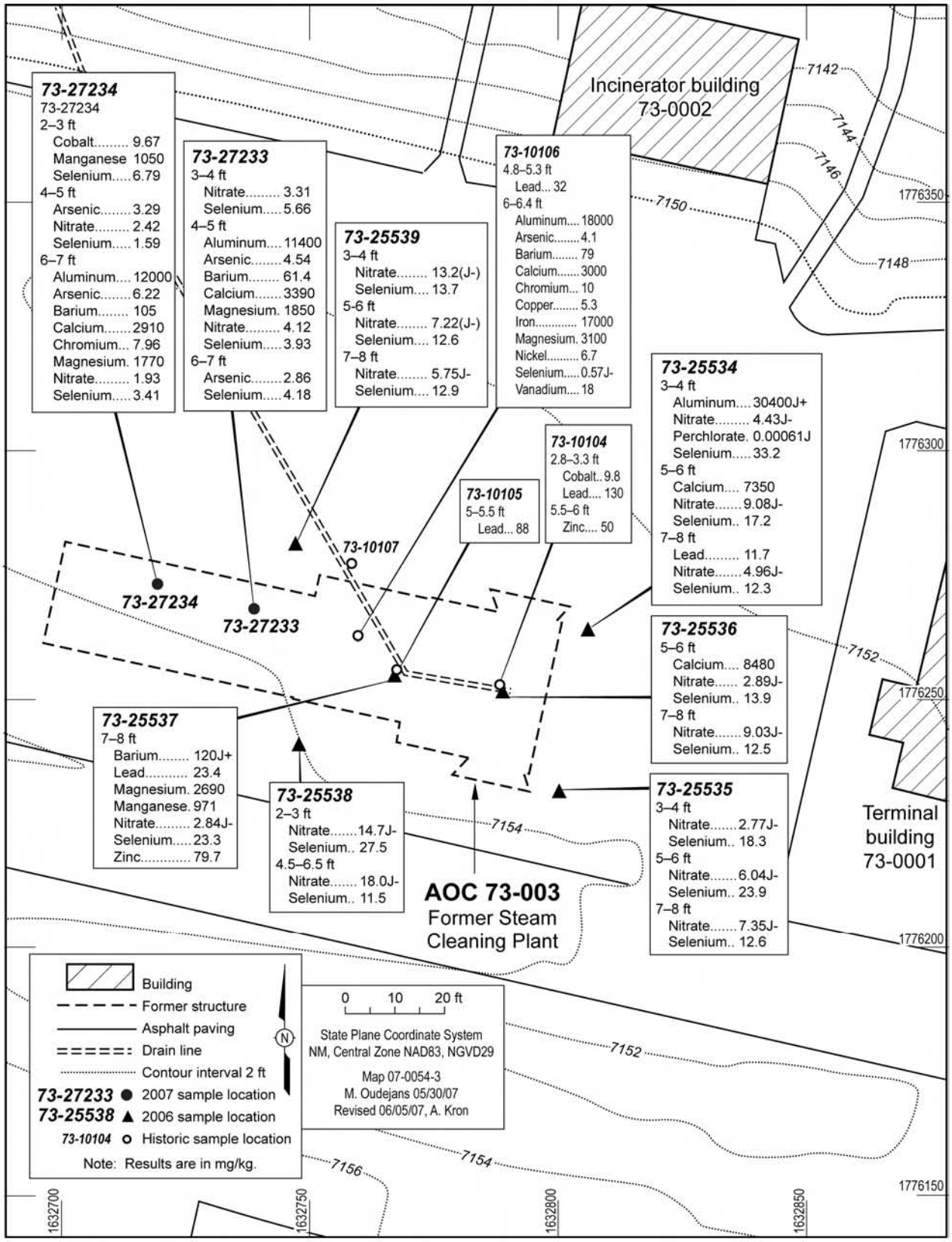


Figure 7.3.2-1 Inorganic chemicals detected above BVs at AOC 73-003

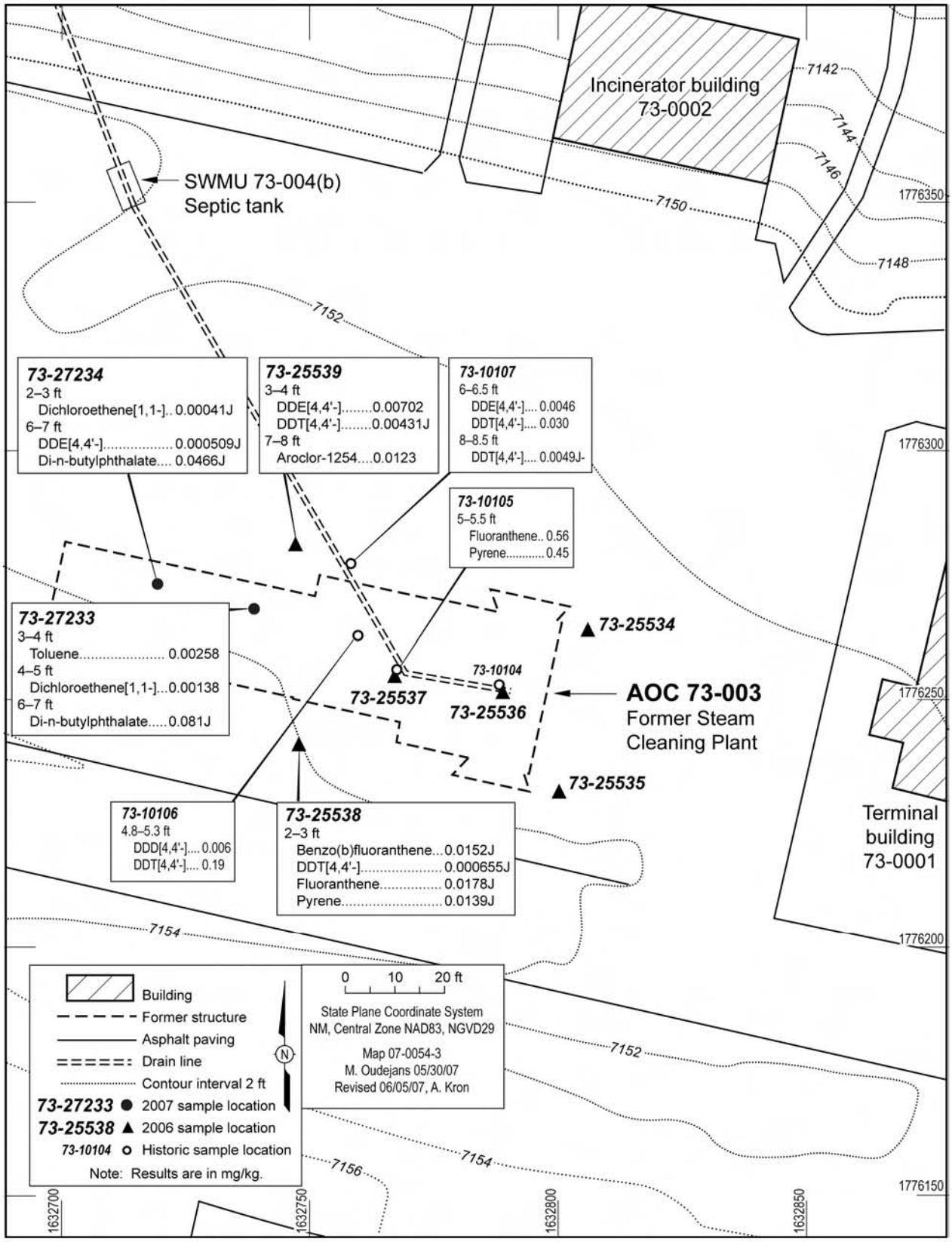


Figure 7.3.2-2 Organic chemicals detected at AOC 73-003

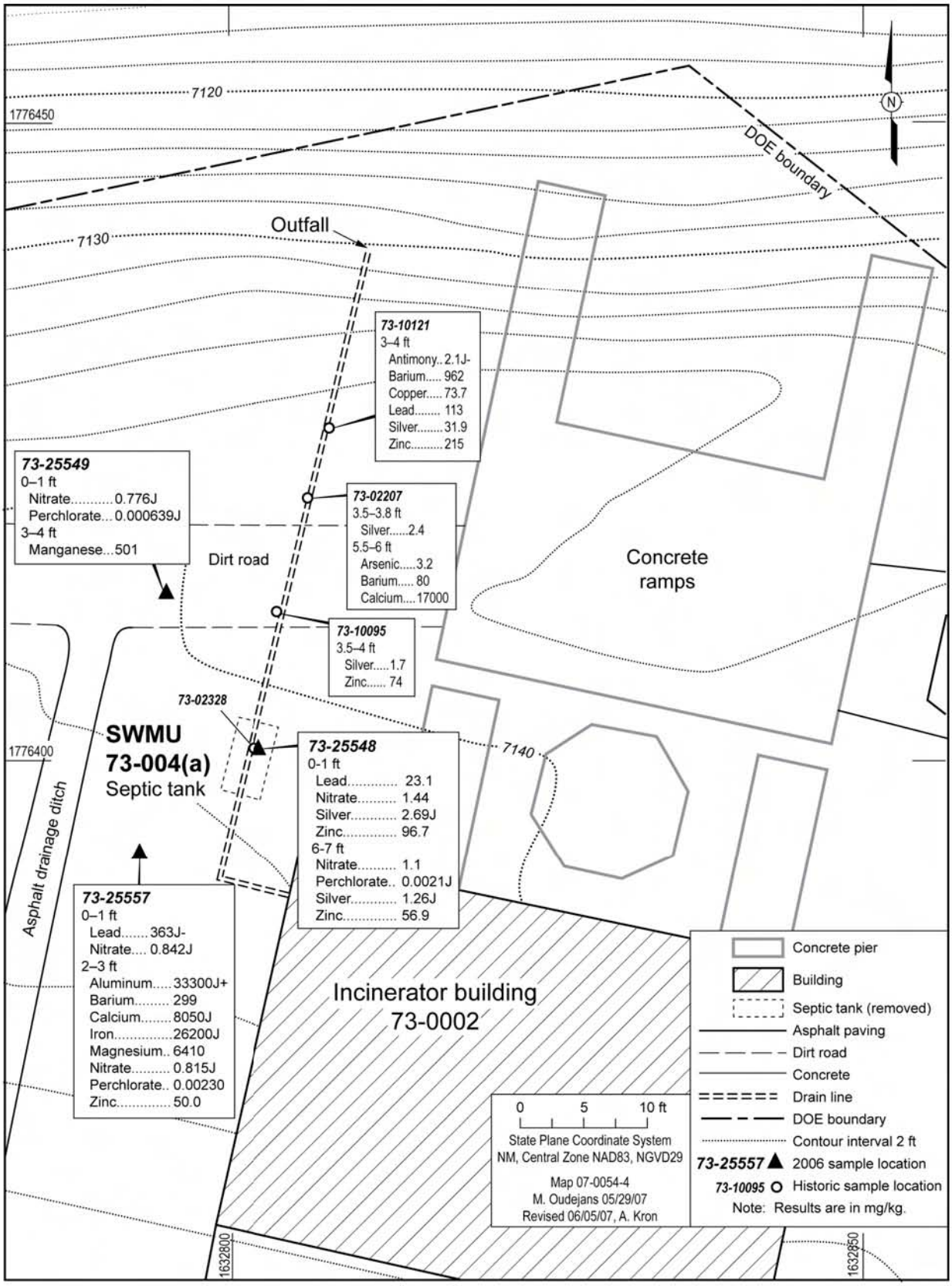


Figure 7.3.3-1 Inorganic chemicals detected above BVs at SWMU 73-004(a)

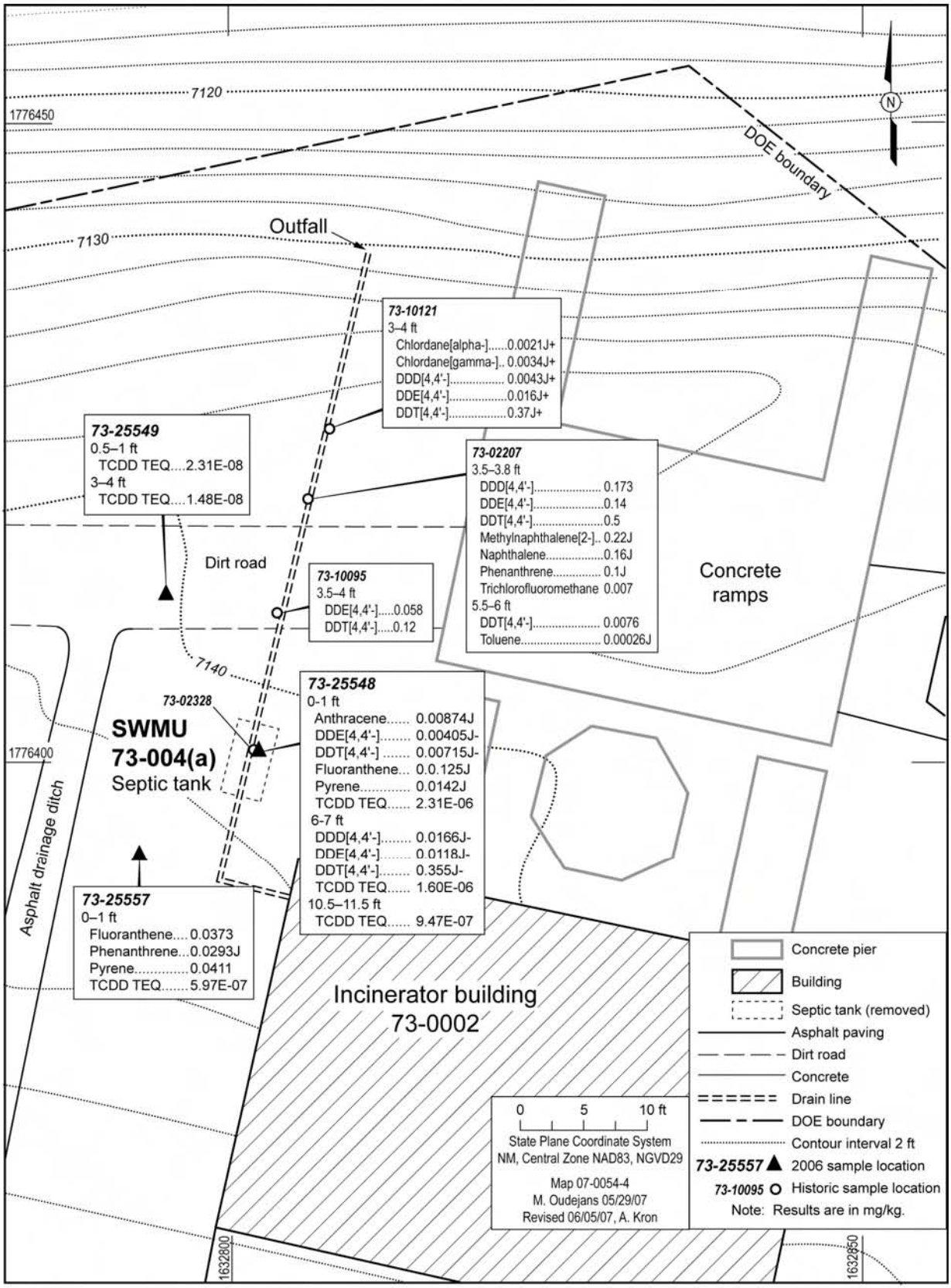


Figure 7.3.3-2 Organic chemicals detected at SWMU 73-004(a)

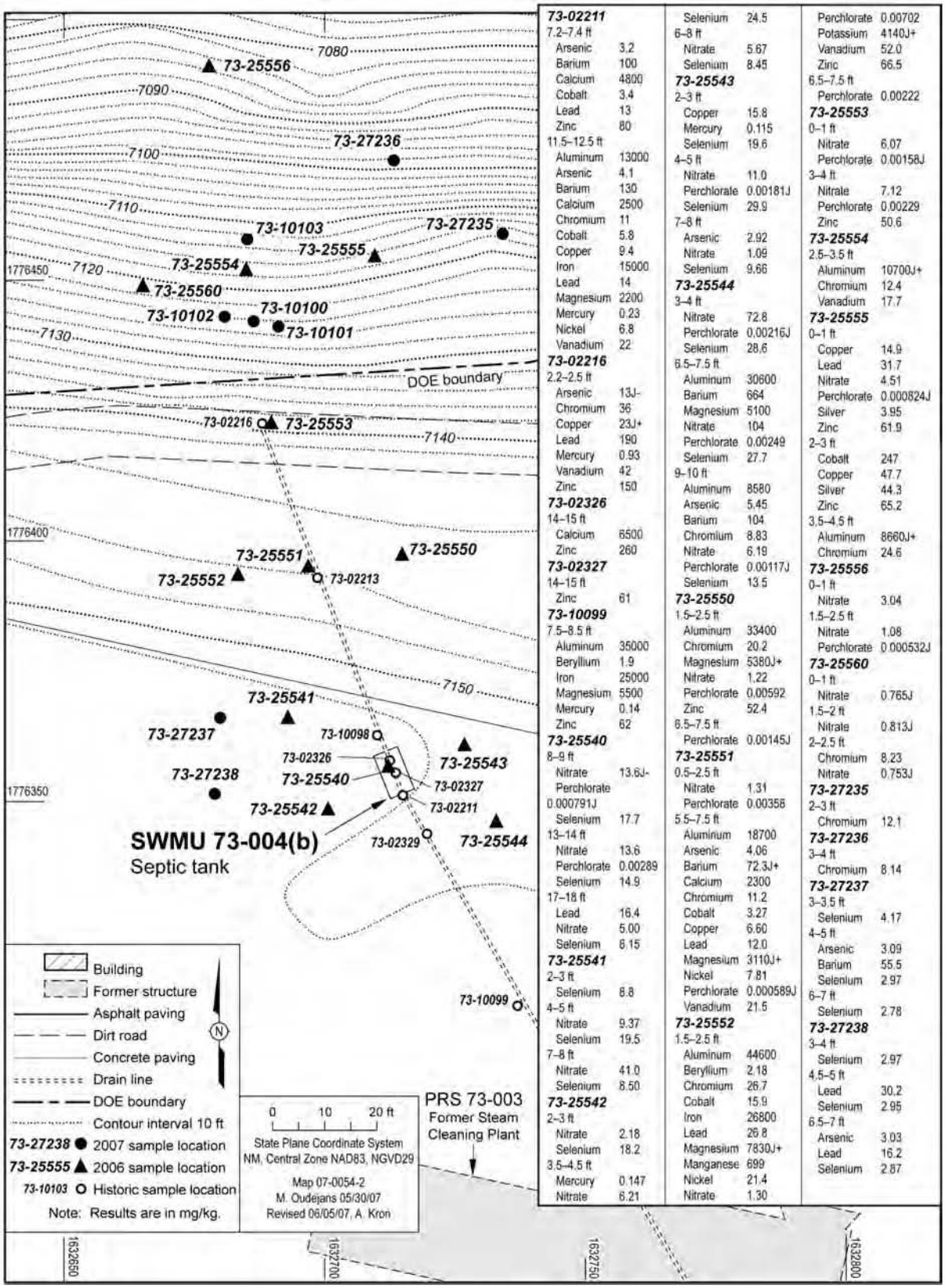


Figure 7.3.4-1 Inorganic chemicals detected above BVs at SWMU 73-004(b)

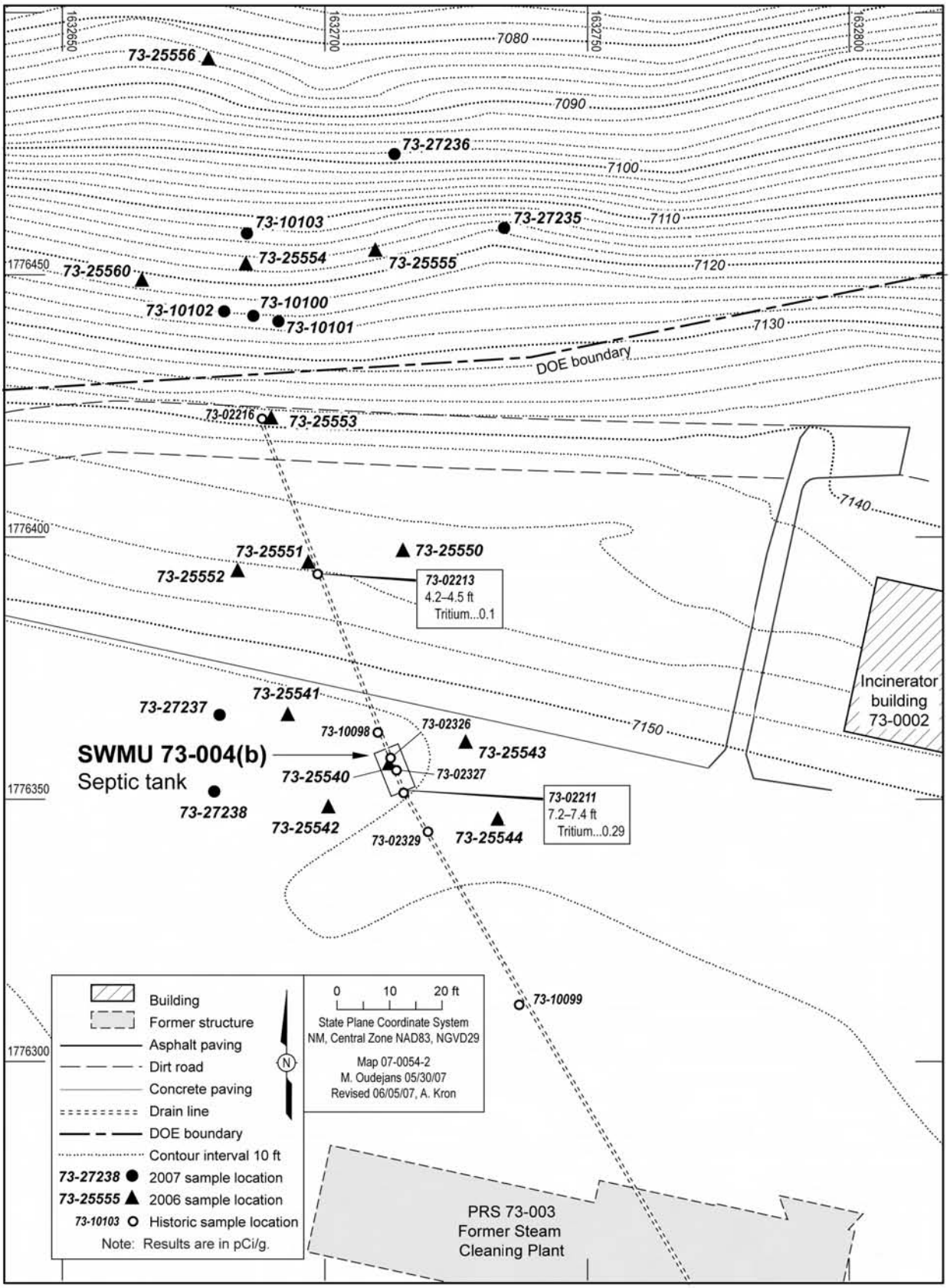


Figure 7.3.4-2 Radionuclides detected above BVs/FVs at SWMU 73-004(b)

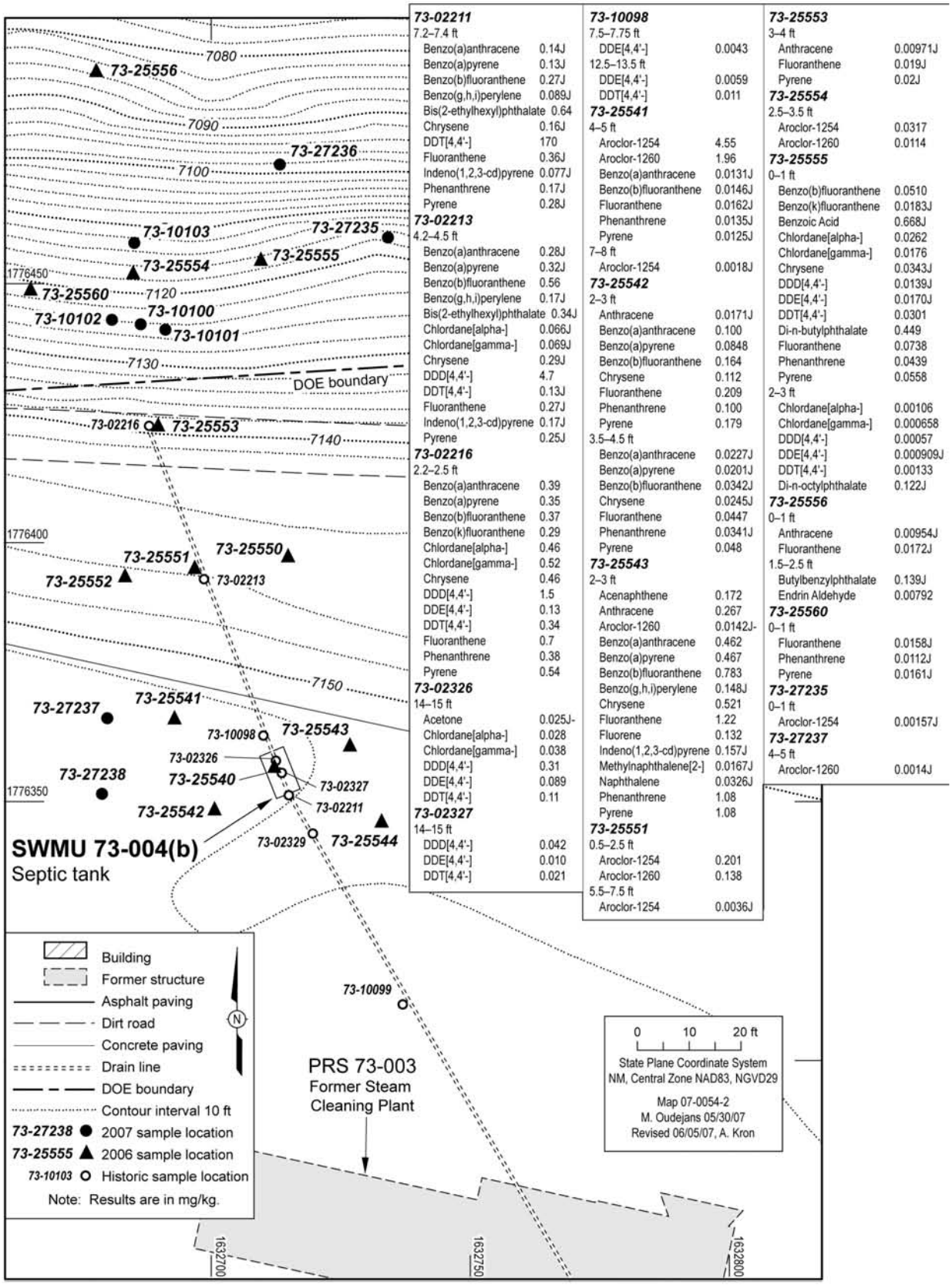


Figure 7.3.4-3 Organic chemicals detected at SWMU 73-004(b)

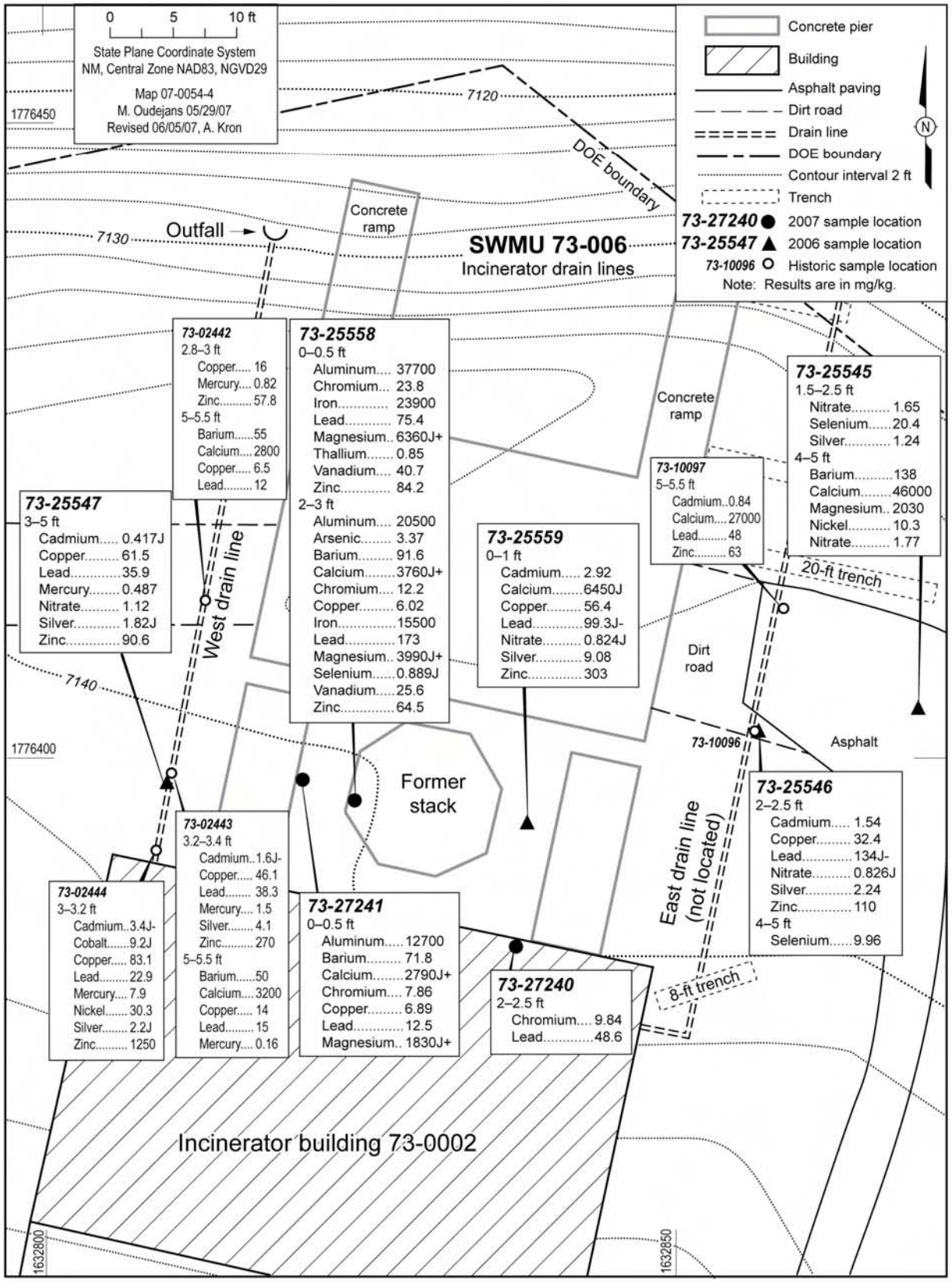


Figure 7.3.5-1 Inorganic chemicals detected above BVs at SWMU 73-006

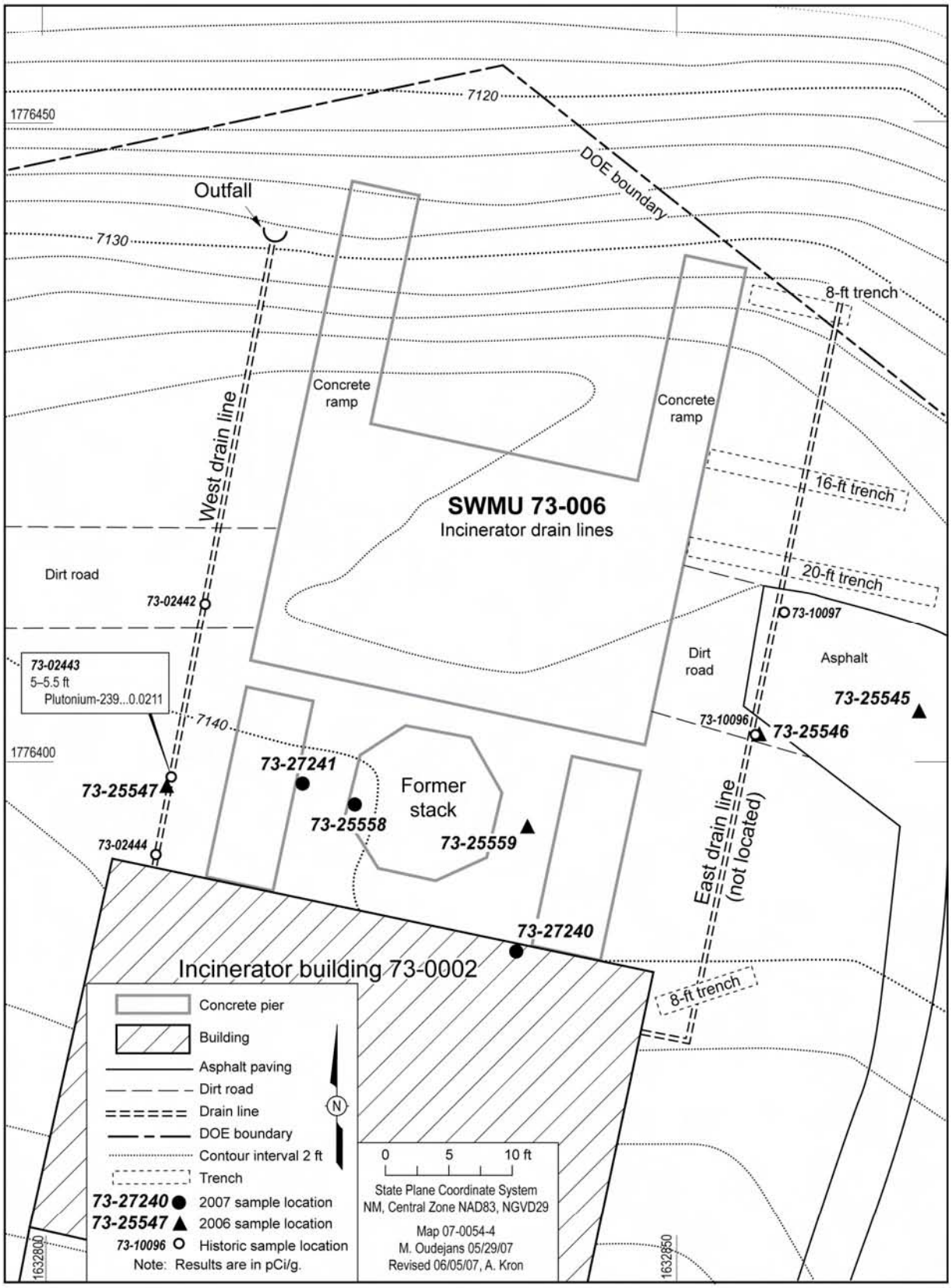


Figure 7.3.5-2 Radionuclides detected above BVs/FVs at SWMU 73-006

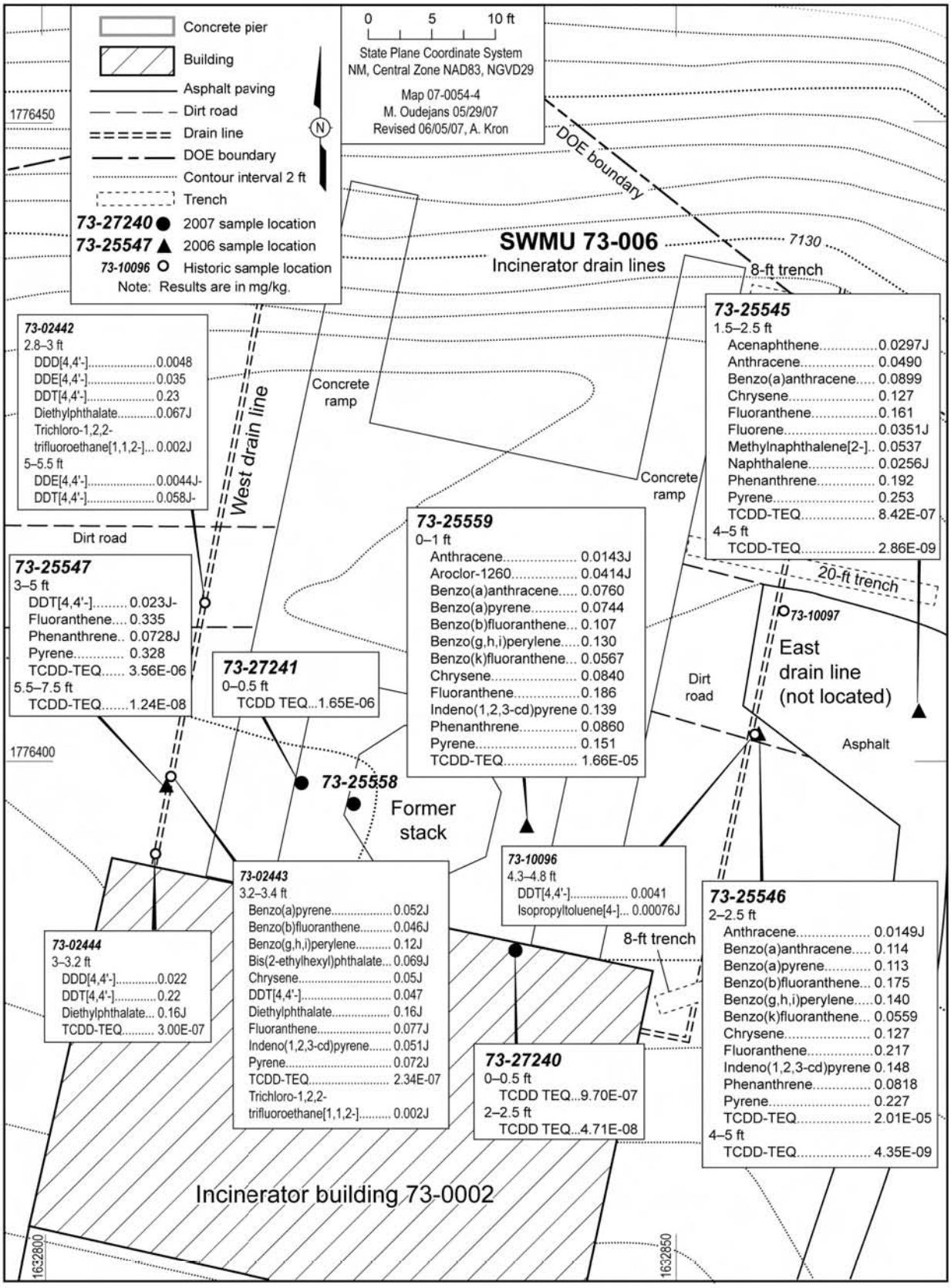


Figure 7.3.5-3 Organic chemicals detected at SWMU 73-006

Table 3.0-1
Brief Description of Field Investigation Methods

Method	Summary
Spade-and-Scoop Collection of Soil Samples	This method is typically used for the collection of shallow (i.e., approximately 0 to 12 in.) soil or sediment samples. The "spade-and-scoop" method involves digging a hole to the desired depth, as prescribed in the sampling and analysis plan, and collecting a discrete grab sample. The sample is typically placed in a clean stainless-steel bowl for transfer into various sample containers.
Hand Auger Sampling	This method is typically used for sampling soil or sediment at depths of less than 10 to 15 ft, but may in some cases be used for collecting samples of weathered or nonwelded tuff. The method involves hand-turning a stainless-steel bucket auger (typically 3- to 4-in. inner diameter) and creating a vertical hole that can be advanced to the desired sample depth. When the desired depth is reached, the auger is decontaminated before advancing the hole through the sampling depth. The sample material is transferred from the auger bucket to a stainless-steel sampling bowl before filling the various required sample containers.
Split-Spoon Core-Barrel Sampling	In this method, a stainless-steel core barrel (typically 4-in. inner diameter and 2.5 ft long) is advanced using a powered drilling rig. The core barrel extracts a continuous length of soil and/or rock that can be examined as a unit. The split-spoon core barrel is a cylindrical barrel split lengthwise so that the two halves can be separated to expose the core sample. Once extracted, the section of core is typically screened for radioactivity and organic vapors, photographed, and described in a geologic log. A portion of the core may then be collected as a discrete sample from the desired depth.
Headspace Vapor Screening	Individual soil, rock, or sediment samples may be field screened for volatile organic compounds by placing a portion of the sample in a plastic sample bag or in a glass container with a foil-sealed cover. The container is sealed and gently shaken and allowed to equilibrate for at least 5 min. The sample is then screened by inserting a photoionization detector (PID) probe into the container and measuring and recording any detected vapors.
Sample Control and Field Documentation	The collection, screening, and transport of samples is documented on standard forms generated by the Sample Management Office (SMO). These include sample collection logs, chain-of-custody forms, and sample container labels. Collection logs are completed at the time of sample collection and are signed by the sampler and a reviewer who verifies the logs for completeness and accuracy. Corresponding labels are initialed and applied to each sample container, and custody seals are placed around container lids or openings. Chain-of-custody forms are completed and assigned to verify that the samples are not left unattended.
Field Quality Control Samples	Field quality control samples are collected as follows: Field Duplicate: At a frequency of 10%; collected at the same time as a regular sample and submitted for the same analyses. Equipment Rinsate Blank: At a frequency of one per day or 5%, whichever is greater; collected by rinsing sampling equipment with deionized water and submitting the rinsate for laboratory analysis. Trip Blanks: Trip blanks are collected at a frequency of one per day or 5%, whichever is greater. Required for all field events that include the collection of samples for volatile organic compound analysis. Trip blanks are containers of certified clean sand that are opened and kept with the other sample containers during the sampling process.

Table 3.0-1 (continued)

Method	Summary
Field Decontamination of Drilling and Sampling Equipment	Dry decontamination is the preferred method to minimize the generation of liquid waste. Dry decontamination may include the use of a wire brush or other tool for the removal of soil or other material adhering to the sampling equipment, followed by the use of a commercial cleaning agent (nonacid, waxless cleaners) and paper wipes. Dry decontamination may be followed by wet decontamination if necessary. Wet decontamination may include washing with a nonphosphate detergent and water, followed by a water rinse and a second rinse with deionized water. Alternatively, steam cleaning may be used.
Containers and Preservation of Samples	Specific requirements/processes for sample containers, preservation techniques, and holding times are based on U.S. Environmental Protection Agency guidance for environmental sampling, preservation, and quality assurance. Specific requirements for each sample are printed on the sample collection logs provided by the SMO (size and type of container, such as glass, amber glass, polyethylene, preservative). All samples are preserved by placing them in insulated containers with ice to maintain a temperature of 4°C. Other requirements, such as the use of nitric acid or other preservatives, may apply to different media or analytical requests.
Management of Environmental Restoration Project Waste	Wastes are characterized based on a review of historical site information, existing site data, and/or waste analysis. Means to store, control, and transport potential wastes are identified ahead of field operations. Wastes are segregated by classification and compatibility to prevent crosscontamination and are packaged to meet on-site and/or off-site waste acceptance criteria. Disposal is coordinated with an approved disposal facility or through Los Alamos National Laboratory's waste operations group. Wastes are managed in accordance with U.S. Department of Energy orders, state and federal regulations, and specific project policies.
Waste Characterization	Project wastes are characterized by the field waste management coordinator, field team leader, or other member of the project team using a waste characterization strategy form (WCSF). The waste characterization strategy involves a review of existing analytical data or documentation for the waste stream, development of a sampling strategy, and verification of facility waste acceptance criteria. The WCSF includes site characteristics; site activities; responsible parties; waste stream characterization information; and storage, treatment, and disposal options. The WCSF is reviewed, and waste management documentation is prepared.
Coordination and Evaluation of Geodetic Surveys	A designated project participant determines the type of survey to be performed. This consists of either a "stakeout" survey, used for surveying previously defined locations, or an "unknown location survey," when the surveying of unknown locations is performed using existing coordinates. Survey personnel who perform control, property, easement, or boundary surveys must be registered professional land surveyors. Preparation for survey activities includes communication of expectations and requirements (e.g., degree of accuracy, locations, type of survey) to survey personnel. Survey personnel must chronologically document all survey activities and mark, identify, and record all survey locations, as instructed. Survey personnel prepare geodetic survey data for quality assurance review. The survey data are submitted to the project team leader and the quality program project leader for review. When the data are determined to be acceptable, they are finalized (i.e., assigned point labels), uploaded to a survey location template, and saved to a local disk or hard drive.

Table 3.1.1-1
Summary of Samples Collected and Analyses Requested at SWMU 73-002

Sample ID	Location ID	Depth (ft)	Media	Anions	Cyanide	TAL Metals	Perchlorate	Dioxins and Furans	Explosive Compounds	PCBs	Pesticides
0173-96-0302	73-02253	0–0.5	Soil	—[a]	—	2327[b]	—	—	—	2326	2326
0173-96-0320	73-02254	0–0.5	Soil	—	—	2327	—	—	—	2326	2326
0173-96-0308	73-02255	0–0.5	Soil	—	—	2327	—	—	—	2326	2326
0173-97-0311	73-02451	0.1–0.5	Soil	—	—	3794R	—	3793R	—	—	—
0173-97-0312	73-02451	0.5–1	Soil	—	—	3794R	—	3793R	—	—	—
0173-97-0313	73-02452	0.1–0.5	Soil	—	—	3794R	—	3793R	—	—	—
0173-97-0314	73-02452	0.5–1	Soil	—	—	3794R	—	3793R	—	—	—
0173-97-0315	73-02453	0.1–0.5	Soil	—	—	3794R	—	3793R	—	—	—
0173-97-0317	73-02453	1.5–2	Soil	—	—	3794R	—	3793R	—	—	—
0173-97-0322	73-02458	0.1–0.5	Soil	—	—	3806R	—	3804R	—	—	—
RE73-06-67646	73-25561	1–2	Soil	4918S	4918S	4918S	4918S	4916S	4917S	4917S	4917S
RE73-07-74671	73-25561	3.5–5	Soil	—	—	6437S	6437S	6436S	—	6437S	6437S
RE73-06-67649	73-25562	0–0.5	Soil	4918S	4918S	4918S	4918S	4916S	4917S	4917S	4917S
RE73-06-67650	73-25562	1–2	Soil	4918S	4918S	4918S	4918S	4916S	4917S	4917S	4917S
RE73-07-74673	73-25562	2.5–4	Qbt 3	—	—	6437S	6437S	6436S	—	6437S	6437S
RE73-06-67652	73-25563	0–0.5	Soil	4918S	4918S	4918S	4918S	4916S	4917S	4917S	4917S
RE73-06-67653	73-25563	1–2	Soil	4918S	4918S	4918S	4918S	4916S	4917S	4917S	4917S
RE73-07-74675	73-25563	3–4	Qbt 3	—	6471S	6471S	6471S	6470S	—	6471S	6471S
RE73-07-76488	73-25564	0–0.5	Qbt 3	—	6963S	6963S	6963S	6960S	6961S	6962S	6962S
RE73-07-74678	73-25564	2.5–3	Qbt 3	—	6489S	6489S	6489S	6487S	6488S	6488S	6488S
RE73-07-74679	73-25565	0–1	Soil	—	—	6459S	6459S	6457S	—	6458S	6458S
RE73-07-74680	73-25565	3–4	Soil	—	—	6459S	6459S	6457S	—	6458S	6458S
RE73-06-67662	73-25566	1–2	Soil	4927S	4927S	4927S	4927S	4929S	4926S	4926S	4926S
RE73-07-74715	73-25566	2–3	Qbt 3	—	6473S	6473S	6473S	6472S	—	6473S	6473S

Table 3.1.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Anions	Cyanide	TAL Metals	Perchlorate	Dioxins and Furans	Explosive Compounds	PCBs	Pesticides
RE73-06-67664	73-25567	0–0.5	Soil	4927S	4927S	4927S	4927S	4929S	4926S	4926S	4926S
RE73-06-67665	73-25567	2–3	Soil	4927S	4927S	4927S	4927S	4929S	4926S	4926S	4926S
RE73-07-74683	73-25567	2.5–4	Qbt 3	—	6431S	6431S	6431S	6430S	—	6431S	6431S
RE73-07-74685	73-25568	0–1	Soil	—	6459S	6459S	6459S	6457S	—	6458S	6458S
RE73-07-74686	73-25568	1.25–2	Qbt 3	—	6459S	6459S	6459S	6457S	—	6458S	6458S
RE73-07-74717	73-25568	3–4.5	Qbt 3	—	6455S	6455S	6455S	6456S	—	6455S	6455S
RE73-07-74687	73-25569	0–0.5	Soil	—	—	6971S	6971S	6970S	—	6972S	6972S
RE73-06-67671	73-25569	2–3	Soil	4927S	4927S	4927S	4927S	4929S	4926S	4926S	4926S
RE73-07-74688	73-25569	2–2.5	Qbt 3	—	6971S	6971S	6971S	6970S	—	6972S	6972S
RE73-07-74689	73-25570	0–0.5	Qbt 3	—	—	6971S	6971S	6970S	—	6972S	6972S
RE73-07-74690	73-25570	2–2.5	Qbt 3	—	—	6971S	6971S	6970S	—	6972S	6972S
RE73-07-74691	73-25571	0–0.5	Soil	—	—	6971S	6971S	6970S	—	6972S	6972S
RE73-07-74692	73-25571	2–2.5	Qbt 3	—	—	6971S	6971S	6970S	—	6972S	6972S
RE73-07-74693	73-25572	0–0.5	Qbt 3	—	—	6942S	6942S	6943S	—	6944S	6944S
RE73-07-74694	73-25572	2–2.5	Qbt 3	—	—	6942S	6942S	6943S	—	6944S	6944S
RE73-07-74695	73-25573	0–0.5	Qbt 3	—	—	6935S	6935S	6927S	—	6928S	6928S
RE73-07-74696	73-25573	2–2.5	Qbt 3	—	6935S	6935S	6935S	6927S	—	6928S	6928S
RE73-07-74697	73-25574	0–0.5	Qbt 3	—	—	6935S	6935S	6927S	—	6928S	6928S
RE73-07-74698	73-25574	2–2.5	Qbt 3	—	—	6935S	6935S	6927S	—	6928S	6928S
RE73-07-74699	73-25575	0–0.5	Qbt 3	—	6935S	6935S	6935S	6927S	—	6928S	6928S
RE73-07-74700	73-25575	1.5–2	Qbt 3	—	—	6935S	6935S	6927S	—	6928S	6928S
RE73-06-67758	73-25593	0–0.25	Soil	4888S	4888S	4888S	4888S	4886S	4887S	4887S	4887S
RE73-06-67759	73-25594	0–0.25	Soil	4888S	4888S	4888S	4888S	4886S	4887S	4887S	4887S
RE73-07-74524	73-25594	1–2	Soil	—	—	6428S	—	—	—	—	—

Table 3.1.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Anions	Cyanide	TAL Metals	Perchlorate	Dioxins and Furans	Explosive Compounds	PCBs	Pesticides
RE73-06-67760	73-25595	0–0.25	Soil	4888S	4888S	4888S	4888S	4886S	4887S	4887S	4887S
RE73-06-67761	73-25596	0–0.25	Soil	4888S	4888S	4888S	4888S	4886S	4887S	4887S	4887S
RE73-06-67762	73-25597	0–0.25	Soil	4888S	4888S	4888S	4888S	4886S	4887S	4887S	4887S
RE73-07-74525	73-25597	1–2	Soil	—	—	6428S	—	—	—	—	—
RE73-06-67763	73-25598	0–0.25	Soil	4888S	4888S	4888S	4888S	4886S	4887S	4887S	4887S
RE73-06-67764	73-25599	0–0.25	Soil	4888S	4888S	4888S	4888S	4886S	4887S	4887S	4887S
RE73-06-67765	73-25600	0–0.25	Soil	4888S	4888S	4888S	4888S	4886S	4887S	4887S	4887S
RE73-06-67766	73-25601	0–0.25	Soil	4888S	4888S	4888S	4888S	4886S	4887S	4887S	4887S
RE73-07-74526	73-25604	1–2	Soil	—	—	6428S	—	—	—	—	—
RE73-06-67770	73-25605	0–0.25	Soil	4898S	4898S	4898S	4898S	4896S	4897S	4897S	4897S
RE73-06-67771	73-25606	0–0.25	Soil	4898S	4898S	4898S	4898S	4896S	4897S	4897S	4897S
RE73-07-74527	73-25606	1–2	Soil	—	—	6428S	—	—	—	—	—
RE73-06-67772	73-25607	0–0.25	Soil	4898S	4898S	4898S	4898S	4896S	4897S	4897S	4897S
RE73-06-67773	73-25608	0–0.25	Soil	4898S	4898S	4898S	4898S	4896S	4897S	4897S	4897S
RE73-06-67774	73-25609	0–0.25	Soil	4898S	4898S	4898S	4898S	4896S	4897S	4897S	4897S
RE73-06-67775	73-25610	0–0.25	Soil	4898S	4898S	4898S	4898S	4896S	4897S	4897S	4897S
RE73-06-67776	73-25611	0–0.25	Soil	4898S	4898S	4898S	4898S	4896S	4897S	4897S	4897S
RE73-06-67777	73-25612	0–0.25	Soil	4922S	4922S	4922S	4922S	4920S	4921S	4921S	4921S
RE73-07-74528	73-25612	1–2	Soil	—	—	6428S	—	—	—	—	—
RE73-06-67778	73-25613	0–0.25	Soil	4922S	4922S	4922S	4922S	4920S	4921S	4921S	4921S
RE73-06-67779	73-25614	0–0.25	Soil	4922S	4922S	4922S	4922S	4920S	4921S	4921S	4921S
RE73-07-74529	73-25614	1–2	Soil	—	—	6428S	—	—	—	—	—
RE73-06-67780	73-25615	0–0.25	Soil	4922S	4922S	4922S	4922S	4920S	4921S	4921S	4921S
RE73-06-67781	73-25616	0–0.25	Soil	4922S	4922S	4922S	4922S	4920S	4921S	4921S	4921S

Table 3.1.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Anions	Cyanide	TAL Metals	Perchlorate	Dioxins and Furans	Explosive Compounds	PCBs	Pesticides
RE73-06-67782	73-25617	0–0.25	Soil	4922S	4922S	4922S	4922S	4920S	4921S	4921S	4921S
RE73-06-67783	73-25618	0–0.25	Soil	4922S	4922S	4922S	4922S	4920S	4921S	4921S	4921S
RE73-06-67784	73-25619	0–0.25	Soil	4922S	4922S	4922S	4922S	4920S	4921S	4921S	4921S
RE73-06-67785	73-25620	0–0.25	Soil	4922S	4922S	4922S	4922S	4920S	4921S	4921S	4921S
RE73-07-74726	73-27279	0–1	Soil	—	—	6441S	6441S	6438S	—	6439S	6439S
RE73-07-74727	73-27279	1.5–2.75	Qbt 3	—	—	6441S	6441S	6438S	—	6439S	6439S
RE73-07-74728	73-27279	3.5–4.5	Qbt 3	—	6441S	6441S	6441S	6438S	—	6439S	6439S
RE73-07-74729	73-27280	0–1.5	Soil	—	6441S	6441S	6441S	6438S	—	6439S	6439S
RE73-07-74730	73-27280	1.5–2.5	Qbt 3	—	6441S	6441S	6441S	6438S	—	6439S	6439S
RE73-07-74731	73-27280	3.5–5	Qbt 3	—	6441S	6441S	6441S	6438S	—	6439S	6439S
RE73-07-76485	73-27281	0–0.5	Soil	—	—	6963S	6963S	6960S	—	6962S	6962S
RE73-07-74733	73-27281	1.5–2.5	Qbt 3	—	—	6441S	6441S	6438S	—	6439S	6439S
RE73-07-74734	73-27281	3.5–4.5	Qbt 3	—	—	6441S	6441S	6438S	—	6439S	6439S
RE73-07-74735	73-27282	0–2	Soil	—	6464S	6464S	6464S	6461S	—	6462S	6462S
RE73-07-74736	73-27282	2.5–3.75	Qbt 3	—	6464S	6464S	6464S	6461S	—	6462S	6462S
RE73-07-74737	73-27282	4–5	Qbt 3	—	6464S	6464S	6464S	6461S	—	6462S	6462S
RE73-07-74739	73-27283	0–1	Soil	—	—	6564S	6564S	6563S	—	6564S	6564S
RE73-07-74738	73-27283	1–2	Qbt 3	—	—	6501S	6501S	6500S	—	6501S	6501S
RE73-07-74741	73-27284	0–2	Soil	—	—	6464S	6464S	6461S	—	6462S	6462S
RE73-07-74742	73-27284	2–3	Qbt 3	—	—	6464S	6464S	6461S	—	6462S	6462S
RE73-07-74744	73-27285	0–1	Qbt 3	—	6464S	6464S	6464S	6461S	—	6462S	6462S
RE73-07-74745	73-27285	1–2.5	Qbt 3	—	6464S	6464S	6464S	6461S	—	6462S	6462S
RE73-07-74746	73-27285	3–4	Qbt 3	—	6464S	6464S	6464S	6461S	—	6462S	6462S
RE73-07-74747	73-27286	0–2	Soil	—	—	6464S	6464S	6461S	—	6462S	6462S

Table 3.1.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Anions	Cyanide	TAL Metals	Perchlorate	Dioxins and Furans	Explosive Compounds	PCBs	Pesticides
RE73-07-74748	73-27286	2–3	Qbt 3	—	—	6464S	6464S	6461S	—	6462S	6462S
RE73-07-74749	73-27286	3–5	Qbt 3	—	—	6464S	6464S	6461S	—	6462S	6462S
RE73-07-74750	73-27287	0–1	Qbt 3	—	6476S	6476S	6476S	6474S	—	6475S	6475S
RE73-07-74751	73-27287	1–2	Qbt 3	—	6476S	6476S	6476S	6474S	—	6475S	6475S
RE73-07-74752	73-27287	3–4	Qbt 3	—	6476S	6476S	6476S	6474S	—	6475S	6475S
RE73-07-74753	73-27288	0–1.5	Soil	—	—	6476S	6476S	6474S	—	6475S	6475S
RE73-07-74754	73-27288	2.25–3	Qbt 3	—	—	6476S	6476S	6474S	—	6475S	6475S
RE73-07-74755	73-27288	4–5.5	Qbt 3	—	—	6476S	6476S	6474S	—	6475S	6475S
RE73-07-74756	73-27289	0–2.5	Qbt 3	—	—	6476S	6476S	6474S	—	6475S	6475S
RE73-07-74757	73-27289	3–4	Qbt 3	—	—	6476S	6476S	6474S	—	6475S	6475S
RE73-07-74759	73-27290	0–1.5	Qbt 3	—	—	6476S	6476S	6474S	—	6475S	6475S
RE73-07-74760	73-27290	2–3	Qbt 3	—	—	6476S	6476S	6474S	—	6475S	6475S
RE73-07-74762	73-27291	0–2	Soil	—	—	6545S	6545S	6543S	—	6544S	6544S
RE73-07-74763	73-27291	2–3.5	Qbt 3	—	—	6545S	6545S	6543S	—	6544S	6544S
RE73-07-74765	73-27292	0–1.5	Qbt 3	—	6484S	6484S	6484S	6482S	6483S	6483S	6483S
RE73-07-74766	73-27292	2–3	Qbt 3	—	6484S	6484S	6484S	6482S	6483S	6483S	6483S
RE73-07-74768	73-27293	0–1.5	Qbt 3	—	—	6484S	6484S	6482S	—	6483S	6483S
RE73-07-74769	73-27293	1.5–3	Qbt 3	—	—	6484S	6484S	6482S	—	6483S	6483S
RE73-07-74770	73-27293	3–4	Qbt 3	—	—	6484S	6484S	6482S	—	6483S	6483S
RE73-07-74771	73-27294	0–1.5	Qbt 3	—	6498S	6498S	6498S	6497S	—	6498S	6498S
RE73-07-74772	73-27294	2–3	Qbt 3	—	6498S	6498S	6498S	6497S	—	6498S	6498S
RE73-07-74774	73-27295	0–2	Qbt 3	—	—	6484S	6484S	6482S	—	6483S	6483S
RE73-07-74775	73-27295	2.5–4	Qbt 3	—	—	6484S	6484S	6482S	—	6483S	6483S
RE73-07-76503	73-27296	0–0.5	Qbt 3	—	6946S	6946S	6946S	6947S	—	6948S	6948S

Table 3.1.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Anions	Cyanide	TAL Metals	Perchlorate	Dioxins and Furans	Explosive Compounds	PCBs	Pesticides
RE73-07-76504	73-27296	2–2.5	Qbt 3	—	6946S	6946S	6946S	6947S	—	6948S	6948S
RE73-07-74780	73-27297	0–0.5	Qbt 3	—	6501S	6501S	6501S	6500S	6501S	6501S	6501S
RE73-07-74783	73-27298	0–1	Soil	—	6501S	6501S	6501S	6500S	6501S	6501S	6501S
RE73-07-76491	73-27298	2–2.5	Qbt 3	—	6963S	6963S	6963S	6960S	—	6962S	6962S
RE73-07-74790	73-27299	0–1.5	Qbt 3	—	6504S	6504S	6504S	6503S	—	6504S	6504S
RE73-07-74791	73-27299	2–3.5	Qbt 3	—	6504S	6504S	6504S	6503S	—	6504S	6504S
RE73-07-74793	73-27300	0–1	Qbt 3	—	—	6504S	6504S	6503S	—	6504S	6504S
RE73-07-74794	73-27300	2–3	Qbt 3	—	—	6504S	6504S	6503S	—	6504S	6504S
RE73-07-74796	73-27301	0–2	Qbt 3	—	—	6573S	6573S	6582S	—	6573S	6573S
RE73-07-74797	73-27301	2.5–3.5	Qbt 3	—	—	6573S	6573S	6582S	—	6573S	6573S
RE73-07-74799	73-27302	0–0.5	Qbt 3	—	—	6933S	6933S	6924S	—	6925S	6925S
RE73-07-74800	73-27302	2–2.5	Qbt 3	—	—	6933S	6933S	6924S	—	6925S	6925S
RE73-07-74802	73-27303	0–0.5	Qbt 3	—	6933S	6933S	6933S	6924S	—	6925S	6925S
RE73-07-74803	73-27303	1–1.5	Qbt 3	—	—	6933S	6933S	6924S	—	6925S	6925S
RE73-07-74805	73-27304	0–0.5	Qbt 3	—	—	6968S	6968S	6966S	—	6967S	6967S
RE73-07-74806	73-27304	2–2.5	Qbt 3	—	—	6968S	6968S	6966S	—	6967S	6967S
RE73-07-74808	73-27305	0–0.5	Qbt 3	—	—	6968S	6968S	6966S	—	6967S	6967S
RE73-07-74811	73-27306	0–0.5	Qbt 3	—	—	6968S	6968S	6966S	—	6967S	6967S
RE73-07-74812	73-27306	2–2.5	Qbt 3	—	—	6968S	6968S	6966S	—	6967S	6967S
RE73-07-74814	73-27307	0–0.5	Soil	—	—	6938S	6938S	6939S	—	6940S	6940S
RE73-07-74815	73-27307	2–2.5	Qbt 3	—	—	6938S	6938S	6939S	—	6940S	6940S
RE73-07-74817	73-27308	0–1	Soil	—	—	6573S	6573S	6582S	—	6573S	6573S
RE73-07-74819	73-27308	4–4.5	Soil	—	—	6573S	6573S	6582S	—	6573S	6573S
RE73-07-74820	73-27309	0–0.5	Qbt 3	—	6933S	6933S	6933S	6924S	—	6925S	6925S

Table 3.1.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Anions	Cyanide	TAL Metals	Perchlorate	Dioxins and Furans	Explosive Compounds	PCBs	Pesticides
RE73-07-74821	73-27309	2–2.5	Qbt 3	—	—	6933S	6933S	6924S	—	6925S	6925S
RE73-07-74823	73-27310	0–0.5	Qbt 3	—	—	6933S	6933S	6924S	—	6925S	6925S
RE73-07-74824	73-27310	2–2.5	Qbt 3	—	—	6933S	6933S	6924S	—	6925S	6925S
RE73-07-74826	73-27311	0–0.5	Qbt 3	—	6968S	6968S	6968S	6966S	—	6967S	6967S
RE73-07-74829	73-27312	0–0.5	Qbt 3	—	6968S	6968S	6968S	6966S	—	6967S	6967S
RE73-07-74830	73-27312	2–2.5	Qbt 3	—	6968S	6968S	6968S	6966S	—	6967S	6967S
RE73-07-74832	73-27313	0–0.5	Qbt 3	—	—	6938S	6938S	6939S	—	6940S	6940S
RE73-07-74833	73-27313	2–2.5	Qbt 3	—	—	6938S	6938S	6939S	—	6940S	6940S
RE73-07-74835	73-27314	0–0.5	Soil	—	—	6938S	6938S	6939S	—	6940S	6940S
RE73-07-74838	73-27315	0–0.25	Qbt 3	—	6968S	6968S	6968S	—	—	—	—
RE73-07-74841	73-27316	0–1	Soil	—	—	6511S	6511S	6510S	—	6511S	6511S
RE73-07-74842	73-27316	1–2	Qbt 3	—	—	6511S	6511S	6510S	—	6511S	6511S
RE73-07-74850	73-27319	0–0.5	Qbt 3	—	—	6983S	6983S	6982S	—	6983S	6983S
RE73-07-74851	73-27319	2–2.5	Qbt 3	—	—	6983S	6983S	6982S	—	6983S	6983S
RE73-07-76473	73-27678	0–0.5	Soil	—	—	6946S	6946S	6947S	—	6948S	6948S
RE73-07-76474	73-27678	3.5–4	Qbt 3	—	—	6946S	6946S	6947S	—	6948S	6948S
RE73-07-76475	73-27678	5.5–6	Qbt 3	—	—	6946S	6946S	6947S	—	6948S	6948S
RE73-07-76476	73-27679	0–0.5	Qbt 3	—	—	6963S	6963S	6960S	—	6962S	6962S
RE73-07-76477	73-27679	2–2.5	Qbt 3	—	—	6963S	6963S	6960S	—	6962S	6962S
RE73-07-76479	73-27680	0–0.5	Qbt 3	—	6963S	6963S	6963S	6960S	—	6962S	6962S
RE73-07-76480	73-27680	2–2.5	Qbt 3	—	6963S	6963S	6963S	6960S	—	6962S	6962S
RE73-07-76482	73-27681	0–0.5	Qbt 3	—	—	6963S	6963S	6960S	—	6962S	6962S
RE73-07-76483	73-27681	2–2.5	Qbt 3	—	—	6963S	6963S	6960S	—	6962S	6962S

Table 3.1.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	SVOCs	VOCs	Americium-241	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Strontium-90
0173-96-0302	73-02253	0–0.5	Soil	2326	2326	—	—	2328	—	—	—
0173-96-0320	73-02254	0–0.5	Soil	2326	2326	—	—	2328	—	—	—
0173-96-0308	73-02255	0–0.5	Soil	2326	2326	—	—	2328	—	—	—
0173-97-0311	73-02451	0.1–0.5	Soil	—	—	—	—	—	—	—	—
0173-97-0312	73-02451	0.5–1	Soil	—	—	—	—	—	—	—	—
0173-97-0313	73-02452	0.1–0.5	Soil	—	—	—	—	—	—	—	—
0173-97-0314	73-02452	0.5–1	Soil	—	—	—	—	—	—	—	—
0173-97-0315	73-02453	0.1–0.5	Soil	—	—	—	—	—	—	—	—
0173-97-0317	73-02453	1.5–2	Soil	—	—	—	—	—	—	—	—
0173-97-0322	73-02458	0.1–0.5	Soil	3805R	—	—	—	—	—	—	—
RE73-06-67646	73-25561	1–2	Soil	4917S	4917S	4919S	4918S	—	4919S	4919S	—
RE73-07-74671	73-25561	3.5–5	Soil	6437S	—	6437S	—	6437S	6437S	6437S	6437S
RE73-06-67649	73-25562	0–0.5	Soil	4917S	4917S	4919S	4918S	—	4919S	4919S	—
RE73-06-67650	73-25562	1–2	Soil	4917S	4917S	4919S	4918S	—	4919S	4919S	—
RE73-07-74673	73-25562	2.5–4	Qbt 3	6437S	—	6437S	—	6437S	6437S	6437S	6437S
RE73-06-67652	73-25563	0–0.5	Soil	4917S	4917S	4919S	4918S	—	4919S	4919S	—
RE73-06-67653	73-25563	1–2	Soil	4917S	4917S	4919S	4918S	—	4919S	4919S	—
RE73-07-74675	73-25563	3–4	Qbt 3	6471S	—	6471S	—	6471S	6471S	6471S	6471S
RE73-07-76488	73-25564	0–0.5	Qbt 3	6962S	—	6965S	6965S	—	6965S	6965S	6965S
RE73-07-74678	73-25564	2.5–3	Qbt 3	6488S	—	6490S	—	6490S	6490S	6488S	6490S
RE73-07-74679	73-25565	0–1	Soil	6458S	—	6460S	—	6460S	6460S	6458S	6460S
RE73-07-74680	73-25565	3–4	Soil	6458S	—	6460S	—	6460S	6460S	6458S	6460S
RE73-06-67662	73-25566	1–2	Soil	4926S	4926S	4928S	4927S	—	4928S	4928S	—
RE73-07-74715	73-25566	2–3	Qbt 3	6473S	—	6473S	—	6473S	6473S	6473S	6473S

Table 3.1.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	SVOCs	VOCs	Americium-241	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE73-06-67664	73-25567	0–0.5	Soil	4926S	4926S	4928S	4927S	—	4928S	4928S	—
RE73-06-67665	73-25567	2–3	Soil	4926S	4926S	4928S	4927S	—	4928S	4928S	—
RE73-07-74683	73-25567	2.5–4	Qbt 3	6431S	—	6431S	—	6431S	6431S	6431S	6431S
RE73-07-74685	73-25568	0–1	Soil	6458S	—	6460S	—	6460S	6460S	6458S	6460S
RE73-07-74686	73-25568	1.25–2	Qbt 3	6458S	—	6460S	—	6460S	6460S	6458S	6460S
RE73-07-74717	73-25568	3–4.5	Qbt 3	6455S	—	6455S	—	6455S	6455S	6455S	6455S
RE73-07-74687	73-25569	0–0.5	Soil	6972S	—	6973S	—	—	6973S	6973S	6973S
RE73-06-67671	73-25569	2–3	Soil	4926S	4926S	4928S	4927S	—	4928S	4928S	—
RE73-07-74688	73-25569	2–2.5	Qbt 3	6972S	—	6973S	—	—	6973S	6973S	6973S
RE73-07-74689	73-25570	0–0.5	Qbt 3	6972S	—	6973S	—	—	6973S	6973S	6973S
RE73-07-74690	73-25570	2–2.5	Qbt 3	6972S	—	6973S	—	—	6973S	6973S	6973S
RE73-07-74691	73-25571	0–0.5	Soil	6972S	—	6973S	—	—	6973S	6973S	6973S
RE73-07-74692	73-25571	2–2.5	Qbt 3	6972S	—	6973S	—	—	6973S	6973S	6973S
RE73-07-74693	73-25572	0–0.5	Qbt 3	6944S	—	6945S	—	—	6945S	6945S	6945S
RE73-07-74694	73-25572	2–2.5	Qbt 3	6944S	—	6945S	—	—	6945S	6945S	6945S
RE73-07-74695	73-25573	0–0.5	Qbt 3	6928S	—	6929S	—	—	6929S	6929S	6929S
RE73-07-74696	73-25573	2–2.5	Qbt 3	6928S	—	6929S	—	—	6929S	6929S	6929S
RE73-07-74697	73-25574	0–0.5	Qbt 3	6928S	—	6929S	—	—	6929S	6929S	6929S
RE73-07-74698	73-25574	2–2.5	Qbt 3	6928S	—	6929S	—	—	6929S	6929S	6929S
RE73-07-74699	73-25575	0–0.5	Qbt 3	6928S	—	6929S	—	—	6929S	6929S	6929S
RE73-07-74700	73-25575	1.5–2	Qbt 3	6928S	—	6929S	—	—	6929S	6929S	6929S
RE73-06-67758	73-25593	0–0.25	Soil	4887S	4887S	4889S	4888S	—	4889S	4889S	—
RE73-06-67759	73-25594	0–0.25	Soil	4887S	4887S	4889S	4888S	—	4889S	4889S	—
RE73-07-74524	73-25594	1–2	Soil	—	—	6429S	6429S	6429S	6429S	—	6429S

Table 3.1.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	SVOCs	VOCs	Americium-241	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE73-06-67760	73-25595	0–0.25	Soil	4887S	4887S	4889S	4888S	—	4889S	4889S	—
RE73-06-67761	73-25596	0–0.25	Soil	4887S	4887S	4889S	4888S	—	4889S	4889S	—
RE73-06-67762	73-25597	0–0.25	Soil	4887S	4887S	4889S	4888S	—	4889S	4889S	—
RE73-07-74525	73-25597	1–2	Soil	—	—	6429S	6429S	6429S	6429S	—	6429S
RE73-06-67763	73-25598	0–0.25	Soil	4887S	4887S	4889S	4888S	—	4889S	4889S	—
RE73-06-67764	73-25599	0–0.25	Soil	4887S	4887S	4889S	4888S	—	4889S	4889S	—
RE73-06-67765	73-25600	0–0.25	Soil	4887S	4887S	4889S	4888S	—	4889S	4889S	—
RE73-06-67766	73-25601	0–0.25	Soil	4887S	4887S	4889S	4888S	—	4889S	4889S	—
RE73-07-74526	73-25604	1–2	Soil	—	—	6429S	6429S	6429S	6429S	—	6429S
RE73-06-67770	73-25605	0–0.25	Soil	4897S	4897S	4899S	4898S	—	4899S	4899S	—
RE73-06-67771	73-25606	0–0.25	Soil	4897S	4897S	4899S	4898S	—	4899S	4899S	—
RE73-07-74527	73-25606	1–2	Soil	—	—	6429S	6429S	6429S	6429S	—	6429S
RE73-06-67772	73-25607	0–0.25	Soil	4897S	4897S	4899S	4898S	—	4899S	4899S	—
RE73-06-67773	73-25608	0–0.25	Soil	4897S	4897S	4899S	4898S	—	4899S	4899S	—
RE73-06-67774	73-25609	0–0.25	Soil	4897S	4897S	4899S	4898S	—	4899S	4899S	—
RE73-06-67775	73-25610	0–0.25	Soil	4897S	4897S	4899S	4898S	—	4899S	4899S	—
RE73-06-67776	73-25611	0–0.25	Soil	4897S	4897S	4899S	4898S	—	4899S	4899S	—
RE73-06-67777	73-25612	0–0.25	Soil	4921S	4921S	4923S	4922S	—	4923S	4923S	—
RE73-07-74528	73-25612	1–2	Soil	—	—	6429S	6429S	6429S	6429S	—	6429S
RE73-06-67778	73-25613	0–0.25	Soil	4921S	4921S	4923S	4922S	—	4923S	4923S	—
RE73-06-67779	73-25614	0–0.25	Soil	4921S	4921S	4923S	4922S	—	4923S	4923S	—
RE73-07-74529	73-25614	1–2	Soil	—	—	6429S	6429S	6429S	6429S	—	6429S
RE73-06-67780	73-25615	0–0.25	Soil	4921S	4921S	4923S	4922S	—	4923S	4923S	—
RE73-06-67781	73-25616	0–0.25	Soil	4921S	4921S	4923S	4922S	—	4923S	4923S	—

Table 3.1.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	SVOCs	VOCs	Americium-241	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE73-06-67782	73-25617	0–0.25	Soil	4921S	4921S	4923S	4922S	—	4923S	4923S	—
RE73-06-67783	73-25618	0–0.25	Soil	4921S	4921S	4923S	4922S	—	4923S	4923S	—
RE73-06-67784	73-25619	0–0.25	Soil	4921S	4921S	4923S	4922S	—	4923S	4923S	—
RE73-06-67785	73-25620	0–0.25	Soil	4921S	4921S	4923S	4922S	—	4923S	4923S	—
RE73-07-74726	73-27279	0–1	Soil	6439S	—	6442S	—	6442S	6442S	6439S	6442S
RE73-07-74727	73-27279	1.5–2.75	Qbt 3	6439S	—	6442S	—	6442S	6442S	6439S	6442S
RE73-07-74728	73-27279	3.5–4.5	Qbt 3	6439S	—	6442S	—	6442S	6442S	6439S	6442S
RE73-07-74729	73-27280	0–1.5	Soil	6439S	—	6442S	—	6442S	6442S	6439S	6442S
RE73-07-74730	73-27280	1.5–2.5	Qbt 3	6439S	—	6442S	—	6442S	6442S	6439S	6442S
RE73-07-74731	73-27280	3.5–5	Qbt 3	6439S	—	6442S	—	6442S	6442S	6439S	6442S
RE73-07-76485	73-27281	0–0.5	Soil	6962S	—	6965S	6965S	—	6965S	6965S	6965S
RE73-07-74733	73-27281	1.5–2.5	Qbt 3	6439S	—	6442S	—	6442S	6442S	6439S	6442S
RE73-07-74734	73-27281	3.5–4.5	Qbt 3	6439S	—	6442S	—	6442S	6442S	6439S	6442S
RE73-07-74735	73-27282	0–2	Soil	6462S	—	6465S	—	6465S	6465S	6462S	6465S
RE73-07-74736	73-27282	2.5–3.75	Qbt 3	6462S	—	6465S	—	6465S	6465S	6462S	6465S
RE73-07-74737	73-27282	4–5	Qbt 3	6462S	—	6465S	—	6465S	6465S	6462S	6465S
RE73-07-74739	73-27283	0–1	Soil	6564S	—	6564S	—	6564S	6564S	6564S	6564S
RE73-07-74738	73-27283	1–2	Qbt 3	6501S	—	6499S	—	6499S	6499S	6501S	—
RE73-07-74741	73-27284	0–2	Soil	6462S	—	6465S	—	6465S	6465S	6462S	6465S
RE73-07-74742	73-27284	2–3	Qbt 3	6462S	—	6465S	—	6465S	6465S	6462S	6465S
RE73-07-74744	73-27285	0–1	Qbt 3	6462S	—	6465S	—	6465S	6465S	6462S	6465S
RE73-07-74745	73-27285	1–2.5	Qbt 3	6462S	—	6465S	—	6465S	6465S	6462S	6465S
RE73-07-74746	73-27285	3–4	Qbt 3	6462S	—	6465S	—	6465S	6465S	6462S	6465S
RE73-07-74747	73-27286	0–2	Soil	6462S	—	6465S	—	6465S	6465S	6462S	6465S

Table 3.1.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	SVOCs	VOCs	Americium-241	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE73-07-74748	73-27286	2–3	Qbt 3	6462S	—	6465S	—	6465S	6465S	6462S	6465S
RE73-07-74749	73-27286	3–5	Qbt 3	6462S	—	6465S	—	6465S	6465S	6462S	6465S
RE73-07-74750	73-27287	0–1	Qbt 3	6475S	—	6478S	—	6478S	6478S	6475S	6478S
RE73-07-74751	73-27287	1–2	Qbt 3	6475S	—	6478S	—	6478S	6478S	6475S	6478S
RE73-07-74752	73-27287	3–4	Qbt 3	6475S	—	6478S	—	6478S	6478S	6475S	6478S
RE73-07-74753	73-27288	0–1.5	Soil	6475S	—	6478S	—	6478S	6478S	6475S	6478S
RE73-07-74754	73-27288	2.25–3	Qbt 3	6475S	—	6478S	—	6478S	6478S	6475S	6478S
RE73-07-74755	73-27288	4–5.5	Qbt 3	6475S	—	6478S	—	6478S	6478S	6475S	6478S
RE73-07-74756	73-27289	0–2.5	Qbt 3	6475S	—	6478S	—	6478S	6478S	6475S	6478S
RE73-07-74757	73-27289	3–4	Qbt 3	6475S	—	6478S	—	6478S	6478S	6475S	6478S
RE73-07-74759	73-27290	0–1.5	Qbt 3	6475S	—	6478S	—	6478S	6478S	6475S	6478S
RE73-07-74760	73-27290	2–3	Qbt 3	6475S	—	6478S	—	6478S	6478S	6475S	6478S
RE73-07-74762	73-27291	0–2	Soil	6544S	—	6546S	—	6546S	6546S	6544S	6546S
RE73-07-74763	73-27291	2–3.5	Qbt 3	6544S	—	6546S	—	6546S	6546S	6544S	6546S
RE73-07-74765	73-27292	0–1.5	Qbt 3	6483S	—	6486S	—	6486S	6486S	6483S	6486S
RE73-07-74766	73-27292	2–3	Qbt 3	6483S	—	6486S	—	6486S	6486S	6483S	6486S
RE73-07-74768	73-27293	0–1.5	Qbt 3	6483S	—	6486S	—	6486S	6486S	6483S	6486S
RE73-07-74769	73-27293	1.5–3	Qbt 3	6483S	—	6486S	—	6486S	6486S	6483S	6486S
RE73-07-74770	73-27293	3–4	Qbt 3	6483S	—	6486S	—	6486S	6486S	6483S	6486S
RE73-07-74771	73-27294	0–1.5	Qbt 3	6498S	—	6498S	—	6498S	6498S	6498S	6498S
RE73-07-74772	73-27294	2–3	Qbt 3	6498S	—	6498S	—	6498S	6498S	6498S	6498S
RE73-07-74774	73-27295	0–2	Qbt 3	6483S	—	6486S	—	6486S	6486S	6483S	6486S
RE73-07-74775	73-27295	2.5–4	Qbt 3	6483S	—	6486S	—	6486S	6486S	6483S	6486S
RE73-07-76503	73-27296	0–0.5	Qbt 3	6948S	—	6949S	6949S	—	6949S	6949S	6949S

Table 3.1.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	SVOCs	VOCs	Americium-241	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE73-07-76504	73-27296	2–2.5	Qbt 3	6948S	—	6949S	6949S	—	6949S	6949S	6949S
RE73-07-74780	73-27297	0–0.5	Qbt 3	6501S	—	6499S	—	6499S	6499S	6501S	—
RE73-07-74783	73-27298	0–1	Soil	6501S	—	6501S	—	6501S	6501S	6501S	—
RE73-07-76491	73-27298	2–2.5	Qbt 3	6962S	—	6965S	6965S	—	6965S	6965S	6965S
RE73-07-74790	73-27299	0–1.5	Qbt 3	6504S	—	6502S	—	6502S	6502S	6504S	—
RE73-07-74791	73-27299	2–3.5	Qbt 3	6504S	—	6502S	—	6502S	6502S	6504S	—
RE73-07-74793	73-27300	0–1	Qbt 3	6504S	—	6502S	—	6502S	6502S	6504S	—
RE73-07-74794	73-27300	2–3	Qbt 3	6504S	—	6502S	—	6502S	6502S	6504S	—
RE73-07-74796	73-27301	0–2	Qbt 3	6573S	—	6573S	—	6573S	6573S	6573S	—
RE73-07-74797	73-27301	2.5–3.5	Qbt 3	6573S	—	6573S	—	6573S	6573S	6573S	—
RE73-07-74799	73-27302	0–0.5	Qbt 3	6925S	—	6926S	—	—	6926S	6926S	6926S
RE73-07-74800	73-27302	2–2.5	Qbt 3	6925S	—	6926S	—	—	6926S	6926S	6926S
RE73-07-74802	73-27303	0–0.5	Qbt 3	6925S	—	6926S	—	—	6926S	6926S	6926S
RE73-07-74803	73-27303	1–1.5	Qbt 3	6925S	—	6926S	—	—	6926S	6926S	6926S
RE73-07-74805	73-27304	0–0.5	Qbt 3	6967S	—	6969S	—	—	6969S	6969S	6969S
RE73-07-74806	73-27304	2–2.5	Qbt 3	6967S	—	6969S	—	—	6969S	6969S	6969S
RE73-07-74808	73-27305	0–0.5	Qbt 3	6967S	—	6969S	—	—	6969S	6969S	6969S
RE73-07-74811	73-27306	0–0.5	Qbt 3	6967S	—	6969S	—	—	6969S	6969S	6969S
RE73-07-74812	73-27306	2–2.5	Qbt 3	6967S	—	6969S	—	—	6969S	6969S	6969S
RE73-07-74814	73-27307	0–0.5	Soil	6940S	—	6941S	—	—	6941S	6941S	6941S
RE73-07-74815	73-27307	2–2.5	Qbt 3	6940S	—	6941S	—	—	6941S	6941S	6941S
RE73-07-74817	73-27308	0–1	Soil	6573S	—	6573S	—	6573S	6573S	6573S	—
RE73-07-74819	73-27308	4–4.5	Soil	6573S	—	6573S	—	6573S	6573S	6573S	—
RE73-07-74820	73-27309	0–0.5	Qbt 3	6925S	—	6926S	—	—	6926S	6926S	6926S

Table 3.1.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	SVOCs	VOCs	Americium-241	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE73-07-74821	73-27309	2–2.5	Qbt 3	6925S	—	6926S	—	—	6926S	6926S	6926S
RE73-07-74823	73-27310	0–0.5	Qbt 3	6925S	—	6926S	—	—	6926S	6926S	6926S
RE73-07-74824	73-27310	2–2.5	Qbt 3	6925S	—	6926S	—	—	6926S	6926S	6926S
RE73-07-74826	73-27311	0–0.5	Qbt 3	6967S	—	6969S	—	—	6969S	6969S	6969S
RE73-07-74829	73-27312	0–0.5	Qbt 3	6967S	—	6969S	—	—	6969S	6969S	6969S
RE73-07-74830	73-27312	2–2.5	Qbt 3	6967S	—	6969S	—	—	6969S	6969S	6969S
RE73-07-74832	73-27313	0–0.5	Qbt 3	6940S	—	6941S	—	—	6941S	6941S	6941S
RE73-07-74833	73-27313	2–2.5	Qbt 3	6940S	—	6941S	—	—	6941S	6941S	6941S
RE73-07-74835	73-27314	0–0.5	Soil	6940S	—	6941S	—	—	6941S	6941S	6941S
RE73-07-74838	73-27315	0–0.25	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74841	73-27316	0–1	Soil	6511S	—	6511S	—	6511S	6511S	6511S	6511S
RE73-07-74842	73-27316	1–2	Qbt 3	6511S	—	6511S	—	6511S	6511S	6511S	6511S
RE73-07-74850	73-27319	0–0.5	Qbt 3	6983S	—	6983S	—	—	6983S	6983S	6983S
RE73-07-74851	73-27319	2–2.5	Qbt 3	6983S	—	6983S	—	—	6983S	6983S	6983S
RE73-07-76473	73-27678	0–0.5	Soil	6948S	—	6949S	6949S	—	6949S	6949S	6949S
RE73-07-76474	73-27678	3.5–4	Qbt 3	6948S	—	6949S	6949S	—	6949S	6949S	6949S
RE73-07-76475	73-27678	5.5–6	Qbt 3	6948S	—	6949S	6949S	—	6949S	6949S	6949S
RE73-07-76476	73-27679	0–0.5	Qbt 3	6962S	—	6965S	6965S	—	6965S	6965S	6965S
RE73-07-76477	73-27679	2–2.5	Qbt 3	6962S	—	6965S	6965S	—	6965S	6965S	6965S
RE73-07-76479	73-27680	0–0.5	Qbt 3	6962S	—	6965S	6965S	—	6965S	6965S	6965S
RE73-07-76480	73-27680	2–2.5	Qbt 3	6962S	—	6965S	6965S	—	6965S	6965S	6965S
RE73-07-76482	73-27681	0–0.5	Qbt 3	6962S	—	6965S	6965S	—	6965S	6965S	6965S
RE73-07-76483	73-27681	2–2.5	Qbt 3	6962S	—	6965S	6965S	—	6965S	6965S	6965S

[a] — = Analysis not requested.

[b] Request numbers.

Table 3.2.1-1
Summary of Samples Collected and Analyses Requested at AOC 73-003

Sample ID	Location ID	Depth (ft)	Media	Anions	Cyanide	TAL Metals	Perchlorate	PCBs	Pesticides	SVOCs
RE73-99-0097	73-10104	2.8–3.3	Fill	—[a]	—	5268R[b]	—	5267R	5267R	5267R
RE73-99-0098	73-10104	5.5–6	Fill	—	—	5268R	—	5267R	5267R	5267R
RE73-99-0100	73-10105	5–5.5	Soil	—	—	5284R	—	5283R	5283R	5283R
RE73-99-0101	73-10105	7–7.5	Soil	—	—	5284R	—	5283R	5283R	5283R
RE73-99-0102	73-10106	4.8–5.3	Fill	—	—	5284R	—	5283R	5283R	5283R
RE73-99-0103	73-10106	6–6.4	Qbt 3	—	—	5284R	—	5283R	5283R	5283R
RE73-99-0104	73-10107	6–6.5	Fill	—	—	5284R	—	5283R	5283R	5283R
RE73-99-0105	73-10107	8–8.5	Qbt 3	—	—	5284R	—	5283R	5283R	5283R
RE73-06-67551	73-25534	3–4	Fill	4791S	4791S	4791S	4791S	4790S	4790S	4790S
RE73-06-67552	73-25534	5–6	Fill	4791S	4791S	4791S	4791S	4790S	4790S	4790S
RE73-06-67553	73-25534	7–8	Qbt 3	4791S	4791S	4791S	4791S	4790S	4790S	4790S
RE73-06-67554	73-25535	3–4	Fill	4791S	4791S	4791S	4791S	4790S	4790S	4790S
RE73-06-67555	73-25535	5–6	Fill	4791S	4791S	4791S	4791S	4790S	4790S	4790S
RE73-06-67556	73-25535	7–8	Qbt 3	4791S	4791S	4791S	4791S	4790S	4790S	4790S
RE73-06-67558	73-25536	5–6	Fill	4791S	4791S	4791S	4791S	4790S	4790S	4790S
RE73-06-67559	73-25536	7–8	Qbt 3	4791S	4791S	4791S	4791S	4790S	4790S	4790S
RE73-06-67562	73-25537	7–8	Qbt 3	4791S	4791S	4791S	4791S	4790S	4790S	4790S
RE73-06-67564	73-25538	2–3	Fill	4791S	4791S	4791S	4791S	4790S	4790S	4790S
RE73-06-67565	73-25538	4.5–6.5	Qbt 3	4791S	4791S	4791S	4791S	4790S	4790S	4790S
RE73-06-67566	73-25539	3–4	Qbt 3	4791S	4791S	4791S	4791S	4790S	4790S	4790S
RE73-06-67567	73-25539	5–6	Qbt 3	4791S	4791S	4791S	4791S	4790S	4790S	4790S
RE73-06-67568	73-25539	7–8	Qbt 3	4791S	4791S	4791S	4791S	4790S	4790S	4790S
RE73-07-74530	73-27233	3–4	Soil	—	—	6452S	—	6451S	6451S	6451S
RE73-07-74531	73-27233	4–5	Qbt 3	—	—	6452S	—	6451S	6451S	6451S
RE73-07-74563	73-27233	6–7	Qbt 3	—	—	6452S	—	6453S	6453S	6453S
RE73-07-74532	73-27234	2–3	Soil	—	—	6452S	—	6451S	6451S	6451S
RE73-07-74533	73-27234	4–5	Qbt 3	6452S	6452S	6452S	6452S	6451S	6451S	6451S
RE73-07-74564	73-27234	6–7	Qbt 3	6452S	6452S	6452S	6452S	6453S	6453S	6453S

Table 3.2.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	VOCs	Gamma Spectroscopy	Americium-241	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE73-99-0097	73-10104	2.8–3.3	Fill	5267R	—	—	—	—	—
RE73-99-0098	73-10104	5.5–6	Fill	5267R	—	—	—	—	—
RE73-99-0100	73-10105	5–5.5	Soil	5283R	—	—	—	—	—
RE73-99-0101	73-10105	7–7.5	Soil	5283R	—	—	—	—	—
RE73-99-0102	73-10106	4.8–5.3	Fill	5283R	—	—	—	—	—
RE73-99-0103	73-10106	6–6.4	Qbt 3	5283R	—	—	—	—	—
RE73-99-0104	73-10107	6–6.5	Fill	5283R	—	—	—	—	—
RE73-99-0105	73-10107	8–8.5	Qbt 3	5283R	—	—	—	—	—
RE73-06-67551	73-25534	3–4	Fill	4790S	4791S	—	—	—	—
RE73-06-67552	73-25534	5–6	Fill	4790S	4791S	—	—	—	—
RE73-06-67553	73-25534	7–8	Qbt 3	4790S	4791S	—	—	—	—
RE73-06-67554	73-25535	3–4	Fill	4790S	4791S	—	—	—	—
RE73-06-67555	73-25535	5–6	Fill	4790S	4791S	—	—	—	—
RE73-06-67556	73-25535	7–8	Qbt 3	4790S	4791S	—	—	—	—
RE73-06-67558	73-25536	5–6	Fill	4790S	4791S	—	—	—	—
RE73-06-67559	73-25536	7–8	Qbt 3	4790S	4791S	—	—	—	—
RE73-06-67562	73-25537	7–8	Qbt 3	4790S	4791S	—	—	—	—
RE73-06-67564	73-25538	2–3	Fill	4790S	4791S	—	—	—	—
RE73-06-67565	73-25538	4.5–6.5	Qbt 3	4790S	4791S	—	—	—	—
RE73-06-67566	73-25539	3–4	Qbt 3	4790S	4791S	—	—	—	—
RE73-06-67567	73-25539	5–6	Qbt 3	4790S	4791S	—	—	—	—
RE73-06-67568	73-25539	7–8	Qbt 3	4790S	4791S	—	—	—	—
RE73-07-74530	73-27233	3–4	Soil	6451S	6454S	6454S	6454S	6454S	6454S
RE73-07-74531	73-27233	4–5	Qbt 3	6451S	6454S	6454S	6454S	6454S	6454S
RE73-07-74563	73-27233	6–7	Qbt 3	6453S	6454S	6454S	6454S	6454S	6454S
RE73-07-74532	73-27234	2–3	Soil	6451S	6454S	6454S	6454S	6454S	6454S
RE73-07-74533	73-27234	4–5	Qbt 3	6451S	6454S	6454S	6454S	6454S	6454S
RE73-07-74564	73-27234	6–7	Qbt 3	6453S	6454S	6454S	6454S	6454S	6454S

[a] — = Analysis not requested.

[b] Request numbers.

Table 3.3.1-1
Summary of Samples Collected and Analyses Requested at SWMU 73-004(a)

Sample ID	Location ID	Depth (ft)	Media	Anionss	Cyanide	TAL Metals	Perchlorate	Dioxins and Furans	Explosive Compounds
0173-96-0231	73-02207	3.5–3.8	Soil	—[a]	—	2384[b]	—	—	—
RE73-99-0094	73-02207	5.5–6	Qbt 3	—	—	5268R	—	—	—
0173-96-0503	73-02328	9–10	Fill	—	—	2569	—	—	—
RE73-99-0096	73-10095	3.5–4	Soil	—	—	5268R	—	—	—
RE73-99-0136	73-10095	6–6.5	Qbt 3	—	—	5612R	—	—	—
RE73-99-0134	73-10121	3–4	Soil	—	—	5612R	—	—	—
RE73-99-0135	73-10121	6.5–7	Qbt 3	—	—	5612R	—	—	—
RE73-06-67593	73-25548	0–1	Fill	4831S	4831S	4831S	4831S	4827S	4830S
RE73-06-67594	73-25548	6–7	Fill	4831S	4831S	4831S	4831S	4827S	4830S
RE73-06-67595	73-25548	10.5–11.5	Qbt 3	4831S	4831S	4831S	4831S	4827S	4830S
RE73-06-67597	73-25549	0.5–1	Fill	4873S	4873S	4873S	4873S	4871S	4872S
RE73-06-67598	73-25549	3–4	Qbt 3	4831S	4831S	4831S	4831S	4827S	4830S
RE73-06-67620	73-25557	0–1	Fill	4873S	4873S	4873S	4873S	4871S	4872S
RE73-06-67621	73-25557	2–3	Fill	4873S	4873S	4873S	4873S	4871S	4872S

Table 3.3.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	PCBs	Pesticides	SVOCs	VOCs	Gamma Spectroscopy	Tritium
0173-96-0231	73-02207	3.5–3.8	Soil	2385	2385	2385	2385	—	2389
RE73-99-0094	73-02207	5.5–6	Qbt 3	5267R	5267R	5267R	5267R	—	—
0173-96-0503	73-02328	9–10	Fill	2568	2568	2568	2568	—	—
RE73-99-0096	73-10095	3.5–4	Soil	5267R	5267R	5267R	5267R	—	—
RE73-99-0136	73-10095	6–6.5	Qbt 3	5611R	5611R	—	—	—	—
RE73-99-0134	73-10121	3–4	Soil	5611R	5611R	—	—	—	—
RE73-99-0135	73-10121	6.5–7	Qbt 3	5611R	5611R	—	—	—	—
RE73-06-67593	73-25548	0–1	Fill	4830S	4830S	4830S	4830S	4831S	—
RE73-06-67594	73-25548	6–7	Fill	4830S	4830S	4830S	4830S	4831S	—
RE73-06-67595	73-25548	10.5–11.5	Qbt 3	4830S	4830S	4830S	4830S	4831S	—
RE73-06-67597	73-25549	0.5–1	Fill	4872S	4872S	4872S	4872S	4873S	—
RE73-06-67598	73-25549	3–4	Qbt 3	4830S	4830S	4830S	4830S	4831S	—
RE73-06-67620	73-25557	0–1	Fill	4872S	4872S	4872S	4872S	4873S	—
RE73-06-67621	73-25557	2–3	Fill	4872S	4872S	4872S	4872S	4873S	—

[a] — = Analysis not requested.

[b] Request numbers.

Table 3.4.1-1
Summary of Samples Collected and Analyses Requested at SWMU 73-004(b)

Sample ID	Location ID	Depth (ft)	Media	Anions	Cyanide	TAL Metals	Perchlorate	Explosive Compounds	PCBs
0173-96-0243	73-02211	7.2–7.4	Qbt 3	—[a]	—	2390[b]	—	—	—
RE73-99-0088	73-02211	11.5–12.5	Qbt 3	—	—	5268R	—	—	5267R
0173-96-0249	73-02213	4.2–4.5	Soil	—	—	2390	—	—	—
RE73-99-0092	73-02213	6.5–7.5	Qbt 3	—	—	5268R	—	—	5267R
0173-96-0246	73-02216	2.2–2.5	Soil	—	—	2488	—	—	2487
RE73-99-0091	73-02216	4–4.5	Qbt 3	—	—	5268R	—	—	5267R
0173-96-0501	73-02326	14–15	Fill	—	—	2569	—	—	2568
0173-96-0502	73-02327	14–15	Fill	—	—	2569	—	—	2568
0173-96-0504	73-02329	3–4	Fill	—	—	—	—	—	—
0173-96-0505	73-02329	7–7.5	Fill	—	—	—	—	—	—
RE73-99-0093	73-10098	7.5–7.75	Fill	—	—	5268R	—	—	5267R
RE73-99-0087	73-10098	12.5–13.5	Fill	—	—	5268R	—	—	5267R
RE73-99-0089	73-10099	7.5–8.5	Fill	—	—	5268R	—	—	5267R
RE73-99-0090	73-10099	10–10.5	Qbt 3	—	—	5268R	—	—	5267R
RE73-07-76497	73-10100	0–0.5	Qbt 3	—	—	—	—	—	6985S
RE73-07-76498	73-10100	2–2.5	Qbt 3	—	—	—	—	—	6985S
RE73-07-76494	73-10101	0–0.5	Qbt 3	—	—	—	—	—	6985S
RE73-07-76495	73-10101	2–2.5	Qbt 3	—	—	—	—	—	6985S
RE73-07-76500	73-10102	0–0.5	Qbt 3	—	—	—	—	—	6985S
RE73-07-76501	73-10102	2–2.5	Qbt 3	—	—	—	—	—	6985S
RE73-07-74847	73-10103	0–0.5	Soil	—	—	—	—	—	6983S
RE73-07-74848	73-10103	2–2.5	Qbt 3	—	—	—	—	—	6983S
RE73-06-67569	73-25540	8–9	Fill	4791S	4791S	4791S	4791S	—	4790S
RE73-06-67570	73-25540	13–14	Fill	4824S	4824S	4824S	4824S	—	4823S
RE73-06-67571	73-25540	17–18	Qbt 3	4824S	4824S	4824S	4824S	—	4823S
RE73-06-67572	73-25541	2–3	Fill	4824S	4824S	4824S	4824S	—	4823S
RE73-06-67573	73-25541	4–5	Fill	4824S	4824S	4824S	4824S	—	4823S
RE73-06-67574	73-25541	7–8	Qbt 3	4824S	4824S	4824S	4824S	—	4823S
RE73-06-67575	73-25542	2–3	Fill	4824S	4824S	4824S	4824S	—	4823S
RE73-06-67576	73-25542	3.5–4.5	Fill	4824S	4824S	4824S	4824S	—	4823S
RE73-06-67577	73-25542	6–8	Qbt 3	4824S	4824S	4824S	4824S	—	4823S
RE73-06-67578	73-25543	2–3	Fill	4824S	4824S	4824S	4824S	—	4823S
RE73-06-67579	73-25543	4–5	Fill	4824S	4824S	4824S	4824S	—	4823S

Table 3.4.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Anions	Cyanide	TAL Metals	Perchlorate	Explosive Compounds	PCBs
RE73-06-67580	73-25543	7–8	Qbt 3	4824S	4824S	4824S	4824S	—	4823S
RE73-06-67581	73-25544	3–4	Fill	4824S	4824S	4824S	4824S	—	4823S
RE73-06-67582	73-25544	6.5–7.5	Fill	4824S	4824S	4824S	4824S	—	4823S
RE73-06-67583	73-25544	9–10	Qbt 3	4824S	4824S	4824S	4824S	—	4823S
RE73-06-67600	73-25550	1.5–2.5	Fill	4831S	4831S	4831S	4831S	—	4830S
RE73-06-67601	73-25550	6.5–7.5	Qbt 3	4831S	4831S	4831S	4831S	4830S	4830S
RE73-06-67603	73-25551	0.5–2.5	Fill	4831S	4831S	4831S	4831S	—	4830S
RE73-06-67604	73-25551	5.5–7.5	Qbt 3	4831S	4831S	4831S	4831S	—	4830S
RE73-06-67606	73-25552	1.5–2.5	Fill	4831S	4831S	4831S	4831S	—	4830S
RE73-06-67607	73-25552	6.5–7.5	Qbt 3	4831S	4831S	4831S	4831S	—	4830S
RE73-06-67608	73-25553	0–1	Soil	4829S	4829S	4829S	4829S	—	4828S
RE73-06-67609	73-25553	3–4	Soil	4829S	4829S	4829S	4829S	—	4828S
RE73-07-74566	73-25554	2.5–3.5	Qbt 3	—	—	6427S	—	—	6426S
RE73-06-67614	73-25555	0–1	Soil	4829S	4829S	4829S	4829S	—	4828S
RE73-06-67615	73-25555	2–3	Soil	4829S	4829S	4829S	4829S	—	4828S
RE73-07-74540	73-25555	3.5–4.5	Qbt 3	—	—	6427S	—	—	6426S
RE73-06-67617	73-25556	0–1	Soil	4829S	4829S	4829S	4829S	—	4828S
RE73-06-67618	73-25556	1.5–2.5	Soil	4829S	4829S	4829S	4829S	—	4828S
RE73-06-67629	73-25560	0–1	Soil	4873S	4873S	4873S	4873S	—	4872S
RE73-06-67630	73-25560	1.5–2	Soil	4873S	4873S	4873S	4873S	—	4872S
RE73-06-67631	73-25560	2–2.5	Qbt 3	4873S	4873S	4873S	4873S	—	4872S
RE73-07-74534	73-27235	0–1	Soil	—	—	6427S	—	—	6426S
RE73-07-74535	73-27235	2–3	Qbt 3	—	—	6427S	—	—	6426S
RE73-07-74537	73-27236	0–1	Soil	—	—	6427S	—	—	6426S
RE73-07-74538	73-27236	1–2	Soil	—	—	6427S	—	—	6426S
RE73-07-74539	73-27236	3–4	Qbt 3	—	—	6427S	—	—	6426S
RE73-07-74541	73-27237	3–3.5	Soil	—	—	6452S	—	—	6451S
RE73-07-74542	73-27237	4–5	Qbt 3	—	—	6452S	—	—	6451S
RE73-07-74543	73-27237	6–7	Qbt 3	—	—	6452S	—	—	6451S
RE73-07-74544	73-27238	3–4	Soil	—	—	6452S	—	—	6451S
RE73-07-74545	73-27238	4.5–5	Qbt 3	—	—	6452S	—	—	6451S
RE73-07-74546	73-27238	6.5–7	Qbt 3	—	—	6452S	—	—	6451S

Table 3.4.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Pesticides	Pesticides/PCBs	SVOCs	VOCs	Gamma Spectroscopy	Tritium
0173-96-0243	73-02211	7.2–7.4	Qbt 3	—	2391	2391	2391	—	2392
RE73-99-0088	73-02211	11.5–12.5	Qbt 3	5267R	—	5267R	—	—	—
0173-96-0249	73-02213	4.2–4.5	Soil	—	2391	2391	2391	—	2392
RE73-99-0092	73-02213	6.5–7.5	Qbt 3	5267R	—	5267R	—	—	—
0173-96-0246	73-02216	2.2–2.5	Soil	2487	—	2487	2487	—	2490
RE73-99-0091	73-02216	4–4.5	Qbt 3	5267R	—	5267R	—	—	—
0173-96-0501	73-02326	14–15	Fill	2568	—	2568	2568	—	—
0173-96-0502	73-02327	14–15	Fill	2568	—	2568	2568	—	—
0173-96-0504	73-02329	3–4	Fill	—	2611	—	—	—	—
0173-96-0505	73-02329	7–7.5	Fill	—	2611	—	—	—	—
RE73-99-0093	73-10098	7.5–7.75	Fill	5267R	—	5267R	—	—	—
RE73-99-0087	73-10098	12.5–13.5	Fill	5267R	—	5267R	—	—	—
RE73-99-0089	73-10099	7.5–8.5	Fill	5267R	—	5267R	—	—	—
RE73-99-0090	73-10099	10–10.5	Qbt 3	5267R	—	5267R	—	—	—
RE73-07-76497	73-10100	0–0.5	Qbt 3	—	—	—	—	—	—
RE73-07-76498	73-10100	2–2.5	Qbt 3	—	—	—	—	—	—
RE73-07-76494	73-10101	0–0.5	Qbt 3	—	—	—	—	—	—
RE73-07-76495	73-10101	2–2.5	Qbt 3	—	—	—	—	—	—
RE73-07-76500	73-10102	0–0.5	Qbt 3	—	—	—	—	—	—
RE73-07-76501	73-10102	2–2.5	Qbt 3	—	—	—	—	—	—
RE73-07-74847	73-10103	0–0.5	Soil	—	—	—	—	—	—
RE73-07-74848	73-10103	2–2.5	Qbt 3	—	—	—	—	—	—
RE73-06-67569	73-25540	8–9	Fill	4790S	—	4790S	4790S	4791S	—
RE73-06-67570	73-25540	13–14	Fill	4823S	—	4823S	4823S	4824S	—
RE73-06-67571	73-25540	17–18	Qbt 3	4823S	—	4823S	4823S	4824S	—
RE73-06-67572	73-25541	2–3	Fill	4823S	—	4823S	4823S	4824S	—
RE73-06-67573	73-25541	4–5	Fill	4823S	—	4823S	4823S	4824S	—
RE73-06-67574	73-25541	7–8	Qbt 3	4823S	—	4823S	4823S	4824S	—
RE73-06-67575	73-25542	2–3	Fill	4823S	—	4823S	4823S	4824S	—
RE73-06-67576	73-25542	3.5–4.5	Fill	4823S	—	4823S	4823S	4824S	—
RE73-06-67577	73-25542	6–8	Qbt 3	4823S	—	4823S	4823S	4824S	—
RE73-06-67578	73-25543	2–3	Fill	4823S	—	4823S	4823S	4824S	—
RE73-06-67579	73-25543	4–5	Fill	4823S	—	4823S	4823S	4824S	—
RE73-06-67580	73-25543	7–8	Qbt 3	4823S	—	4823S	4823S	4824S	—
RE73-06-67581	73-25544	3–4	Fill	4823S	—	4823S	4823S	4824S	—

Table 3.4.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Pesticides	Pesticides/PCBs	SVOCs	VOCs	Gamma Spectroscopy	Tritium
RE73-06-67582	73-25544	6.5–7.5	Fill	4823S	—	4823S	4823S	4824S	—
RE73-06-67583	73-25544	9–10	Qbt 3	4823S	—	4823S	4823S	4824S	—
RE73-06-67600	73-25550	1.5–2.5	Fill	4830S	—	4830S	4830S	4831S	—
RE73-06-67601	73-25550	6.5–7.5	Qbt 3	4830S	—	4830S	4830S	4831S	—
RE73-06-67603	73-25551	0.5–2.5	Fill	4830S	—	4830S	4830S	4831S	—
RE73-06-67604	73-25551	5.5–7.5	Qbt 3	4830S	—	4830S	4830S	4831S	—
RE73-06-67606	73-25552	1.5–2.5	Fill	4830S	—	4830S	4830S	4831S	—
RE73-06-67607	73-25552	6.5–7.5	Qbt 3	4830S	—	4830S	4830S	4831S	—
RE73-06-67608	73-25553	0–1	Soil	4828S	—	4828S	4828S	4829S	—
RE73-06-67609	73-25553	3–4	Soil	4828S	—	4828S	4828S	4829S	—
RE73-07-74566	73-25554	2.5–3.5	Qbt 3	—	—	—	—	—	—
RE73-06-67614	73-25555	0–1	Soil	4828S	—	4828S	4828S	4829S	—
RE73-06-67615	73-25555	2–3	Soil	4828S	—	4828S	4828S	4829S	—
RE73-07-74540	73-25555	3.5–4.5	Qbt 3	—	—	—	—	—	—
RE73-06-67617	73-25556	0–1	Soil	4828S	—	4828S	4828S	4829S	—
RE73-06-67618	73-25556	1.5–2.5	Soil	4828S	—	4828S	4828S	4829S	—
RE73-06-67629	73-25560	0–1	Soil	4872S	—	4872S	4872S	4873S	—
RE73-06-67630	73-25560	1.5–2	Soil	4872S	—	4872S	4872S	4873S	—
RE73-06-67631	73-25560	2–2.5	Qbt 3	4872S	—	4872S	4872S	4873S	—
RE73-07-74534	73-27235	0–1	Soil	—	—	—	—	—	—
RE73-07-74535	73-27235	2–3	Qbt 3	—	—	—	—	—	—
RE73-07-74537	73-27236	0–1	Soil	—	—	—	—	—	—
RE73-07-74538	73-27236	1–2	Soil	—	—	—	—	—	—
RE73-07-74539	73-27236	3–4	Qbt 3	—	—	—	—	—	—
RE73-07-74541	73-27237	3–3.5	Soil	—	—	—	—	—	—
RE73-07-74542	73-27237	4–5	Qbt 3	—	—	—	—	—	—
RE73-07-74543	73-27237	6–7	Qbt 3	—	—	—	—	—	—
RE73-07-74544	73-27238	3–4	Soil	—	—	—	—	—	—
RE73-07-74545	73-27238	4.5–5	Qbt 3	—	—	—	—	—	—
RE73-07-74546	73-27238	6.5–7	Qbt 3	—	—	—	—	—	—

[a] — = Analysis not requested.

[b] Request numbers.

Table 3.5.1-1
Summary of Samples Collected and Analyses Requested at SWMU 73-006

Sample ID	Location ID	Depth (ft)	Media	Anions	Cyanide	TAL Metals	Perchlorate	Dioxins and Furans	Explosive Compounds	PCBs
0173-97-0202	73-02442	2.8–3	Fill	—[a]	—	3465R[b]	—	3464R	—	—
RE73-99-0108	73-02442	5–5.5	Qbt 3	—	—	5284R	—	—	—	5283R
0173-97-0203	73-02443	3.2–3.4	Fill	—	—	3465R	—	3464R	—	—
RE73-99-0107	73-02443	5–5.5	Qbt 3	—	—	5284R	—	—	—	5283R
0173-97-0204	73-02444	3–3.2	Fill	—	—	3465R	—	3464R	—	—
RE73-99-0106	73-02444	5.5–6	Qbt 3	—	—	5284R	—	—	—	5283R
RE73-99-0109	73-10096	4.3–4.8	Qbt 3	—	—	5284R	—	—	—	5283R
RE73-99-0133	73-10096	7–7.5	Qbt 3	—	—	—	—	—	—	—
RE73-99-0110	73-10097	5–5.5	Fill	—	—	5284R	—	—	—	5283R
RE73-99-0132	73-10097	7.5–8	Qbt 3	—	—	5612R	—	—	—	—
RE73-06-67585	73-25545	1.5–2.5	Fill	4824S	4824S	4824S	4824S	4823S	4823S	4823S
RE73-06-67586	73-25545	4–5	Qbt 3	4824S	4824S	4824S	4824S	4823S	4823S	4823S
RE73-06-67588	73-25546	2–2.5	Fill	4873S	4873S	4873S	4873S	4871S	4872S	4872S
RE73-06-67589	73-25546	4–5	Qbt 3	4824S	4824S	4824S	4824S	4823S	4823S	4823S
RE73-06-67591	73-25547	3–5	Fill	4831S	4831S	4831S	4831S	4827S	4830S	4830S
RE73-06-67592	73-25547	5.5–7.5	Qbt 3	4831S	4831S	4831S	4831S	4827S	4830S	4830S
RE73-07-74550	73-25558	0–0.5	Soil	—	—	6588S	—	6590S	—	—
RE73-07-74551	73-25558	2–3	Qbt 3	—	—	6588S	—	6590S	—	—
RE73-06-67626	73-25559	0–1	Fill	4873S	4873S	4873S	4873S	4871S	4872S	4872S
RE73-07-74552	73-27240	0–0.5	Soil	—	—	6588S	—	6590S	—	—
RE73-07-74553	73-27240	2–2.5	Qbt 3	—	—	6588S	—	6590S	—	—
RE73-07-74554	73-27241	0–0.5	Qbt 3	—	—	6588S	—	6590S	—	—
RE73-07-74555	73-27241	1.75–2.5	Qbt 3	—	—	6588S	—	6590S	—	—

Table 3.5.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Pesticides	Pesticides/ PCBs	SVOCs	VOCs	Gamma Spectroscopy	Isotopic Plutonium	Isotopic Uranium
0173-97-0202	73-02442	2.8–3	Fill	—	3464R	3464R	3464R	—	—	—
RE73-99-0108	73-02442	5–5.5	Qbt 3	5283R	—	5283R	5283R	5285R	5285R	5285R
0173-97-0203	73-02443	3.2–3.4	Fill	—	3464R	3464R	3464R	—	—	—
RE73-99-0107	73-02443	5–5.5	Qbt 3	5283R	—	5283R	5283R	5285R	5285R	5285R
0173-97-0204	73-02444	3–3.2	Fill	—	3464R	3464R	3464R	—	—	—
RE73-99-0106	73-02444	5.5–6	Qbt 3	5283R	—	5283R	5283R	5285R	5285R	5285R
RE73-99-0109	73-10096	4.3–4.8	Qbt 3	5283R	—	5283R	5283R	5285R	5285R	5285R
RE73-99-0133	73-10096	7–7.5	Qbt 3	5611R	—	—	—	—	—	—
RE73-99-0110	73-10097	5–5.5	Fill	5283R	—	5283R	5283R	5285R	5285R	5285R
RE73-99-0132	73-10097	7.5–8	Qbt 3	—	—	—	—	—	—	—
RE73-06-67585	73-25545	1.5–2.5	Fill	4823S	—	4823S	4823S	4824S	—	—
RE73-06-67586	73-25545	4–5	Qbt 3	4823S	—	4823S	4823S	4824S	—	—
RE73-06-67588	73-25546	2–2.5	Fill	4872S	—	4872S	4872S	4873S	—	—
RE73-06-67589	73-25546	4–5	Qbt 3	4823S	—	4823S	4823S	4824S	—	—
RE73-06-67591	73-25547	3–5	Fill	4830S	—	4830S	4830S	4831S	—	—
RE73-06-67592	73-25547	5.5–7.5	Qbt 3	4830S	—	4830S	4830S	4831S	—	—
RE73-07-74550	73-25558	0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-74551	73-25558	2–3	Qbt 3	—	—	—	—	—	—	—
RE73-06-67626	73-25559	0–1	Fill	4872S	—	4872S	4872S	4873S	—	—
RE73-07-74552	73-27240	0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-74553	73-27240	2–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74554	73-27241	0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74555	73-27241	1.75–2.5	Qbt 3	—	—	—	—	—	—	—

[a] — = Analysis not requested.

[b] Request numbers.

Table 4.3-1
Sample Survey Coordinates

Location ID	Location Type Code	X Coordinate (ft)	Y Coordinate (ft)
73-02207	GENERIC	1632806.35	1776420.69
73-02211	GENERIC	na[a]	na
73-02213	GENERIC	1632698.67	1776393.04
73-02216	GENERIC	1632688.07	1776422.64
73-02253	GENERIC	1632988.09	1776645.19
73-02254	GENERIC	1632892.59	1776710.33
73-02255	GENERIC	1632767.73	1776749.36
73-02326	GENERIC	1632712.59	1776358.05
73-02327	GENERIC	1632713.67	1776355.63
73-02328	GENERIC	1632802	1776401
73-02329	GENERIC	1632719.709	1776343.81
73-02442	GENERIC	1632812.911	1776412.369
73-02443	GENERIC	1632810.18	1776398.638
73-02444	GENERIC	1632809.01	1776392.753
73-02451	GENERIC	1633034.664	1777356.781
73-02452	GENERIC	1633015.603	1777248.712
73-02453	GENERIC	1633124.509	1777227.915
73-02458	GENERIC	1632932.934	1776635.408
73-10095	GENERIC	1632812.893	1776406.107
73-10096	GENERIC	1632856.27	1776402.063
73-10097	GENERIC	1632858.493	1776411.684
73-10098	GENERIC	1632710.04	1776362.829
73-10099	GENERIC	1632737.096	1776310.842
73-10100	BH[b]	1632686.493	1776442.199
73-10101	BH	1632691.195	1776441.236
73-10102	BH	1632680.909	1776443.125
73-10103	GENERIC	1632685.175	1776457.94
73-10104	GENERIC	1632788.344	1776252.838
73-10105	GENERIC	1632767.574	1776256.272
73-10106	GENERIC	1632759.948	1776263.341
73-10107	GENERIC	1632758.212	1776277.643
73-10121	GENERIC	1632808.011	1776426.111
73-25534	BH	1632806.015	1776263.813
73-25535	BH	1632800.202	1776231.74
73-25536	BH	1632788.809	1776251.824
73-25537	BH	1632767.074	1776255.144
73-25538	BH	1632747.855	1776241.197

Table 4.3-1 (continued)

Location ID	Location Type Code	X Coordinate (ft)	Y Coordinate (ft)
73-25539	BH	1632747.127	1776281.273
73-25540	BH	1632712.301	1776356.615
73-25541	BH	1632693.17	1776365.98
73-25542	BH	1632700.664	1776348.34
73-25543	BH	1632726.802	1776360.71
73-25544	BH	1632732.95	1776346.05
73-25545	BH	1632869.124	1776403.842
73-25546	BH	1632856.579	1776402.024
73-25547	BH	1632810.01	1776397.873
73-25548	BH	1632802.484	1776400.932
73-25549	BH	1632795.119	1776413.188
73-25550	BH	1632714.87	1776397.316
73-25551	BH	1632696.851	1776395.031
73-25552	BH	1632683.469	1776393.382
73-25553	BH	1632689.693	1776422.628
73-25554	BH	1632685.099	1776452.06
73-25555	BH	1632691.24	1776441.323
73-25556	BH	1632685.295	1776458.217
73-25557	BH	1632792.998	1776392.803
73-25558	BH	1632824.72	1776396.626
73-25559	BH	1632838.299	1776394.764
73-25560	BH	1632665.308	1776448.938
73-25561	BH	1632781.622	1776436.077
73-25562	BH	1632759.88	1776472.509
73-25563	BH	1632767.225	1776501.596
73-25564	BH	1632774.57	1776530.683
73-25565	BH	1632897.97	1776406.698
73-25566	BH	1632905.315	1776435.785
73-25567	BH	1632941.747	1776457.527
73-25568	BH	1632949.092	1776486.614
73-25569	BH	1632796.605	1776617.944
73-25570	BH	1632833.037	1776639.686
73-25571	BH	1632862.124	1776632.341
73-25572	BH	1632891.211	1776624.996
73-25573	BH	1632920.298	1776617.651
73-25574	BH	1632949.385	1776610.306
73-25575	BH	1632971.127	1776573.874
73-25593	BH	1632973.929	1776554.741
73-25594	BH	1632983.154	1776654.024

Table 4.3-1 (continued)

Location ID	Location Type Code	X Coordinate (ft)	Y Coordinate (ft)
73-25595	BH	1632999.155	1776718.025
73-25596	BH	1633021.962	1776796.59
73-25597	BH	1633047.992	1776893.546
73-25598	BH	1633043.352	1776985.957
73-25599	BH	1633068.298	1777080.163
73-25600	BH	1633109.522	1777170.294
73-25601	BH	1633121.957	1777239.81
73-25604	BH	1632779.293	1776667.717
73-25605	BH	1632769.758	1776759.329
73-25606	BH	1632747.299	1776851.036
73-25607	BH	1632779.395	1776946.383
73-25608	BH	1632810.422	1777029.763
73-25609	BH	1632838.515	1777128.274
73-25610	BH	1632840.294	1777217.87
73-25611	BH	1632892.07	1777297.472
73-25612	BH	1632890.622	1776698.456
73-25613	BH	1632881.104	1776784.741
73-25614	BH	1632902.945	1776865.322
73-25615	BH	1632944.05	1776937.78
73-25616	BH	1632958.79	1777025.97
73-25617	BH	1633000.395	1777119.058
73-25618	BH	1633012.087	1777215.809
73-25619	BH	1633013.898	1777310.032
73-25620	BH	1632925.456	1777370.166
73-27233	BH	1632738.949	1776268.631
73-27234	BH	1632719.517	1776273.737
73-27235	BH	1632734.206	1776458.912
73-27236	BH	1632713.414	1776472.94
73-27237	BH	1632680.156	1776366.146
73-27238	BH	1632679.177	1776351.505
73-27240	BH	1632837.357	1776385.267
73-27241	BH	1632820.43	1776398.45
73-27279	BH	1632818.054	1776457.819
73-27280	BH	1632788.967	1776465.164
73-27281	BH	1632810.709	1776428.732
73-27282	BH	1632934.402	1776428.44
73-27283	BH	1632752.828	1776567.115
73-27284	BH	1632760.173	1776596.202
73-27285	BH	1632876.228	1776443.129

Table 4.3-1 (continued)

Location ID	Location Type Code	X Coordinate (ft)	Y Coordinate (ft)
73-27286	BH	1632847.141	1776450.474
73-27287	BH	1632796.312	1776494.251
73-27288	BH	1632825.399	1776486.906
73-27289	BH	1632854.486	1776479.561
73-27290	BH	1632883.573	1776472.216
73-27291	BH	1632912.66	1776464.871
73-27292	BH	1632803.657	1776523.338
73-27293	BH	1632832.744	1776515.993
73-27294	BH	1632861.831	1776508.648
73-27295	BH	1632890.918	1776501.303
73-27296	BH	1632920.005	1776493.958
73-27297	BH	1632781.915	1776559.77
73-27298	BH	1632811.002	1776552.425
73-27299	BH	1632840.089	1776545.08
73-27300	BH	1632869.176	1776537.735
73-27301	BH	1632898.263	1776530.39
73-27302	BH	1632927.35	1776523.045
73-27303	BH	1632956.437	1776515.7
73-27304	BH	1632789.26	1776588.857
73-27305	BH	1632818.347	1776581.512
73-27306	BH	1632847.434	1776574.167
73-27307	BH	1632876.521	1776566.822
73-27308	BH	1632905.608	1776559.477
73-27309	BH	1632934.695	1776552.132
73-27310	BH	1632963.782	1776544.787
73-27311	BH	1632825.692	1776610.599
73-27312	BH	1632854.779	1776603.254
73-27313	BH	1632883.866	1776595.909
73-27314	BH	1632912.953	1776588.564
73-27315	BH	1632942.04	1776581.219
73-27316	BH	1632839.796	1776421.387
73-27319	BH	1632868.883	1776414.042
73-27678	BH	1632978.472	1776602.961
73-27679	BH	1632869.469	1776661.428
73-27680	BH	1632803.95	1776647.031
73-27681	BH	1632774.863	1776654.376

[a] na = Not available.

[b] BH = Borehole.

Table 7.3.1-1
Summary of COPCs at SWMU 73-002

Inorganic COPCs	Organic COPCs	Radionuclide COPCs
Aluminum	Acenaphthene	Americium-241
Antimony	Anthracene	Cesium-137
Arsenic	Aroclor-1242	Plutonium-238
Barium	Aroclor-1254	Plutonium-239
Cadmium	Aroclor-1260	Strontium-90
Chromium	Benzo(a)anthracene	Tritium
Copper	Benzo(a)pyrene	Uranium-234
Cyanide	Benzo(b)fluoranthene	Uranium-235
Lead	Benzo(g,h,i)perylene	Uranium-238
Mercury	Benzo(k)fluoranthene	
Nickel	Benzoic acid	
Nitrate	Bis(2-ethylhexyl)phthalate	
Perchlorate	alpha-Chlordane	
Selenium	gamma-Chlordane	
Silver	Chloroform	
Thallium	Chrysene	
Zinc	4,4'-DDD	
	4,4'-DDE	
	4,4'-DDT	
	Dieldrin	
	Di-n-butylphthalate	
	4,6-Dinitro-2-methylphenol	
	Di-n-octylphthalate	
	Fluoranthene	
	Fluorene	
	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	
	1,2,3,4,6,7,8-Heptachlorodibenzofuran	
	1,2,3,4,7,8,9-Heptachlorodibenzofuran	
	1,2,3,4,7,8-Hexachlorodibenzodioxin	
	1,2,3,6,7,8-Hexachlorodibenzodioxin	
	1,2,3,7,8,9-Hexachlorodibenzodioxin	
	1,2,3,4,7,8-Hexachlorodibenzofuran	
	1,2,3,6,7,8-Hexachlorodibenzofuran	
	1,2,3,7,8,9-Hexachlorodibenzofuran	
	2,3,4,6,7,8-Hexachlorodibenzofuran	
	Indeno(1,2,3-cd)pyrene	
	2-Methylnaphthalene	

Table 7.3.1-1 (continued)

Inorganic COPCs	Organic COPCs	Radionuclide COPCs
	Naphthalene	
	1,2,3,4,6,7,8,9-Octachlorodibenzodioxin	
	1,2,3,4,6,7,8,9-Octachlorodibenzofuran	
	1,2,3,7,8-Pentachlorodibenzodioxin	
	1,2,3,7,8-Pentachlorodibenzofuran	
	2,3,4,7,8-Pentachlorodibenzofuran	
	Phenanthrene	
	Pyrene	
	2,3,7,8-Tetrachlorodibenzodioxin	
	2,3,7,8-Tetrachlorodibenzofuran	

Table 7.3.1-2
Inorganic Chemicals above BVs at SWMU 73-002

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Cadmium	Calcium	Chromium	Copper
Soil/Fill BV[a]				**29200**	**0.83**	**8.17**	**295**	**0.4**	**6120**	**19.3**	**14.7**
Qbt 2,3,4 BV[a]				**7340**	**0.5**	**2.79**	**46**	**1.63**	**2200**	**7.14**	**4.66**
Residential Soil Screening Level[b]				**77800**	**31.3**	**3.9**	**15600**	**39**	**na**[c]	**2100**[d]	**3130**
0173-96-0302	73-02253	0.0–0.5	Soil	—[e]	10 (UJ)	—	—	0.52 (U)	—	—	—
0173-96-0320	73-02254	0.0–0.5	Soil	—	11 (UJ)	—	—	0.56 (U)	—	—	—
0173-96-0308	73-02255	0.0–0.5	Soil	—	12 (UJ)	—	—	0.62 (U)	—	—	—
0173-97-0312	73-02451	0.5–1.0	Soil	—	—	—	—	—	—	—	—
0173-97-0313	73-02452	0.1–0.5	Soil	—	—	—	—	—	—	—	—
RE73-06-67646	73-25561	1.0–2.0	Soil	—	—	—	—	0.541 (U)	—	—	—
RE73-07-74671	73-25561	3.5–5.0	Soil	—	—	—	—	—	—	19.8	—
RE73-06-67649	73-25562	0.0–0.5	Soil	—	—	—	—	0.54 (U)	—	—	—
RE73-06-67650	73-25562	1.0–2.0	Soil	—	—	—	—	0.545 (U)	—	—	—
RE73-07-74673	73-25562	2.5–4.0	Qbt 3	—	—	—	—	—	—	58.6	—
RE73-06-67652	73-25563	0.0–0.5	Soil	—	—	—	—	0.553 (U)	—	—	—
RE73-06-67653	73-25563	1.0–2.0	Soil	—	—	—	—	0.537 (U)	—	—	—
RE73-07-74675	73-25563	3.0–4.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-76488	73-25564	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74678	73-25564	2.5–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74679	73-25565	0.0–1.0	Soil	—	—	—	—	—	—	—	—
RE73-07-74680	73-25565	3.0–4.0	Soil	—	—	—	—	0.5 (J)	—	—	—
RE73-06-67662	73-25566	1.0–2.0	Soil	—	—	—	—	0.562 (U)	—	—	—
RE73-07-74715	73-25566	2.0–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67664	73-25567	0.0–0.5	Soil	—	—	—	—	0.547 (U)	—	—	—
RE73-06-67665	73-25567	2.0–3.0	Soil	—	—	—	—	0.523 (U)	—	—	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Cadmium	Calcium	Chromium	Copper
Soil/Fill BV[a]				**29200**	**0.83**	**8.17**	**295**	**0.4**	**6120**	**19.3**	**14.7**
Qbt 2,3,4 BV[a]				**7340**	**0.5**	**2.79**	**46**	**1.63**	**2200**	**7.14**	**4.66**
Residential Soil Screening Level[b]				**77800**	**31.3**	**3.9**	**15600**	**39**	**na[c]**	**2100[d]**	**3130**
RE73-07-74683	73-25567	2.5–4.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74685	73-25568	0.0–1.0	Soil	—	—	—	—	0.926	—	—	35.2
RE73-07-74686	73-25568	1.25–2.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74717	73-25568	3.0–4.5	Qbt 3	—	—	—	—	—	—	—	5.33
RE73-06-67671	73-25569	2.0–3.0	Soil	—	—	—	—	0.517 (U)	—	—	—
RE73-07-74688	73-25569	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74689	73-25570	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74690	73-25570	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74692	73-25571	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74693	73-25572	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74694	73-25572	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74695	73-25573	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74696	73-25573	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74697	73-25574	0.0–0.5	Qbt 3	—	—	—	—	—	2940	—	—
RE73-07-74698	73-25574	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74699	73-25575	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74700	73-25575	1.5–2.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67758	73-25593	0.0–0.25	Soil	—	—	—	—	—	—	—	—
RE73-06-67759	73-25594	0.0–0.25	Soil	—	—	—	—	—	—	—	—
RE73-06-67760	73-25595	0.0–0.25	Soil	—	—	—	—	—	—	—	—
RE73-06-67761	73-25596	0.0–0.25	Soil	—	—	—	—	0.522 (U)	—	—	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Cadmium	Calcium	Chromium	Copper
Soil/Fill BV[a]				**29200**	**0.83**	**8.17**	**295**	**0.4**	**6120**	**19.3**	**14.7**
Qbt 2,3,4 BV[a]				**7340**	**0.5**	**2.79**	**46**	**1.63**	**2200**	**7.14**	**4.66**
Residential Soil Screening Level[b]				**77800**	**31.3**	**3.9**	**15600**	**39**	**na[c]**	**2100[d]**	**3130**
RE73-06-67762	73-25597	0.0–0.25	Soil	—	—	—	—	—	—	—	—
RE73-06-67763	73-25598	0.0–0.25	Soil	—	—	—	—	—	—	—	—
RE73-06-67764	73-25599	0.0–0.25	Soil	—	—	—	—	—	—	—	—
RE73-06-67765	73-25600	0.0–0.25	Soil	—	—	—	—	—	—	—	—
RE73-06-67766	73-25601	0.0–0.25	Soil	—	—	—	—	0.534 (U)	—	—	—
RE73-06-67770	73-25605	0.0–0.25	Soil	—	—	—	—	—	—	—	—
RE73-06-67771	73-25606	0.0–0.25	Soil	—	—	—	—	—	—	—	—
RE73-06-67772	73-25607	0.0–0.25	Soil	—	—	—	—	0.638 (U)	—	—	—
RE73-06-67773	73-25608	0.0–0.25	Soil	—	—	—	—	—	—	—	—
RE73-06-67774	73-25609	0.0–0.25	Soil	—	—	—	—	—	—	—	—
RE73-06-67775	73-25610	0.0–0.25	Soil	—	—	—	—	0.613 (U)	—	—	—
RE73-06-67776	73-25611	0.0–0.25	Soil	—	—	—	—	0.557 (U)	—	—	—
RE73-06-67777	73-25612	0.0–0.25	Soil	—	—	—	—	0.536 (U)	—	—	—
RE73-06-67778	73-25613	0.0–0.25	Soil	—	—	—	—	0.595 (U)	—	—	—
RE73-06-67779	73-25614	0.0–0.25	Soil	—	—	—	—	0.636 (U)	6140 (J+)	—	—
RE73-06-67780	73-25615	0.0–0.25	Soil	—	—	—	—	—	—	—	—
RE73-06-67781	73-25616	0.0–0.25	Soil	—	—	—	—	0.553 (U)	—	—	—
RE73-06-67782	73-25617	0.0–0.25	Soil	—	—	—	—	0.609 (U)	—	—	—
RE73-06-67783	73-25618	0.0–0.25	Soil	—	—	—	—	0.721 (U)	—	—	—
RE73-06-67784	73-25619	0.0–0.25	Soil	—	—	—	—	0.589 (U)	—	—	—
RE73-06-67785	73-25620	0.0–0.25	Soil	—	—	—	—	0.606 (U)	—	—	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Cadmium	Calcium	Chromium	Copper
Soil/Fill BV[a]				**29200**	**0.83**	**8.17**	**295**	**0.4**	**6120**	**19.3**	**14.7**
Qbt 2,3,4 BV[a]				**7340**	**0.5**	**2.79**	**46**	**1.63**	**2200**	**7.14**	**4.66**
Residential Soil Screening Level[b]				**77800**	**31.3**	**3.9**	**15600**	**39**	**na[c]**	**2100[d]**	**3130**
RE73-07-74525	73-25597	1.0–2.0	Soil	—	—	—	—	—	—	—	—
RE73-07-74528	73-25612	1.0–2.0	Soil	—	—	—	—	0.534 (U)	—	—	—
RE73-07-74529	73-25614	1.0–2.0	Soil	—	—	—	—	0.522 (U)	—	—	24 (J)
RE73-07-74726	73-27279	0.0–1.0	Soil	—	—	—	—	—	—	9.94	—
RE73-07-74727	73-27279	1.5–2.75	Qbt 3	—	—	—	—	—	—	9.07	14.5 (J)
RE73-07-74728	73-27279	3.5–4.5	Qbt 3	—	—	—	—	—	—	—	39.3 (J)
RE73-07-74729	73-27280	0.0–1.5	Soil	—	—	—	—	1.03	—	15.9	10.2 (J)
RE73-07-74730	73-27280	1.5–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74731	73-27280	3.5–5.0	Qbt 3	—	—	—	—	—	—	—	22.7 (J+)
RE73-07-76485	73-27281	0.0–0.5	Soil	—	—	—	—	5.8	—	16	12.1 (J)
RE73-07-74733	73-27281	1.5–2.5	Qbt 3	—	—	—	154	—	—	17.5	12.3 (J)
RE73-07-74734	73-27281	3.5–4.5	Qbt 3	—	—	—	164	—	—	—	21.8
RE73-07-74735	73-27282	0.0–2.0	Soil	—	—	—	—	0.536 (J)	—	—	—
RE73-07-74736	73-27282	2.5–3.75	Qbt 3	—	—	—	49.6	—	2370	—	—
RE73-07-74737	73-27282	4.0–5.0	Qbt 3	—	—	—	—	—	6070	—	—
RE73-07-74739	73-27283	0.0–1.0	Soil	—	—	—	—	—	—	—	—
RE73-07-74738	73-27283	1.0–2.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74741	73-27284	0.0–2.0	Soil	—	—	—	—	—	—	—	—
RE73-07-74742	73-27284	2.0–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74744	73-27285	0.0–1.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74745	73-27285	1.0–2.5	Qbt 3	—	—	—	—	—	—	—	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Cadmium	Calcium	Chromium	Copper
Soil/Fill BV[a]				**29200**	**0.83**	**8.17**	**295**	**0.4**	**6120**	**19.3**	**14.7**
Qbt 2,3,4 BV[a]				**7340**	**0.5**	**2.79**	**46**	**1.63**	**2200**	**7.14**	**4.66**
Residential Soil Screening Level[b]				**77800**	**31.3**	**3.9**	**15600**	**39**	**na[c]**	**2100[d]**	**3130**
RE73-07-74746	73-27285	3.0–4.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74747	73-27286	0.0–2.0	Soil	—	—	—	—	—	—	8.48	—
RE73-07-74748	73-27286	2.0–3.0	Qbt 3	11200 (J+)	—	—	62.4	—	—	8.78	—
RE73-07-74749	73-27286	3.0–5.0	Qbt 3	13600 (J+)	—	—	46.5	—	—	—	—
RE73-07-74750	73-27287	0.0–1.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74751	73-27287	1.0–2.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74752	73-27287	3.0–4.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74753	73-27288	0.0–1.5	Soil	—	—	—	—	0.53 (U)	—	—	—
RE73-07-74754	73-27288	2.25–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74755	73-27288	4.0–5.5	Qbt 3	—	—	—	—	—	—	—	4.87
RE73-07-74756	73-27289	0.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74757	73-27289	3.0–4.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74759	73-27290	0.0–1.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74760	73-27290	2.0–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74762	73-27291	0.0–2.0	Soil	—	—	—	—	—	—	—	—
RE73-07-74763	73-27291	2.0–3.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74765	73-27292	0.0–1.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74766	73-27292	2.0–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74768	73-27293	0.0–1.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74769	73-27293	1.5–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74770	73-27293	3.0–4.0	Qbt 3	—	—	—	—	—	—	—	16.2

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Cadmium	Calcium	Chromium	Copper
Soil/Fill BV[a]				**29200**	**0.83**	**8.17**	**295**	**0.4**	**6120**	**19.3**	**14.7**
Qbt 2,3,4 BV[a]				**7340**	**0.5**	**2.79**	**46**	**1.63**	**2200**	**7.14**	**4.66**
Residential Soil Screening Level[b]				**77800**	**31.3**	**3.9**	**15600**	**39**	**na**[c]	**2100**[d]	**3130**
RE73-07-74771	73-27294	0.0–1.5	Qbt 3	—	—	5.81	68.1	—	—	—	7.88
RE73-07-74772	73-27294	2.0–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74774	73-27295	0.0–2.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74775	73-27295	2.5–4.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-76503	73-27296	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-76504	73-27296	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	18.1
RE73-07-74780	73-27297	0.0–0.5	Qbt 3	—	—	3.43	66.7	—	—	—	50.4
RE73-07-74783	73-27298	0.0–1.0	Soil	—	—	—	—	—	—	—	13.6
RE73-07-74790	73-27299	0.0–1.5	Qbt 3	—	—	5.05	55.8	—	—	—	27.8
RE73-07-74791	73-27299	2.0–3.5	Qbt 3	—	—	3.96	80.6	—	—	—	—
RE73-07-74793	73-27300	0.0–1.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74794	73-27300	2.0–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74796	73-27301	0.0–2.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74797	73-27301	2.5–3.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74799	73-27302	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74800	73-27302	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	8.6
RE73-07-74802	73-27303	0.0–0.5	Qbt 3	—	—	—	66.4 (J)	—	—	—	5.8
RE73-07-74803	73-27303	1.0–1.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74811	73-27306	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74812	73-27306	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	4.7
RE73-07-74815	73-27307	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Cadmium	Calcium	Chromium	Copper
Soil/Fill BV[a]				**29200**	**0.83**	**8.17**	**295**	**0.4**	**6120**	**19.3**	**14.7**
Qbt 2,3,4 BV[a]				**7340**	**0.5**	**2.79**	**46**	**1.63**	**2200**	**7.14**	**4.66**
Residential Soil Screening Level[b]				**77800**	**31.3**	**3.9**	**15600**	**39**	**na[c]**	**2100[d]**	**3130**
RE73-07-74817	73-27308	0.0–1.0	Soil	—	—	—	—	0.581 (U)	—	—	—
RE73-07-74819	73-27308	4.0–4.5	Soil	—	—	—	—	0.568 (U)	—	—	—
RE73-07-74820	73-27309	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74821	73-27309	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	4.8
RE73-07-74823	73-27310	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74829	73-27312	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74830	73-27312	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	5.3
RE73-07-74832	73-27313	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74833	73-27313	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74835	73-27314	0.0–0.5	Soil	—	—	13.2	—	—	—	—	—
RE73-07-74841	73-27316	0.0–1.0	Soil	—	—	—	—	—	—	—	—
RE73-07-74842	73-27316	1.0–2.0	Qbt 3	9240 (J+)	—	—	85.6 (J+)	—	—	—	—
RE73-07-74850	73-27319	0.0–0.5	Qbt 3	—	—	—	62.6	—	—	—	—
RE73-07-74851	73-27319	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-76474	73-27678	3.5–4.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-76475	73-27678	5.5–6.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-76476	73-27679	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-76477	73-27679	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-76480	73-27680	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-76482	73-27681	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-76483	73-27681	2.0–2.5	Qbt 3	—	—	—	—	—	—		

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Iron	Lead	Magnesium	Mercury	Nickel	Nitrate	Perchlorate
Soil/Fill BV[a]				**0.5**	**21500**	**22.3**	**4610**	**0.1**	**15.4**	**na**	**na**
Qbt 2,3,4 BV[a]				**0.5**	**14500**	**11.2**	**1690**	**0.1**	**6.58**	**na**	**na**
Residential Soil Screening Level[b]				**1220**	**23500**	**400**	**na**	**23**[d]	**1560**	**100000**	**55**[d]
0173-96-0302	73-02253	0.0–0.5	Soil	—	—	—	—	—	—	NA[f]	NA
0173-96-0320	73-02254	0.0–0.5	Soil	—	—	—	—	0.11 (U)	—	NA	NA
0173-96-0308	73-02255	0.0–0.5	Soil	—	—	48	—	0.12 (U)	—	NA	NA
0173-97-0312	73-02451	0.5–1.0	Soil	—	—	—	—	—	—	NA	NA
0173-97-0313	73-02452	0.1–0.5	Soil	—	—	—	—	—	—	NA	NA
RE73-06-67646	73-25561	1.0–2.0	Soil	—	—	—	—	—	—	0.812 (J)	—
RE73-07-74671	73-25561	3.5–5.0	Soil	—	—	—	—	—	—	—	—
RE73-06-67649	73-25562	0.0–0.5	Soil	—	—	—	—	—	—	0.843 (J)	—
RE73-06-67650	73-25562	1.0–2.0	Soil	—	—	—	—	—	—	0.844 (J)	—
RE73-07-74673	73-25562	2.5–4.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67652	73-25563	0.0–0.5	Soil	—	—	—	—	—	—	0.808 (J)	—
RE73-06-67653	73-25563	1.0–2.0	Soil	—	—	—	—	—	—	0.839 (J)	—
RE73-07-74675	73-25563	3.0–4.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-76488	73-25564	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74678	73-25564	2.5–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74679	73-25565	0.0–1.0	Soil	—	—	24	—	—	—	—	—
RE73-07-74680	73-25565	3.0–4.0	Soil	—	—	44.8	—	—	—	—	—
RE73-06-67662	73-25566	1.0–2.0	Soil	—	—	—	—	—	—	0.869 (J-)	—
RE73-07-74715	73-25566	2.0–3.0	Qbt 3	—	—	—	—	—	—	—	0.000569 (J-)
RE73-06-67664	73-25567	0.0–0.5	Soil	—	—	—	—	—	—	0.836 (J-)	—
RE73-06-67665	73-25567	2.0–3.0	Soil	—	—	—	—	—	—	0.839 (J-)	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Iron	Lead	Magnesium	Mercury	Nickel	Nitrate	Perchlorate
Soil/Fill BV[a]				**0.5**	**21500**	**22.3**	**4610**	**0.1**	**15.4**	**na**	**na**
Qbt 2,3,4 BV[a]				**0.5**	**14500**	**11.2**	**1690**	**0.1**	**6.58**	**na**	**na**
Residential Soil Screening Level[b]				**1220**	**23500**	**400**	**na**	**23[d]**	**1560**	**100000**	**55[d]**
RE73-07-74683	73-25567	2.5–4.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74685	73-25568	0.0–1.0	Soil	—	—	70.2	—	0.104	—	—	—
RE73-07-74686	73-25568	1.25–2.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74717	73-25568	3.0–4.5	Qbt 3	—	—	11.3	—	—	—	—	—
RE73-06-67671	73-25569	2.0–3.0	Soil	—	—	—	—	—	—	0.766 (J-)	0.000548 (J)
RE73-07-74688	73-25569	2.0–2.5	Qbt 3	0.55 (U)	—	—	—	—	—	—	—
RE73-07-74689	73-25570	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74690	73-25570	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74692	73-25571	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74693	73-25572	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74694	73-25572	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74695	73-25573	0.0–0.5	Qbt 3	—	—	12.5 (J-)	—	—	—	—	—
RE73-07-74696	73-25573	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74697	73-25574	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74698	73-25574	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74699	73-25575	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74700	73-25575	1.5–2.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67758	73-25593	0.0–0.25	Soil	—	—	27.2 (J)	—	—	—	0.876 (J)	—
RE73-06-67759	73-25594	0.0–0.25	Soil	—	—	51.7 (J)	—	—	—	0.959 (J)	0.000826 (J)
RE73-06-67760	73-25595	0.0–0.25	Soil	—	—	22.7 (J)	—	—	—	1.06	—
RE73-06-67761	73-25596	0.0–0.25	Soil	—	—	—	—	—	—	1.11	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Iron	Lead	Magnesium	Mercury	Nickel	Nitrate	Perchlorate
Soil/Fill BV[a]				**0.5**	**21500**	**22.3**	**4610**	**0.1**	**15.4**	**na**	**na**
Qbt 2,3,4 BV[a]				**0.5**	**14500**	**11.2**	**1690**	**0.1**	**6.58**	**na**	**na**
Residential Soil Screening Level[b]				**1220**	**23500**	**400**	**na**	**23[d]**	**1560**	**100000**	**55[d]**
RE73-06-67762	73-25597	0.0–0.25	Soil	—	—	25.1 (J)	—	—	—	0.898 (J)	—
RE73-06-67763	73-25598	0.0–0.25	Soil	—	—	—	—	—	—	2.66	—
RE73-06-67764	73-25599	0.0–0.25	Soil	—	—	30.5 (J)	—	—	—	1.43	0.000821 (J)
RE73-06-67765	73-25600	0.0–0.25	Soil	—	—	26.6 (J)	—	—	—	0.94 (J)	—
RE73-06-67766	73-25601	0.0–0.25	Soil	—	—	—	—	—	—	0.956 (J)	0.00112 (J)
RE73-06-67770	73-25605	0.0–0.25	Soil	—	—	37 (J+)	—	—	—	1.04(J)	—
RE73-06-67771	73-25606	0.0–0.25	Soil	—	—	45.5 (J+)	—	—	—	0.828 (J)	—
RE73-06-67772	73-25607	0.0–0.25	Soil	—	—	23.4 (J+)	—	—	—	1.03 (J)	—
RE73-06-67773	73-25608	0.0–0.25	Soil	—	—	—	—	—	—	1.66 (J)	—
RE73-06-67774	73-25609	0.0–0.25	Soil	—	—	—	—	—	—	2.12 (J)	—
RE73-06-67775	73-25610	0.0–0.25	Soil	—	—	—	—	—	—	2.07 (J)	—
RE73-06-67776	73-25611	0.0–0.25	Soil	—	—	—	—	—	—	0.88 (J)	—
RE73-06-67777	73-25612	0.0–0.25	Soil	—	—	48.9	—	—	—		—
RE73-06-67778	73-25613	0.0–0.25	Soil	—	—	36.7	—	—	—	8.46	—
RE73-06-67779	73-25614	0.0–0.25	Soil	—	—	232	—	—	—	—	0.000687 (J)
RE73-06-67780	73-25615	0.0–0.25	Soil	—	—	50.6	—	—	—	—	—
RE73-06-67781	73-25616	0.0–0.25	Soil	—	—	30.9	—	—	—	—	—
RE73-06-67782	73-25617	0.0–0.25	Soil	—	—	—	—	—	—	—	—
RE73-06-67783	73-25618	0.0–0.25	Soil	—	—	—	—	—	—	9.35	—
RE73-06-67784	73-25619	0.0–0.25	Soil	—	—	—	—	—	—	—	—
RE73-06-67785	73-25620	0.0–0.25	Soil	—	—	—	—	—	—	—	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Iron	Lead	Magnesium	Mercury	Nickel	Nitrate	Perchlorate
Soil/Fill BV[a]				**0.5**	**21500**	**22.3**	**4610**	**0.1**	**15.4**	**na**	**na**
Qbt 2,3,4 BV[a]				**0.5**	**14500**	**11.2**	**1690**	**0.1**	**6.58**	**na**	**na**
Residential Soil Screening Level[b]				**1220**	**23500**	**400**	**na**	**23[d]**	**1560**	**100000**	**55[d]**
RE73-07-74525	73-25597	1.0–2.0	Soil	—	—	24.9	—	—	—	—	—
RE73-07-74528	73-25612	1.0–2.0	Soil	—	—	—	—	—	—	—	—
RE73-07-74529	73-25614	1.0–2.0	Soil	—	—	—	—	—	—	—	—
RE73-07-74726	73-27279	0.0–1.0	Soil	—	—	47.4 (J)	—	0.345	—	—	—
RE73-07-74727	73-27279	1.5–2.75	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74728	73-27279	3.5–4.5	Qbt 3	—	—	12.6 (J)	—	—	—	—	—
RE73-07-74729	73-27280	0.0–1.5	Soil	—	—	178 (J)	—	—	—	—	—
RE73-07-74730	73-27280	1.5–2.5	Qbt 3	—	—	27.4 (J)	—	—	—	—	—
RE73-07-74731	73-27280	3.5–5.0	Qbt 3	0.757	—	—	—	—	—	—	—
RE73-07-76485	73-27281	0.0–0.5	Soil	—	—	204 (J+)	—	—	—	—	0.0075
RE73-07-74733	73-27281	1.5–2.5	Qbt 3	—	—	20 (J)	—	—	—	—	0.000594 (J)
RE73-07-74734	73-27281	3.5–4.5	Qbt 3	—	—	21 (J)	—	—	—	—	—
RE73-07-74735	73-27282	0.0–2.0	Soil	—	—	54.6	—	—	—	—	—
RE73-07-74736	73-27282	2.5–3.75	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74737	73-27282	4.0–5.0	Qbt 3	—	—	—	1790	—	—	—	—
RE73-07-74739	73-27283	0.0–1.0	Soil	—	—	28.7	—	—	—	—	—
RE73-07-74738	73-27283	1.0–2.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74741	73-27284	0.0–2.0	Soil	—	—	23.7	—	—	—	—	—
RE73-07-74742	73-27284	2.0–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74744	73-27285	0.0–1.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74745	73-27285	1.0–2.5	Qbt 3	—	—	—	—	—	—	—	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Iron	Lead	Magnesium	Mercury	Nickel	Nitrate	Perchlorate
Soil/Fill BV[a]				**0.5**	**21500**	**22.3**	**4610**	**0.1**	**15.4**	**na**	**na**
Qbt 2,3,4 BV[a]				**0.5**	**14500**	**11.2**	**1690**	**0.1**	**6.58**	**na**	**na**
Residential Soil Screening Level[b]				**1220**	**23500**	**400**	**na**	**23**[d]	**1560**	**100000**	**55**[d]
RE73-07-74746	73-27285	3.0–4.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74747	73-27286	0.0–2.0	Soil	—	—	—	—	—	—	—	0.000986 (J-)
RE73-07-74748	73-27286	2.0–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74749	73-27286	3.0–5.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74750	73-27287	0.0–1.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74751	73-27287	1.0–2.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74752	73-27287	3.0–4.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74753	73-27288	0.0–1.5	Soil	—	—	—	—	—	—	—	—
RE73-07-74754	73-27288	2.25–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74755	73-27288	4.0–5.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74756	73-27289	0.0–2.5	Qbt 3	—	—	12.9	—	—	—	—	—
RE73-07-74757	73-27289	3.0–4.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74759	73-27290	0.0–1.5	Qbt 3	—	—	13.2	—	—	—	—	—
RE73-07-74760	73-27290	2.0–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74762	73-27291	0.0–2.0	Soil	—	—	—	—	—	—	—	—
RE73-07-74763	73-27291	2.0–3.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74765	73-27292	0.0–1.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74766	73-27292	2.0–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74768	73-27293	0.0–1.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74769	73-27293	1.5–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74770	73-27293	3.0–4.0	Qbt 3	—	—	—	—	—	—	—	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Iron	Lead	Magnesium	Mercury	Nickel	Nitrate	Perchlorate
Soil/Fill BV[a]				**0.5**	**21500**	**22.3**	**4610**	**0.1**	**15.4**	**na**	**na**
Qbt 2,3,4 BV[a]				**0.5**	**14500**	**11.2**	**1690**	**0.1**	**6.58**	**na**	**na**
Residential Soil Screening Level[b]				**1220**	**23500**	**400**	**na**	**23[d]**	**1560**	**100000**	**55[d]**
RE73-07-74771	73-27294	0.0–1.5	Qbt 3	—	—	24.6	—	—	—	—	—
RE73-07-74772	73-27294	2.0–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74774	73-27295	0.0–2.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74775	73-27295	2.5–4.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-76503	73-27296	0.0–0.5	Qbt 3	0.57 (U)	—	—	—	—	—	—	—
RE73-07-76504	73-27296	2.0–2.5	Qbt 3	0.58 (U)	—	—	—	—	—	—	—
RE73-07-74780	73-27297	0.0–0.5	Qbt 3	—	15600 (J)	90 (J+)	—	—	10.3	—	—
RE73-07-74783	73-27298	0.0–1.0	Soil	—	—	98.6 (J+)	—	—	81.6	—	—
RE73-07-74790	73-27299	0.0–1.5	Qbt 3	—	—	42.6 (J+)	—	—	—	—	—
RE73-07-74791	73-27299	2.0–3.5	Qbt 3	—	19300 (J)	61.5 (J+)	—	—	—	—	—
RE73-07-74793	73-27300	0.0–1.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74794	73-27300	2.0–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74796	73-27301	0.0–2.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74797	73-27301	2.5–3.5	Qbt 3	—	—	—	—	—	—	—	0.000727 (J-)
RE73-07-74799	73-27302	0.0–0.5	Qbt 3	—	—	124 (J)	—	—	—	—	—
RE73-07-74800	73-27302	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74802	73-27303	0.0–0.5	Qbt 3	—	—	25.6 (J)	—	—	—	—	—
RE73-07-74803	73-27303	1.0–1.5	Qbt 3	—	—	17.5 (J)	—	—	—	—	—
RE73-07-74811	73-27306	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74812	73-27306	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74815	73-27307	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Iron	Lead	Magnesium	Mercury	Nickel	Nitrate	Perchlorate
Soil/Fill BV[a]				**0.5**	**21500**	**22.3**	**4610**	**0.1**	**15.4**	**na**	**na**
Qbt 2,3,4 BV[a]				**0.5**	**14500**	**11.2**	**1690**	**0.1**	**6.58**	**na**	**na**
Residential Soil Screening Level[b]				**1220**	**23500**	**400**	**na**	**23[d]**	**1560**	**100000**	**55[d]**
RE73-07-74817	73-27308	0.0–1.0	Soil	—	—	—	—	—	—	—	—
RE73-07-74819	73-27308	4.0–4.5	Soil	—	—	—	—	—	—	—	—
RE73-07-74820	73-27309	0.0–0.5	Qbt 3	0.56 (U)	—	—	—	—	—	—	—
RE73-07-74821	73-27309	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74823	73-27310	0.0–0.5	Qbt 3	—	—	20.2 (J)	—	—	—	—	—
RE73-07-74829	73-27312	0.0–0.5	Qbt 3	—	—	11.8	—	—	—	—	—
RE73-07-74830	73-27312	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74832	73-27313	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74833	73-27313	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74835	73-27314	0.0–0.5	Soil	—	—	—	—	—	—	—	—
RE73-07-74841	73-27316	0.0–1.0	Soil	—	—	—	—	—	—	—	—
RE73-07-74842	73-27316	1.0–2.0	Qbt 3	—	—	12.7	—	—	—	—	—
RE73-07-74850	73-27319	0.0–0.5	Qbt 3	—	—	23.9 (J-)	—	—	—	—	0.0024 (J)
RE73-07-74851	73-27319	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-76474	73-27678	3.5–4.0	Qbt 3	—	—	—	—	—	—	—	0.0056
RE73-07-76475	73-27678	5.5–6.0	Qbt 3	—	—	—	—	—	—	—	0.0035 (J)
RE73-07-76476	73-27679	0.0–0.5	Qbt 3	—	—	11.8 (J+)	—	—	—	—	—
RE73-07-76477	73-27679	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-76480	73-27680	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-76482	73-27681	0.0–0.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-76483	73-27681	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Zinc
Soil/Fill BV[a]				**3460**	**1.52**	**1**	**915**	**0.73**	**1.82**	**48.8**
Qbt 2,3,4 BV[a]				**3500**	**0.3**	**1**	**2770**	**1.1**	**2.40**	**63.5**
Residential Soil Screening Level[b]				**na**	**391**	**391**	**na**	**5.16**	**16**[g]	**23500**
0173-96-0302	73-02253	0.0–0.5	Soil	—	—	2.1 (UJ)	—	1.3 (UJ)	—	—
0173-96-0320	73-02254	0.0–0.5	Soil	—	—	2.2 (UJ)	—	1.4 (UJ)	—	470 (J-)
0173-96-0308	73-02255	0.0–0.5	Soil	—	—	2.5 (UJ)	—	1.5 (UJ)	—	52 (J-)
0173-97-0312	73-02451	0.5–1.0	Soil	—	—	—	—	0.87 (J)	—	—
0173-97-0313	73-02452	0.1–0.5	Soil	—	—	—	—	0.8 (J)	—	—
RE73-06-67646	73-25561	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74671	73-25561	3.5–5.0	Soil	—	—	—	—	—	—	—
RE73-06-67649	73-25562	0.0–0.5	Soil	—	—	4.09	—	—	—	59.3
RE73-06-67650	73-25562	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74673	73-25562	2.5–4.0	Qbt 3	—	0.602 (U)	—	—	—	—	—
RE73-06-67652	73-25563	0.0–0.5	Soil	—	1.66 (U)	—	—	—	—	—
RE73-06-67653	73-25563	1.0–2.0	Soil	—	1.61 (U)	—	—	—	—	—
RE73-07-74675	73-25563	3.0–4.0	Qbt 3	—	0.612 (U)	—	—	—	—	—
RE73-07-76488	73-25564	0.0–0.5	Qbt 3	—	0.56 (U)	—	—	—	—	—
RE73-07-74678	73-25564	2.5–3.0	Qbt 3	—	0.629 (U)	—	—	—	—	—
RE73-07-74679	73-25565	0.0–1.0	Soil	—	—	1.69	—	—	—	61.4
RE73-07-74680	73-25565	3.0–4.0	Soil	—	—	8.13	—	—	—	76.5
RE73-06-67662	73-25566	1.0–2.0	Soil	—	1.68 (U)	—	—	—	—	—
RE73-07-74715	73-25566	2.0–3.0	Qbt 3	—	0.607 (U)	—	—	—	—	—
RE73-06-67664	73-25567	0.0–0.5	Soil	—	1.64 (U)	—	—	—	—	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Zinc
Soil/Fill BV[a]				**3460**	**1.52**	**1**	**915**	**0.73**	**1.82**	**48.8**
Qbt 2,3,4 BV[a]				**3500**	**0.3**	**1**	**2770**	**1.1**	**2.40**	**63.5**
Residential Soil Screening Level[b]				**na**	**391**	**391**	**na**	**5.16**	**16**[g]	**23500**
RE73-06-67665	73-25567	2.0–3.0	Soil	—	1.57 (U)	—	—	—	—	—
RE73-07-74683	73-25567	2.5–4.0	Qbt 3	—	0.635 (U)	—	—	—	—	—
RE73-07-74685	73-25568	0.0–1.0	Soil	—	—	4.5	—	—	—	136
RE73-07-74686	73-25568	1.25–2.0	Qbt 3	—	0.619 (U)	—	—	—	—	—
RE73-07-74717	73-25568	3.0–4.5	Qbt 3	—	0.597 (U)	—	—	—	—	—
RE73-06-67671	73-25569	2.0–3.0	Soil	—	1.55 (U)	—	—	—	—	61.1
RE73-07-74688	73-25569	2.0–2.5	Qbt 3	—	0.36 (U)	—	—	—	—	—
RE73-07-74689	73-25570	0.0–0.5	Qbt 3	—	0.38 (U)	—	—	—	—	—
RE73-07-74690	73-25570	2.0–2.5	Qbt 3	—	0.48 (U)	—	—	—	—	—
RE73-07-74692	73-25571	2.0–2.5	Qbt 3	—	0.71	—	—	—	—	—
RE73-07-74693	73-25572	0.0–0.5	Qbt 3	—	0.32 (J-)	—	—	—	—	71.0
RE73-07-74694	73-25572	2.0–2.5	Qbt 3	—	0.47 (J-)	—	—	—	—	71.9
RE73-07-74695	73-25573	0.0–0.5	Qbt 3	—	0.37	—	—	—	—	—
RE73-07-74696	73-25573	2.0–2.5	Qbt 3	—	0.45	—	—	—	—	—
RE73-07-74697	73-25574	0.0–0.5	Qbt 3	—	0.60	—	—	—	—	—
RE73-07-74698	73-25574	2.0–2.5	Qbt 3	—	0.44	—	—	—	—	—
RE73-07-74699	73-25575	0.0–0.5	Qbt 3	—	0.34	—	—	—	—	—
RE73-07-74700	73-25575	1.5–2.0	Qbt 3	—	0.34	—	—	—	—	—
RE73-06-67758	73-25593	0.0–0.25	Soil	—	1.66 (U)	—	—	—	—	61.7
RE73-06-67759	73-25594	0.0–0.25	Soil	—	1.61 (U)	1.3(J)	—	—	—	105

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Zinc
Soil/Fill BV[a]				**3460**	**1.52**	**1**	**915**	**0.73**	**1.82**	**48.8**
Qbt 2,3,4 BV[a]				**3500**	**0.3**	**1**	**2770**	**1.1**	**2.40**	**63.5**
Residential Soil Screening Level[b]				**na**	**391**	**391**	**na**	**5.16**	**16**[g]	**23500**
RE73-06-67760	73-25595	0.0–0.25	Soil	—	1.62 (U)	—	—	—	—	91.9
RE73-06-67761	73-25596	0.0–0.25	Soil	—	1.57 (U)	—	—	—	—	—
RE73-06-67762	73-25597	0.0–0.25	Soil	—	1.58 (U)	—	—	—	—	56.4
RE73-06-67763	73-25598	0.0–0.25	Soil	—	1.61 (U)	—	—	—	—	55.3
RE73-06-67764	73-25599	0.0–0.25	Soil	—	1.56 (U)	1.07 (J)	—	—	—	73.2
RE73-06-67765	73-25600	0.0–0.25	Soil	—	1.79 (U)	—	—	—	—	88.6
RE73-06-67766	73-25601	0.0–0.25	Soil	—	1.60 (U)	—	—	—	—	—
RE73-06-67770	73-25605	0.0–0.25	Soil	—	1.69 (U)	9.22	—	—	—	78.7
RE73-06-67771	73-25606	0.0–0.25	Soil	—	—	1.18	—	—	—	64.7
RE73-06-67772	73-25607	0.0–0.25	Soil	—	1.91 (U)	—	—	—	—	—
RE73-06-67773	73-25608	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67774	73-25609	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67775	73-25610	0.0–0.25	Soil	—	1.84 (J)	—	—	—	—	—
RE73-06-67776	73-25611	0.0–0.25	Soil	—	1.67 (U)	—	—	—	—	—
RE73-06-67777	73-25612	0.0–0.25	Soil	—	—	—	—	—	—	52.8
RE73-06-67778	73-25613	0.0–0.25	Soil	—	—	—	—	—	—	50.6
RE73-06-67779	73-25614	0.0–0.25	Soil	—	—	—	—	—	—	61.1
RE73-06-67780	73-25615	0.0–0.25	Soil	—	—	—	—	—	—	58.2
RE73-06-67781	73-25616	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67782	73-25617	0.0–0.25	Soil	—	—	—	—	—	—	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Zinc
Soil/Fill BV[a]				**3460**	**1.52**	**1**	**915**	**0.73**	**1.82**	**48.8**
Qbt 2,3,4 BV[a]				**3500**	**0.3**	**1**	**2770**	**1.1**	**2.40**	**63.5**
Residential Soil Screening Level[b]				**na**	**391**	**391**	**na**	**5.16**	**16**[g]	**23500**
RE73-06-67783	73-25618	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67784	73-25619	0.0–0.25	Soil	—	1.77 (U)	—	—	—	—	—
RE73-06-67785	73-25620	0.0–0.25	Soil	—	1.82 (U)	—	—	—	—	—
RE73-07-74525	73-25597	1.0–2.0	Soil	—	—	—	—	—	—	56.8
RE73-07-74528	73-25612	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74529	73-25614	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74726	73-27279	0.0–1.0	Soil	—	—	2.67	—	—	3.22	83.5
RE73-07-74727	73-27279	1.5–2.75	Qbt 3	—	0.65 (U)	—	—	—	—	—
RE73-07-74728	73-27279	3.5–4.5	Qbt 3	—	0.643 (U)	—	—	—	—	—
RE73-07-74729	73-27280	0.0–1.5	Soil	—	—	2.36	—	—	—	128
RE73-07-74730	73-27280	1.5–2.5	Qbt 3	—	0.63 (U)	—	—	—	—	—
RE73-07-74731	73-27280	3.5–5.0	Qbt 3	—	0.604 (U)	—	—	—	—	—
RE73-07-76485	73-27281	0.0–0.5	Soil	—	—	5.6 (J+)	—	—	—	105 (J-)
RE73-07-74733	73-27281	1.5–2.5	Qbt 3	—	0.611 (U)	4.78	—	—	—	66.2
RE73-07-74734	73-27281	3.5–4.5	Qbt 3	—	0.615 (U)	5.89	—	—	—	68.8
RE73-07-74735	73-27282	0.0–2.0	Soil	—	—	4.72	—	—	—	120
RE73-07-74736	73-27282	2.5–3.75	Qbt 3	—	0.682 (U)	—	—	—	—	—
RE73-07-74737	73-27282	4.0–5.0	Qbt 3	—	0.64 (U)	—	—	—	—	—
RE73-07-74739	73-27283	0.0–1.0	Soil	—	—	—	—	—	—	55.2
RE73-07-74738	73-27283	1.0–2.0	Qbt 3	—	0.622 (U)	—	—	—	—	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Zinc
Soil/Fill BV[a]				**3460**	**1.52**	**1**	**915**	**0.73**	**1.82**	**48.8**
Qbt 2,3,4 BV[a]				**3500**	**0.3**	**1**	**2770**	**1.1**	**2.40**	**63.5**
Residential Soil Screening Level[b]				**na**	**391**	**391**	**na**	**5.16**	**16**[g]	**23500**
RE73-07-74741	73-27284	0.0–2.0	Soil	—	—	5.39	—	—	—	49.7
RE73-07-74742	73-27284	2.0–3.0	Qbt 3	—	0.62 (U)	—	—	—	—	—
RE73-07-74744	73-27285	0.0–1.0	Qbt 3	—	0.613 (U)	—	—	—	—	—
RE73-07-74745	73-27285	1.0–2.5	Qbt 3	—	0.604 (U)	—	—	—	—	—
RE73-07-74746	73-27285	3.0–4.0	Qbt 3	—	0.596 (U)	—	—	—	—	—
RE73-07-74747	73-27286	0.0–2.0	Soil	3670	—	—	969	—	—	—
RE73-07-74748	73-27286	2.0–3.0	Qbt 3	—	0.633 (U)	—	—	—	—	—
RE73-07-74749	73-27286	3.0–5.0	Qbt 3	—	1.08 (J)	—	—	—	—	—
RE73-07-74750	73-27287	0.0–1.0	Qbt 3	—	0.62 (U)	—	—	—	—	—
RE73-07-74751	73-27287	1.0–2.0	Qbt 3	—	0.613 (U)	—	—	—	—	—
RE73-07-74752	73-27287	3.0–4.0	Qbt 3	—	0.595 (U)	—	—	—	—	—
RE73-07-74753	73-27288	0.0–1.5	Soil	—	—	—	—	—	—	—
RE73-07-74754	73-27288	2.25–3.0	Qbt 3	—	0.617 (U)	—	—	—	—	—
RE73-07-74755	73-27288	4.0–5.5	Qbt 3	—	0.638 (U)	—	—	—	—	—
RE73-07-74756	73-27289	0.0–2.5	Qbt 3	—	0.599 (U)	—	—	—	—	—
RE73-07-74757	73-27289	3.0–4.0	Qbt 3	—	0.607 (U)	—	—	—	—	—
RE73-07-74759	73-27290	0.0–1.5	Qbt 3	—	0.615 (U)	—	—	—	—	—
RE73-07-74760	73-27290	2.0–3.0	Qbt 3	—	0.606 (U)	—	—	—	—	—
RE73-07-74762	73-27291	0.0–2.0	Soil	—	—	—	—	—	—	51.9
RE73-07-74763	73-27291	2.0–3.5	Qbt 3	—	0.593 (U)	—	—	—	—	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Zinc
Soil/Fill BV[a]				**3460**	**1.52**	**1**	**915**	**0.73**	**1.82**	**48.8**
Qbt 2,3,4 BV[a]				**3500**	**0.3**	**1**	**2770**	**1.1**	**2.40**	**63.5**
Residential Soil Screening Level[b]				**na**	**391**	**391**	**na**	**5.16**	**16**[g]	**23500**
RE73-07-74765	73-27292	0.0–1.5	Qbt 3	—	0.646 (U)	—	—	—	—	—
RE73-07-74766	73-27292	2.0–3.0	Qbt 3	—	0.643 (U)	—	—	—	—	—
RE73-07-74768	73-27293	0.0–1.5	Qbt 3	—	0.613 (U)	—	—	—	—	—
RE73-07-74769	73-27293	1.5–3.0	Qbt 3	—	0.609 (U)	—	—	—	—	—
RE73-07-74770	73-27293	3.0–4.0	Qbt 3	—	0.602 (U)	—	—	—	—	—
RE73-07-74771	73-27294	0.0–1.5	Qbt 3	—	0.597 (U)	1.52	—	—	—	88.4
RE73-07-74772	73-27294	2.0–3.0	Qbt 3	—	0.604 (U)	—	—	—	—	—
RE73-07-74774	73-27295	0.0–2.0	Qbt 3	—	0.598 (U)	—	—	—	—	—
RE73-07-74775	73-27295	2.5–4.0	Qbt 3	—	0.611 (U)	—	—	—	—	—
RE73-07-76503	73-27296	0.0–0.5	Qbt 3	—	0.39 (J-)	—	—	—	—	—
RE73-07-76504	73-27296	2.0–2.5	Qbt 3	—	0.32 (J-)	—	—	—	—	—
RE73-07-74780	73-27297	0.0–0.5	Qbt 3	—	0.61 (J)	2.47 (J)	—	—	—	79.1 (J+)
RE73-07-74783	73-27298	0.0–1.0	Soil	—	—	1.25 (J)	—	—	—	104 (J+)
RE73-07-74790	73-27299	0.0–1.5	Qbt 3	—	0.67 (J)	2.1 (J)	—	—	—	—
RE73-07-74791	73-27299	2.0–3.5	Qbt 3	—	0.702 (J)	2.69 (J)	—	—	—	97.1 (J+)
RE73-07-74793	73-27300	0.0–1.0	Qbt 3	—	0.609 (U)	—	—	—	—	—
RE73-07-74794	73-27300	2.0–3.0	Qbt 3	—	0.604 (U)	—	—	—	—	—
RE73-07-74796	73-27301	0.0–2.0	Qbt 3	—	0.615 (U)	—	—	—	—	—
RE73-07-74797	73-27301	2.5–3.5	Qbt 3	—	0.605 (U)	—	—	—	—	—
RE73-07-74799	73-27302	0.0–0.5	Qbt 3	—	0.34	—	—	—	—	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Zinc
Soil/Fill BV[a]				**3460**	**1.52**	**1**	**915**	**0.73**	**1.82**	**48.8**
Qbt 2,3,4 BV[a]				**3500**	**0.3**	**1**	**2770**	**1.1**	**2.40**	**63.5**
Residential Soil Screening Level[b]				**na**	**391**	**391**	**na**	**5.16**	**16**[g]	**23500**
RE73-07-74800	73-27302	2.0–2.5	Qbt 3	—	0.61	—	—	—	—	—
RE73-07-74802	73-27303	0.0–0.5	Qbt 3	—	—	1.2	—	—	—	—
RE73-07-74803	73-27303	1.0–1.5	Qbt 3	—	0.33	—	—	—	—	—
RE73-07-74811	73-27306	0.0–0.5	Qbt 3	—	0.55 (U)	—	—	—	—	—
RE73-07-74812	73-27306	2.0–2.5	Qbt 3	—	0.53 (U)	—	—	—	—	—
RE73-07-74815	73-27307	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74817	73-27308	0.0–1.0	Soil	—	—	—	—	—	—	—
RE73-07-74819	73-27308	4.0–4.5	Soil	—	—	—	—	—	—	—
RE73-07-74820	73-27309	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74821	73-27309	2.0–2.5	Qbt 3	—	0.31	—	—	—	—	—
RE73-07-74823	73-27310	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74829	73-27312	0.0–0.5	Qbt 3	—	0.46 (J)	—	—	—	—	—
RE73-07-74830	73-27312	2.0–2.5	Qbt 3	—	0.39 (J)	—	—	—	—	—
RE73-07-74832	73-27313	0.0–0.5	Qbt 3	—	0.32 (J-)	—	—	—	—	—
RE73-07-74833	73-27313	2.0–2.5	Qbt 3	—	0.47 (J-)	—	—	—	—	—
RE73-07-74835	73-27314	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-74841	73-27316	0.0–1.0	Soil	—	—	1.81	—	—	—	—
RE73-07-74842	73-27316	1.0–2.0	Qbt 3	—	0.667 (U)	—	—	—	—	—
RE73-07-74850	73-27319	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74851	73-27319	2.0–2.5	Qbt 3	—	0.51 (U)	—	—	—	—	—

Table 7.3.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Zinc
Soil/Fill BV[a]				**3460**	**1.52**	**1**	**915**	**0.73**	**1.82**	**48.8**
Qbt 2,3,4 BV[a]				**3500**	**0.3**	**1**	**2770**	**1.1**	**2.40**	**63.5**
Residential Soil Screening Level[b]				**na**	**391**	**391**	**na**	**5.16**	**16**[g]	**23500**
RE73-07-76474	73-27678	3.5–4.0	Qbt 3	—	0.34 (J-)	—	—	—	—	—
RE73-07-76475	73-27678	5.5–6.0	Qbt 3	—	0.45 (J)	—	—	—	—	—
RE73-07-76476	73-27679	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76477	73-27679	2.0–2.5	Qbt 3	—	0.33 (J)	—	—	—	—	—
RE73-07-76480	73-27680	2.0–2.5	Qbt 3	—	0.84	—	—	—	—	—
RE73-07-76482	73-27681	0.0–0.5	Qbt 3	—	0.58 (U)	—	—	—	—	—
RE73-07-76483	73-27681	2.0–2.5	Qbt 3	—	0.40 (J)	—	—	—	—	—

Note: Units are mg/kg.

[a] BVs from LANL 1998, 59730.

[b] SSLs from NMED 2006, 92513, unless otherwise noted.

[c] na = Not available.

[d] SSL from EPA Region 6 2006, 094321.

[e] — Result was not detected or below the BV.

[f] NA = Not analyzed.

[g] SSL from EPA Region 9 (http://www.epa.gov/region09/waste/sfund/prg/files/04prgtable.pdf).

Table 7.3.1-3
Radionuclides Detected or Detected above BVs/FVs at SWMU 73-002

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-238	Plutonium-239	Strontium-90	Tritium	Uranium-234	Uranium-235	Uranium-238
Soil/Fill BV[a]				**0.013**	**1.65**	**0.023**	**0.054**	**1.31**	**n/a**[b]	**2.59**	**0.2**	**2.29**
Qbt 2,3,4 BV[a]				**na**[c]	**na**	**na**	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Residential Screening Action Level[d]				**30**	**5.6**	**37**	**33**	**5.7**	**750**	**170**	**17**	**86**
0173-96-0302	73-02253	0.0–0.5	Soil	NA[e]	NA	NA	NA	NA	—[f]	NA	NA	NA
0173-96-0320	73-02254	0.0–0.5	Soil	NA	NA	NA	NA	NA	0.054	NA	NA	NA
0173-96-0308	73-02255	0.0–0.5	Soil	NA	NA	NA	NA	NA	0.064	NA	NA	NA
RE73-06-67646	73-25561	1.0–2.0	Soil	—	—	—	0.0319	NA	NA	—	—	—
RE73-06-67649	73-25562	0.0–0.5	Soil	—	—	—	0.187	NA	NA	—	—	—
RE73-06-67650	73-25562	1.0–2.0	Soil	—	0.0799	—	0.0541	NA	NA	—	—	—
RE73-06-67652	73-25563	0.0–0.5	Soil	—	—	—	0.0614	NA	NA	—	—	—
RE73-07-74679	73-25565	0.0–1.0	Soil	—	—	—	0.0595	—	NA	—	—	—
RE73-07-74680	73-25565	3.0–4.0	Soil	—	—	—	0.205	—	NA	—	—	—
RE73-07-74685	73-25568	0.0–1.0	Soil	—	—	0.0514	0.24	—	NA	—	—	—
RE73-07-74687	73-25568	0.0–0.5	Soil	—	—	—	0.11	—	—	—	—	—
RE73-06-67758	73-25593	0.0–0.25	Soil	—	—	—	0.065	NA	NA	—	—	—
RE73-07-74694	73-25572	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	0.101 (J-)	—
RE73-06-67759	73-25594	0.0–0.25	Soil	—	—	—	0.099	NA	NA	—	—	—
RE73-07-74524	73-25594	1.0–2.0	Soil	—	0.186	—	0.034	—	NA	—	—	—
RE73-06-67762	73-25597	0.0–0.25	Soil	—	—	—	0.337	NA	NA	—	—	—
RE73-07-74525	73-25597	1.0–2.0	Soil	—	0.757	—	0.104	0.17	NA	—	—	—
RE73-06-67764	73-25599	0.0–0.25	Soil	—	—	—	0.0879	NA	NA	—	—	—
RE73-06-67766	73-25601	0.0–0.25	Soil	0.0281	—	—	0.0573	NA	NA	—	—	—
RE73-07-74526	73-25604	1.0–2.0	Soil	—	0.154	—	0.0293	—	NA	—	—	—
RE73-06-67770	73-25605	0.0–0.25	Soil	—	—	—	0.0999	NA	NA	—	—	—
RE73-06-67771	73-25606	0.0–0.25	Soil	0.0829	3.16	—	1.42	NA	NA	—	—	—

Table 7.3.1-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-238	Plutonium-239	Strontium-90	Tritium	Uranium-234	Uranium-235	Uranium-238
Soil/Fill BV[a]				**0.013**	**1.65**	**0.023**	**0.054**	**1.31**	**n/a**[b]	**2.59**	**0.2**	**2.29**
Qbt 2,3,4 BV[a]				**na**[c]	**na**	**na**	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Residential Screening Action Level[d]				**30**	**5.6**	**37**	**33**	**5.7**	**750**	**170**	**17**	**86**
RE73-07-74527	73-25606	1.0–2.0	Soil	—	0.346	—	0.119	—	NA	—	—	—
RE73-06-67772	73-25607	0.0–0.25	Soil	0.063	3.28	—	0.557	NA	NA	—	—	—
RE73-06-67773	73-25608	0.0–0.25	Soil	0.0355	—	—	0.254	NA	NA	—	—	—
RE73-06-67774	73-25609	0.0–0.25	Soil	—	—	—	0.213	NA	NA	—	—	2.33
RE73-06-67775	73-25610	0.0–0.25	Soil	0.303	1.91	0.042	5.03	NA	NA	3.02	—	3.32
RE73-06-67776	73-25611	0.0–0.25	Soil	—	—	—	0.414	NA	NA	—	—	—
RE73-06-67777	73-25612	0.0–0.25	Soil	—	—	—	0.483	NA	NA	—	—	2.44
RE73-06-67778	73-25613	0.0–0.25	Soil	—	—	—	0.292	NA	NA	—	—	—
RE73-06-67779	73-25614	0.0–0.25	Soil	0.092	5.43	0.031	1	NA	NA	2.98	—	3.66
RE73-06-67780	73-25615	0.0–0.25	Soil	0.0924	2.26	—	0.806	NA	NA	—	—	3.02
RE73-06-67781	73-25616	0.0–0.25	Soil	0.0423	—	—	0.282	NA	NA	—	—	—
RE73-06-67782	73-25617	0.0–0.25	Soil	—	—	—	0.419	NA	NA	—	—	—
RE73-06-67783	73-25618	0.0–0.25	Soil	—	—	—	0.231	NA	NA	—	—	—
RE73-06-67785	73-25620	0.0–0.25	Soil	—	—	—	0.153	NA	NA	—	—	—
RE73-07-74726	73-27279	0.0–1.0	Soil	—	—	—	0.0961	—	NA	2.92	—	—
RE73-07-74727	73-27279	1.5–2.75	Qbt 3	—	—	—	0.0902	—	NA	—	0.124	—
RE73-07-74733	73-27281	1.5–2.5	Qbt 3	—	—	—	—	—	NA	—	0.101	—
RE73-07-74735	73-27282	0.0–2.0	Soil	—	—	—	0.0915	—	NA	—	—	—
RE73-07-74737	73-27282	4.0–5.0	Qbt 3	—	—	—	—	0.398	NA	—	—	—
RE73-07-74739	73-27283	0.0–1.0	Soil	—	—	—	0.632	—	NA	—	—	2.67
RE73-07-74741	73-27284	0.0–2.0	Soil	—	—	—	0.368	—	NA	—	—	—
RE73-07-74742	73-27284	2.0–3.0	Qbt 3	—	—	—	0.0633	0.329	NA	—	—	—
RE73-07-74744	73-27285	0.0–1.0	Qbt 3	—	—	—	—	—	NA	—	—	—

Table 7.3.1-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-238	Plutonium-239	Strontium-90	Tritium	Uranium-234	Uranium-235	Uranium-238
Soil/Fill BV[a]				**0.013**	**1.65**	**0.023**	**0.054**	**1.31**	**n/a**[b]	**2.59**	**0.2**	**2.29**
Qbt 2,3,4 BV[a]				**na**[c]	**na**	**na**	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Residential Screening Action Level[d]				**30**	**5.6**	**37**	**33**	**5.7**	**750**	**170**	**17**	**86**
RE73-07-74748	73-27286	2.0–3.0	Qbt 3	—	—	—	—	—	NA	—	0.103	—
RE73-07-74749	73-27286	3.0–5.0	Qbt 3	—	—	—	—	—	NA	2.05	0.109	—
RE73-07-74753	73-27288	0.0–1.5	Soil	—	—	—	—	—	NA	4.56	0.315	3.29
RE73-07-74754	73-27288	2.25–3.0	Qbt 3	0.0379	—	—	—	—	NA	—	0.124	—
RE73-07-74755	73-27288	4.0–5.5	Qbt 3	—	—	—	—	—	NA	—	0.109	—
RE73-07-74756	73-27289	0.0–2.5	Qbt 3	—	—	—	—	—	NA	—	0.109	—
RE73-07-74757	73-27289	3.0–4.0	Qbt 3	—	—	—	—	—	NA	—	0.0986	—
RE73-07-74759	73-27290	0.0–1.5	Qbt 3	—	—	—	—	—	NA	—	0.105	—
RE73-07-74763	73-27291	2.0–3.5	Qbt 3	—	—	—	—	—	NA	—	0.103	—
RE73-07-74780	73-27297	0.0–0.5	Qbt 3	—	—	—	0.079 (J)	—	NA	—	—	—
RE73-07-74802	73-27303	0.0–0.5	Qbt 3	—	—	—	0.0325	—	—	—	—	—
RE73-07-74803	73-27303	1.0–1.5	Qbt 3	—	—	—	0.0384	—	—	—	—	—
RE73-07-74814	73-27307	0.0–0.5	Soil	—	—	—	0.084	—	—	—	—	—
RE73-07-74823	73-27310	0.0–0.5	Qbt 3	—	—	—	0.0251	—	—	—	—	—
RE73-07-74832	73-27313	0.0–0.5	Qbt 3	—	—	—	0.0063	—	—	—	—	—
RE73-07-74835	73-27314	0.0–0.5	Soil	—	—	—	0.154	—	—	—	—	—
RE73-07-74841	73-27316	0.0–1.0	Soil	—	—	—	0.0756	—	NA	—	—	—
RE73-07-76483	73-27681	2.0-2.5	Qbt 3	—	—	—	—	—	—	—	0.093	—

Note: Units are pCi/g.

[a] BVs from LANL 1998, 59730.

[b] n/a = Not applicable

[c] na = Not available.

[d] SALs from LANL 2005, 88493.

[e] NA = Not analyzed.

[f] — = Result was not detected or was detected below the BV/FV.

Table 7.3.1-4
Detected Organic Chemicals at SWMU 73-002

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Aroclor-1242	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene
Residential Soil Screening Levels[a]				**3730**	**22000**	**1.12**	**1.12**	**1.12**	**6.21**	**0.621**
0173-96-0308	73-02255	0.0–0.5	Soil	—[b]	—	—	—	—	—	—
0173-97-0311	73-02451	0.1–0.5	Soil	NA[c]	NA	NA	NA	NA	NA	NA
0173-97-0322	73-02458	0.1–0.5	Soil	—	—	NA	NA	NA	—	—
RE73-06-67646	73-25561	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74671	73-25561	3.5–5.0	Soil	—	—	—	—	—	—	—
RE73-06-67649	73-25562	0.0–0.5	Soil	—	0.00824 (J)	—	—	—	—	—
RE73-06-67650	73-25562	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74673	73-25562	2.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67652	73-25563	0.0–0.5	Soil	—	—	—	0.173	0.073	—	—
RE73-06-67653	73-25563	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74675	73-25563	3.0–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76488	73-25564	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74678	73-25564	2.5–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74679	73-25565	0.0–1.0	Soil	—	—	—	—	0.0024 (J)	0.0321 (J)	0.0351 (J)
RE73-07-74680	73-25565	3.0–4.0	Soil	—	0.00996 (J)	—	—	0.0033 (J)	—	—
RE73-06-67662	73-25566	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74715	73-25566	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67664	73-25567	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-74683	73-25567	2.5–4.0	Qbt 3	—	—	0.0025 (J)	—	—	—	—
RE73-07-74685	73-25568	0.0–1.0	Soil	—	—	—	—	—	0.0263 (J)	0.0269 (J)
RE73-07-74686	73-25568	1.25–2.0	Qbt 3	—	—	—	—	—	0.0299 (J)	0.0295 (J)

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Aroclor-1242	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene
Residential Soil Screening Levels[a]				**3730**	**22000**	**1.12**	**1.12**	**1.12**	**6.21**	**0.621**
RE73-07-74717	73-25568	3.0–4.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74687	73-25569	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-06-67671	73-25569	2.0–3.0	Soil	—	—	—	—	—	—	—
RE73-07-74688	73-25569	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74689	73-25570	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74690	73-25570	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74692	73-25571	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74693	73-25572	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74694	73-25572	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74695	73-25573	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74696	73-25573	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74697	73-25574	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74698	73-25574	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74699	73-25575	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74700	73-25575	1.5–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67758	73-25593	0.0–0.25	Soil	—	—	—	—	—	—	0.0366 (J)
RE73-06-67759	73-25594	0.0–0.25	Soil	—	—	—	—	—	—	0.276 (J)
RE73-06-67760	73-25595	0.0–0.25	Soil	—	—	—	—	—	—	0.0458(J)
RE73-06-67761	73-25596	0.0–0.25	Soil	—	—	—	—	—	—	0.09(J)
RE73-06-67762	73-25597	0.0–0.25	Soil	—	—	—	—	—	—	0.0351 (J)
RE73-06-67763	73-25598	0.0–0.25	Soil	—	—	—	0.0299 (J)	—	—	0.0776 (J)
RE73-06-67764	73-25599	0.0–0.25	Soil	—	—	—	—	—	—	0.0354 (J)

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Aroclor-1242	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene
Residential Soil Screening Levels[a]				**3730**	**22000**	**1.12**	**1.12**	**1.12**	**6.21**	**0.621**
RE73-06-67765	73-25600	0.0–0.25	Soil	—	0.0106 (J)	—	0.0343 (J)	—	—	0.169 (J)
RE73-06-67766	73-25601	0.0–0.25	Soil	—	—	—	0.0097	—	—	—
RE73-06-67770	73-25605	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67771	73-25606	0.0–0.25	Soil	—	0.00931 (J)	—	—	—	—	—
RE73-06-67772	73-25607	0.0–0.25	Soil	—	—	0.0097	0.0534	—	—	—
RE73-06-67773	73-25608	0.0–0.25	Soil	—	—	—	0.0075	—	—	—
RE73-06-67774	73-25609	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67775	73-25610	0.0–0.25	Soil	—	—	—	0.0236	—	—	—
RE73-06-67776	73-25611	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67777	73-25612	0.0–0.25	Soil	—	—	—	0.0145	0.009	—	—
RE73-06-67778	73-25613	0.0–0.25	Soil	—	—	—	0.013	0.0079	—	—
RE73-06-67779	73-25614	0.0–0.25	Soil	—	—	—	0.0223	0.0143	—	—
RE73-06-67780	73-25615	0.0–0.25	Soil	—	—	—	0.0272	0.0149	—	—
RE73-06-67781	73-25616	0.0–0.25	Soil	—	—	0.0127	0.0152	0.0082	—	—
RE73-06-67782	73-25617	0.0–0.25	Soil	—	—	—	0.0066	0.0048	—	—
RE73-06-67783	73-25618	0.0–0.25	Soil	—	—	—	0.0044 (J)	0.003 (J)	—	—
RE73-06-67784	73-25619	0.0–0.25	Soil	—	—	—	0.0038 (J)	0.0025 (J)	—	—
RE73-06-67785	73-25620	0.0–0.25	Soil	—	—	—	0.0042	0.0019 (J)	—	—
RE73-07-74726	73-27279	0.0–1.0	Soil	—	—	—	—	—	—	—
RE73-07-74727	73-27279	1.5–2.75	Qbt 3	—	—	—	—	—	—	—
RE73-07-74728	73-27279	3.5–4.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74729	73-27280	0.0–1.5	Soil	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Aroclor-1242	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene
Residential Soil Screening Levels[a]				**3730**	**22000**	**1.12**	**1.12**	**1.12**	**6.21**	**0.621**
RE73-07-74730	73-27280	1.5–2.5	Qbt 3	—	—	—	0.0041	—	—	—
RE73-07-74731	73-27280	3.5–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76485	73-27281	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-74733	73-27281	1.5–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74734	73-27281	3.5–4.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74735	73-27282	0.0–2.0	Soil	—	—	—	—	—	0.0289 (J)	0.0429
RE73-07-74736	73-27282	2.5–3.7	Qbt 3	—	—	—	—	—	—	—
RE73-07-74737	73-27282	4.0–5.0	Qbt 3	—	—	—	—	—	0.0271 (J)	—
RE73-07-74739	73-27283	0.0–1.0	Soil	—	—	—	0.0194	0.0073	—	—
RE73-07-74738	73-27283	1.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74741	73-27284	0.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74742	73-27284	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74744	73-27285	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74747	73-27286	0.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74748	73-27286	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74749	73-27286	3.0–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74750	73-27287	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74751	73-27287	1.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74752	73-27287	3.0–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74753	73-27288	0.0–1.5	Soil	—	—	—	—	—	—	—
RE73-07-74756	73-27289	0.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74757	73-27289	3.0–4.0	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Aroclor-1242	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene
Residential Soil Screening Levels[a]				**3730**	**22000**	**1.12**	**1.12**	**1.12**	**6.21**	**0.621**
RE73-07-74759	73-27290	0.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74762	73-27291	0.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74763	73-27291	2.0–3.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74765	73-27292	0.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74766	73-27292	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74768	73-27293	0.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74769	73-27293	1.5–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74770	73-27293	3.0–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74771	73-27294	0.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74772	73-27294	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74774	73-27295	0.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74775	73-27295	2.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76503	73-27296	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76504	73-27296	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74780	73-27297	0.0–0.5	Qbt 3	—	0.00882 (J)	—	—	—	0.0315 (J)	0.0292 (J)
RE73-07-74783	73-27298	0.0–1.0	Soil	—	—	—	—	—	—	—
RE73-07-76491	73-27298	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74790	73-27299	0.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74791	73-27299	2.0–3.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74793	73-27300	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74794	73-27300	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74796	73-27301	0.0–2.0	Qbt 3	—	—	—	0.002 (J)	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Aroclor-1242	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene
Residential Soil Screening Levels[a]				**3730**	**22000**	**1.12**	**1.12**	**1.12**	**6.21**	**0.621**
RE73-07-74799	73-27302	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74800	73-27302	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74802	73-27303	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74803	73-27303	1.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74805	73-27304	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74806	73-27304	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74808	73-27305	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74811	73-27306	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74814	73-27307	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-74815	73-27307	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74819	73-27308	4.0–4.5	Soil	—	—	—	—	—	—	—
RE73-07-74820	73-27309	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74821	73-27309	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74823	73-27310	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74824	73-27310	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74829	73-27312	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74830	73-27312	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74832	73-27313	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74833	73-27313	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74835	73-27314	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-74841	73-27316	0.0–1.0	Soil	0.0367	0.0561	—	—	—	0.0853	0.0876
RE73-07-74842	73-27316	1.0–2.0	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Aroclor-1242	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene
Residential Soil Screening Levels[a]				**3730**	**22000**	**1.12**	**1.12**	**1.12**	**6.21**	**0.621**
RE73-07-74850	73-27319	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74851	73-27319	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76473	73-27678	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-76474	73-27678	3.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76475	73-27678	5.5–6.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76476	73-27679	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76477	73-27679	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76479	73-27680	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76480	73-27680	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76482	73-27681	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76483	73-27681	2.0–2.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Chlordane[alpha-]	Chlordane[gamma-]
Residential Soil Screening Levels[a]				**6.21**	**2290[d]**	**62.1**	**100000[e]**	**347**	**16.2[f]**	**16.2[f]**
0173-96-0308	73-02255	0.0–0.5	Soil	—	—	—	—	—	0.0035	—
0173-97-0311	73-02451	0.1–0.5	Soil	NA	NA	NA	NA	NA	NA	NA
0173-97-0322	73-02458	0.1–0.5	Soil	—	—	—	0.043 (J)	—	NA	NA
RE73-06-67646	73-25561	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74671	73-25561	3.5–5.0	Soil	—	—	—	—	—	—	—
RE73-06-67649	73-25562	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-06-67650	73-25562	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74673	73-25562	2.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67652	73-25563	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-06-67653	73-25563	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74675	73-25563	3.0–4.0	Qbt 3	—	—	—	0.461 (J)	—	—	—
RE73-07-76488	73-25564	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74678	73-25564	2.5–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74679	73-25565	0.0–1.0	Soil	0.0503	0.0284 (J)	—	—	—	—	—
RE73-07-74680	73-25565	3.0–4.0	Soil	—	—	—	—	—	—	—
RE73-06-67662	73-25566	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74715	73-25566	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67664	73-25567	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-74683	73-25567	2.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74685	73-25568	0.0–1.0	Soil	0.0438	—	0.0138 (J)	—	—	—	—
RE73-07-74686	73-25568	1.25–2.0	Qbt 3	0.0407	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Chlordane[alpha-]	Chlordane[gamma-]
Residential Soil Screening Levels[a]				**6.21**	**2290[d]**	**62.1**	**100000[e]**	**347**	**16.2[f]**	**16.2[f]**
RE73-07-74717	73-25568	3.0–4.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74687	73-25569	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-06-67671	73-25569	2.0–3.0	Soil	—	—	—	—	—	—	—
RE73-07-74688	73-25569	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74689	73-25570	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74690	73-25570	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74692	73-25571	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74693	73-25572	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74694	73-25572	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74695	73-25573	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74696	73-25573	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74697	73-25574	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74698	73-25574	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74699	73-25575	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74700	73-25575	1.5–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67758	73-25593	0.0–0.25	Soil	0.0599	0.0345 (J)	0.0284 (J)	—	—	—	—
RE73-06-67759	73-25594	0.0–0.25	Soil	0.693 (J)	0.198 (J)	—	—	—	—	—
RE73-06-67760	73-25595	0.0–0.25	Soil	0.119 (J)	0.0445 (J)	—	—	—	—	—
RE73-06-67761	73-25596	0.0–0.25	Soil	0.236 (J)	0.0877 (J)	—	—	—	—	—
RE73-06-67762	73-25597	0.0–0.25	Soil	0.0875 (J)	—	—	—	—	—	—
RE73-06-67763	73-25598	0.0–0.25	Soil	0.183 (J)	0.0596 (J)	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Chlordane[alpha-]	Chlordane[gamma-]
Residential Soil Screening Levels[a]				**6.21**	**2290[d]**	**62.1**	**100000[e]**	**347**	**16.2[f]**	**16.2[f]**
RE73-06-67764	73-25599	0.0–0.25	Soil	0.0669 (J)	—	0.0262 (J)	—	—	—	—
RE73-06-67765	73-25600	0.0–0.25	Soil	0.389 (J)	0.143 (J)	—	0.593 (J)	—	—	—
RE73-06-67766	73-25601	0.0–0.25	Soil	0.0362 (J)	—	—	—	—	—	—
RE73-06-67770	73-25605	0.0–0.25	Soil	—	—	—	—	—	0.00127 (J)	0.00135 (J)
RE73-06-67771	73-25606	0.0–0.25	Soil	—	—	—	—	—	0.00522 (J)	0.00428 (J)
RE73-06-67772	73-25607	0.0–0.25	Soil	—	—	—	0.868 (J)	—	—	—
RE73-06-67773	73-25608	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67774	73-25609	0.0–0.25	Soil	—	—	—	—	—	0.000724 (J)	0.000932 (J)
RE73-06-67775	73-25610	0.0–0.25	Soil	—	—	—	0.712 (J)	—	0.000926 (J)	0.000283 (J)
RE73-06-67776	73-25611	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67777	73-25612	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67778	73-25613	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67779	73-25614	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67780	73-25615	0.0–0.25	Soil	—	—	—	—	—	0.000365 (J)	0.00129 (J)
RE73-06-67781	73-25616	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67782	73-25617	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67783	73-25618	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67784	73-25619	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67785	73-25620	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-07-74726	73-27279	0.0–1.0	Soil	—	—	—	—	—	—	—
RE73-07-74727	73-27279	1.5–2.75	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Chlordane[alpha-]	Chlordane[gamma-]
Residential Soil Screening Levels[a]				**6.21**	**2290[d]**	**62.1**	**100000[e]**	**347**	**16.2[f]**	**16.2[f]**
RE73-07-74728	73-27279	3.5–4.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74729	73-27280	0.0–1.5	Soil	—	—	—	0.42 (J)	—	—	—
RE73-07-74730	73-27280	1.5–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74731	73-27280	3.5–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76485	73-27281	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-74733	73-27281	1.5–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74734	73-27281	3.5–4.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74735	73-27282	0.0–2.0	Soil	0.0676	—	0.0182 (J)	0.534 (J)	0.0939 (J)	—	—
RE73-07-74736	73-27282	2.5–3.7	Qbt 3	—	—	—	0.477 (J)	—	—	—
RE73-07-74737	73-27282	4.0–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74739	73-27283	0.0–1.0	Soil	0.0457	—	—	0.796 (J)	—	—	—
RE73-07-74738	73-27283	1.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74741	73-27284	0.0–2.0	Soil	—	—	—	0.486 (J)	—	—	—
RE73-07-74742	73-27284	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74744	73-27285	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74747	73-27286	0.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74748	73-27286	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74749	73-27286	3.0–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74750	73-27287	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74751	73-27287	1.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74752	73-27287	3.0–4.0	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Chlordane[alpha-]	Chlordane[gamma-]
Residential Soil Screening Levels[a]				**6.21**	**2290[d]**	**62.1**	**100000[e]**	**347**	**16.2[f]**	**16.2[f]**
RE73-07-74753	73-27288	0.0–1.5	Soil	—	—	—	—	—	—	—
RE73-07-74756	73-27289	0.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74757	73-27289	3.0–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74759	73-27290	0.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74762	73-27291	0.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74763	73-27291	2.0–3.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74765	73-27292	0.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74766	73-27292	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74768	73-27293	0.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74769	73-27293	1.5–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74770	73-27293	3.0–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74771	73-27294	0.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74772	73-27294	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74774	73-27295	0.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74775	73-27295	2.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76503	73-27296	0.0–0.5	Qbt 3	—	—	—	—	0.056 (J)	—	—
RE73-07-76504	73-27296	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74780	73-27297	0.0–0.5	Qbt 3	0.0566	—	—	—	0.0738 (J)	—	—
RE73-07-74783	73-27298	0.0–1.0	Soil	—	—	—	—	—	0.00149 (J)	0.00122 (J)
RE73-07-76491	73-27298	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74790	73-27299	0.0–1.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Chlordane[alpha-]	Chlordane[gamma-]
Residential Soil Screening Levels[a]				**6.21**	**2290[d]**	**62.1**	**100000[e]**	**347**	**16.2[f]**	**16.2[f]**
RE73-07-74791	73-27299	2.0–3.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74793	73-27300	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74794	73-27300	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74796	73-27301	0.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74799	73-27302	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74800	73-27302	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74802	73-27303	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74803	73-27303	1.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74805	73-27304	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74806	73-27304	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74808	73-27305	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74811	73-27306	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74814	73-27307	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-74815	73-27307	2.0–2.5	Qbt 3	—	—	—	—	0.066 (J)	—	—
RE73-07-74819	73-27308	4.0–4.5	Soil	—	—	—	—	—	—	—
RE73-07-74820	73-27309	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74821	73-27309	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74823	73-27310	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74824	73-27310	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74829	73-27312	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74830	73-27312	2.0–2.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Chlordane[alpha-]	Chlordane[gamma-]
Residential Soil Screening Levels[a]				**6.21**	**2290**[d]	**62.1**	**100000**[e]	**347**	**16.2**[f]	**16.2**[f]
RE73-07-74832	73-27313	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74833	73-27313	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74835	73-27314	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-74841	73-27316	0.0–1.0	Soil	0.131	0.0441	0.0369	0.523 (J)	—	—	—
RE73-07-74842	73-27316	1.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74850	73-27319	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74851	73-27319	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76473	73-27678	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-76474	73-27678	3.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76475	73-27678	5.5–6.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76476	73-27679	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76477	73-27679	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76479	73-27680	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76480	73-27680	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76482	73-27681	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76483	73-27681	2.0–2.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chloroform	Chrysene	DDD[4,4'-]	DDE[4,4'-]	DDT[4,4'-]	Dieldrin	Di-n-butylphthalate
Residential Soil Screening Levels[a]				**4.0**	**615**	**24.4**	**17.2**	**17.2**	**0.304**	**6110**
0173-96-0308	73-02255	0.0–0.5	Soil	—	—	—	0.029	0.034	—	—
0173-97-0311	73-02451	0.1–0.5	Soil	NA	NA	NA	NA	NA	NA	NA
0173-97-0322	73-02458	0.1–0.5	Soil	NA	—	NA	NA	NA	NA	—
RE73-06-67646	73-25561	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74671	73-25561	3.5–5.0	Soil	—	—	—	0.00199	0.00173 (J)	—	0.0743 (J)
RE73-06-67649	73-25562	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-06-67650	73-25562	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74673	73-25562	2.5–4.0	Qbt 3	—	—	—	—	—	—	0.0418 (J)
RE73-06-67652	73-25563	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-06-67653	73-25563	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74675	73-25563	3.0–4.0	Qbt 3	—	—	—	—	—	—	0.0718 (J)
RE73-07-76488	73-25564	0.0–0.5	Qbt 3	—	—	—	0.0069	0.0057	—	—
RE73-07-74678	73-25564	2.5–3.0	Qbt 3	—	—	—	0.00108 (J)	0.00125 (J)	—	0.0642 (J)
RE73-07-74679	73-25565	0.0–1.0	Soil	—	0.0342 (J)	—	0.00243 (J)	0.00231 (J)	—	—
RE73-07-74680	73-25565	3.0–4.0	Soil	—	—	—	0.00396	0.00495 (J)	—	—
RE73-06-67662	73-25566	1.0–2.0	Soil	—	—	—	0.00041 (J)	0.000928 (J)	—	—
RE73-07-74715	73-25566	2.0–3.0	Qbt 3	—	—	—	—	—	—	0.0639 (J)
RE73-06-67664	73-25567	0.0–0.5	Soil	—	—	—	—	0.00111 (J)	—	—
RE73-07-74683	73-25567	2.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74685	73-25568	0.0–1.0	Soil	—	0.0342 (J)	—	0.00643 (J)	0.0138 (J)	—	—
RE73-07-74686	73-25568	1.25–2.0	Qbt 3	—	0.0312 (J)	—	—	0.00134 (J)	—	—
RE73-07-74717	73-25568	3.0–4.5	Qbt 3	—	—	—	—	0.00356 (J)	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chloroform	Chrysene	DDD[4,4'-]	DDE[4,4'-]	DDT[4,4'-]	Dieldrin	Di-n-butylphthalate
Residential Soil Screening Levels[a]				**4.0**	**615**	**24.4**	**17.2**	**17.2**	**0.304**	**6110**
RE73-07-74687	73-25569	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-06-67671	73-25569	2.0–3.0	Soil	0.000228 (J)	—	—	—	—	—	—
RE73-07-74688	73-25569	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74689	73-25570	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74690	73-25570	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74692	73-25571	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74693	73-25572	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74694	73-25572	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74695	73-25573	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74696	73-25573	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74697	73-25574	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74698	73-25574	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74699	73-25575	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74700	73-25575	1.5–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67758	73-25593	0.0–0.25	Soil	—	0.0478	—	—	0.0039 (J)	—	—
RE73-06-67759	73-25594	0.0–0.25	Soil	—	0.392	—	—	—	—	—
RE73-06-67760	73-25595	0.0–0.25	Soil	—	0.0748 (J)	—	—	—	—	—
RE73-06-67761	73-25596	0.0–0.25	Soil	—	0.135	—	—	—	—	—
RE73-06-67762	73-25597	0.0–0.25	Soil	—	0.0449 (J)	—	—	—	—	—
RE73-06-67763	73-25598	0.0–0.25	Soil	—	0.114	—	—	—	—	—
RE73-06-67764	73-25599	0.0–0.25	Soil	—	0.0378 (J)	—	0.00474 (J)	—	—	—
RE73-06-67765	73-25600	0.0–0.25	Soil	—	0.198 (J)	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chloroform	Chrysene	DDD[4,4'-]	DDE[4,4'-]	DDT[4,4'-]	Dieldrin	Di-n-butylphthalate
Residential Soil Screening Levels[a]				**4.0**	**615**	**24.4**	**17.2**	**17.2**	**0.304**	**6110**
RE73-06-67766	73-25601	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67770	73-25605	0.0–0.25	Soil	—	—	0.00144	0.0431 (J)	0.0302 (J)	—	—
RE73-06-67771	73-25606	0.0–0.25	Soil	—	0.0691	—	0.0395 (J)	0.0489 (J)	—	—
RE73-06-67772	73-25607	0.0–0.25	Soil	—	0.038 (J)	—	0.00536 (J)	0.00718 (J)	—	—
RE73-06-67773	73-25608	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67774	73-25609	0.0–0.25	Soil	—	—	0.00105	0.00589 (J)	0.00367 (J)	—	—
RE73-06-67775	73-25610	0.0–0.25	Soil	—	—	—	0.00312 (J)	0.00148 (J)	—	—
RE73-06-67776	73-25611	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67777	73-25612	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67778	73-25613	0.0–0.25	Soil	—	—	—	0.000665 (J)	0.00163 (J)	—	—
RE73-06-67779	73-25614	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67780	73-25615	0.0–0.25	Soil	—	—	—	0.00171 (J-)	0.00323 (J)	0.00109 (J)	—
RE73-06-67781	73-25616	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67782	73-25617	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67783	73-25618	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67784	73-25619	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-06-67785	73-25620	0.0–0.25	Soil	—	—	—	—	—	—	—
RE73-07-74726	73-27279	0.0–1.0	Soil	—	—	0.00106 (J)	0.000687 (J)	0.00279 (J)	—	0.0693 (J)
RE73-07-74727	73-27279	1.5–2.75	Qbt 3	—	—	—	—	—	—	0.0434 (J)
RE73-07-74728	73-27279	3.5–4.5	Qbt 3	—	—	—	—	—	—	0.0413 (J)
RE73-07-74729	73-27280	0.0–1.5	Soil	—	—	—	0.00141 (J+)	0.00172 (J)	—	0.0697 (J)
RE73-07-74730	73-27280	1.5–2.5	Qbt 3	—	—	—	0.000416 (J+)	0.00107 (J)	—	0.0361 (J)

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chloroform	Chrysene	DDD[4,4'-]	DDE[4,4'-]	DDT[4,4'-]	Dieldrin	Di-n-butylphthalate
Residential Soil Screening Levels[a]				**4.0**	**615**	**24.4**	**17.2**	**17.2**	**0.304**	**6110**
RE73-07-74731	73-27280	3.5–5.0	Qbt 3	—	—	—	—	—	—	0.0377 (J)
RE73-07-76485	73-27281	0.0–0.5	Soil	—	—	—	0.026	0.34	—	—
RE73-07-74733	73-27281	1.5–2.5	Qbt 3	—	—	0.00547 (J)	0.00526 (J)	0.0167 (J)	—	0.0594 (J)
RE73-07-74734	73-27281	3.5–4.5	Qbt 3	—	—	—	0.00355 (J)	0.0151 (J)	—	—
RE73-07-74735	73-27282	0.0–2.0	Soil	—	0.0385 (J)	—	—	0.00545 (J)	—	0.0539 (J)
RE73-07-74736	73-27282	2.5–3.7	Qbt 3	—	—	—	—	—	—	—
RE73-07-74737	73-27282	4.0–5.0	Qbt 3	—	0.0272 (J)	—	—	—	—	—
RE73-07-74739	73-27283	0.0–1.0	Soil	—	0.0219 (J)	—	0.00132 (J)	0.000956 (J)	—	—
RE73-07-74738	73-27283	1.0–2.0	Qbt 3	—	—	—	—	—	—	0.0584 (J)
RE73-07-74741	73-27284	0.0–2.0	Soil	—	—	—	0.00746	0.00804 (J)	—	—
RE73-07-74742	73-27284	2.0–3.0	Qbt 3	—	—	—	0.0018	0.00167 (J)	—	—
RE73-07-74744	73-27285	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74747	73-27286	0.0–2.0	Soil	—	—	—	0.000761 (J)	—	—	—
RE73-07-74748	73-27286	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74749	73-27286	3.0–5.0	Qbt 3	—	—	—	—	—	—	0.0412 (J)
RE73-07-74750	73-27287	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74751	73-27287	1.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74752	73-27287	3.0–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74753	73-27288	0.0–1.5	Soil	—	—	—	—	—	—	—
RE73-07-74756	73-27289	0.0–2.5	Qbt 3	—	—	—	0.0013	—	—	—
RE73-07-74757	73-27289	3.0–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74759	73-27290	0.0–1.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chloroform	Chrysene	DDD[4,4'-]	DDE[4,4'-]	DDT[4,4'-]	Dieldrin	Di-n-butylphthalate
Residential Soil Screening Levels[a]				**4.0**	**615**	**24.4**	**17.2**	**17.2**	**0.304**	**6110**
RE73-07-74762	73-27291	0.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74763	73-27291	2.0–3.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74765	73-27292	0.0–1.5	Qbt 3	—	—	—	—	—	—	0.049 (J)
RE73-07-74766	73-27292	2.0–3.0	Qbt 3	—	—	—	—	—	—	0.0487 (J)
RE73-07-74768	73-27293	0.0–1.5	Qbt 3	—	—	—	—	—	—	0.0567 (J)
RE73-07-74769	73-27293	1.5–3.0	Qbt 3	—	—	—	—	—	—	0.0544 (J)
RE73-07-74770	73-27293	3.0–4.0	Qbt 3	—	—	—	—	—	—	0.0471 (J)
RE73-07-74771	73-27294	0.0–1.5	Qbt 3	—	—	—	0.00125	0.0013 (J)	—	—
RE73-07-74772	73-27294	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74774	73-27295	0.0–2.0	Qbt 3	—	—	—	—	—	—	0.059 (J)
RE73-07-74775	73-27295	2.5–4.0	Qbt 3	—	—	—	—	—	—	0.0498 (J)
RE73-07-76503	73-27296	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76504	73-27296	2.0–2.5	Qbt 3	—	—	—	—	0.0034 (J)	—	—
RE73-07-74780	73-27297	0.0–0.5	Qbt 3	—	0.0312 (J)	—	0.000419 (J)	0.000722 (J)	—	0.0623 (J)
RE73-07-74783	73-27298	0.0–1.0	Soil	—	—	—	0.0106	0.0225	—	0.0515 (J)
RE73-07-76491	73-27298	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74790	73-27299	0.0–1.5	Qbt 3	—	—	—	—	—	—	0.0606 (J)
RE73-07-74791	73-27299	2.0–3.5	Qbt 3	—	—	—	0.000878 (J)	0.00175 (J)	—	0.0753 (J)
RE73-07-74793	73-27300	0.0–1.0	Qbt 3	—	—	—	—	—	—	0.0609 (J)
RE73-07-74794	73-27300	2.0–3.0	Qbt 3	—	—	—	—	—	—	0.0462 (J)
RE73-07-74796	73-27301	0.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74799	73-27302	0.0–0.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chloroform	Chrysene	DDD[4,4'-]	DDE[4,4'-]	DDT[4,4'-]	Dieldrin	Di-n-butylphthalate
Residential Soil Screening Levels[a]				**4.0**	**615**	**24.4**	**17.2**	**17.2**	**0.304**	**6110**
RE73-07-74800	73-27302	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74802	73-27303	0.0–0.5	Qbt 3	—	—	0.0092	0.068	0.11	—	—
RE73-07-74803	73-27303	1.0–1.5	Qbt 3	—	—	0.0041	0.055	0.083	—	—
RE73-07-74805	73-27304	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74806	73-27304	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74808	73-27305	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74811	73-27306	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74814	73-27307	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-74815	73-27307	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74819	73-27308	4.0–4.5	Soil	—	—	—	—	—	—	—
RE73-07-74820	73-27309	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74821	73-27309	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74823	73-27310	0.0–0.5	Qbt 3	—	—	—	0.0022	0.0048	—	—
RE73-07-74824	73-27310	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74829	73-27312	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74830	73-27312	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74832	73-27313	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74833	73-27313	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74835	73-27314	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-74841	73-27316	0.0–1.0	Soil	—	0.0731	—	—	—	—	—
RE73-07-74842	73-27316	1.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74850	73-27319	0.0–0.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chloroform	Chrysene	DDD[4,4'-]	DDE[4,4'-]	DDT[4,4'-]	Dieldrin	Di-n-butylphthalate
Residential Soil Screening Levels[a]				**4.0**	**615**	**24.4**	**17.2**	**17.2**	**0.304**	**6110**
RE73-07-74851	73-27319	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76473	73-27678	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-76474	73-27678	3.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76475	73-27678	5.5–6.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76476	73-27679	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76477	73-27679	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76479	73-27680	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76480	73-27680	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76482	73-27681	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76483	73-27681	2.0–2.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dinitro-2-methylphenlo[4,6-]	Di-n-octylphthalate	Fluoranthene	Fluorene	Heptachlorodibenzo dioxin[1,2,3,4,6,7,8-]	Heptachlorodibenzo dioxins (Total)	Heptachlorodibenzo furan[1,2,3,4,6,7,8-]
Residential Soil Screening Levels[a]				**6.11**	**2400[g]**	**2290**	**2660**	**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**		
0173-96-0308	73-02255	0.0–0.5	Soil	—	—	—	—	NA	NA	NA
0173-97-0311	73-02451	0.1–0.5	Soil	—	NA	NA	NA	0.000001 (J)	—	6.5E-07 (J)
0173-97-0322	73-02458	0.1–0.5	Soil	—	—	—	—	0.000005 (J)	9.9E-06 (J)	1.6E-06 (J)
RE73-06-67646	73-25561	1.0–2.0	Soil	—	—	0.033 (J)	—	0.0000175	0.0000298	4.42E-06
RE73-07-74671	73-25561	3.5–5.0	Soil	—	—	—	—	6.7E-07 (J)	1.22E-06	2.7E-07 (J)
RE73-06-67649	73-25562	0.0–0.5	Soil	—	—	0.0117 (J)	—	5.73E-06	0.0000115	—
RE73-06-67650	73-25562	1.0–2.0	Soil	—	—	—	—	—	1.39E-06	3.9E-07 (J)
RE73-07-74673	73-25562	2.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67652	73-25563	0.0–0.5	Soil	—	—	0.0127 (J)	—	4.12E-06	8.53E-06	—
RE73-06-67653	73-25563	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74675	73-25563	3.0–4.0	Qbt 3	—	—	—	—	3.8E-07 (J)	7.4E-07	—
RE73-07-76488	73-25564	0.0–0.5	Qbt 3	—	—	—	—	5.39E-06	9.43E-06	1.55E-06
RE73-07-74678	73-25564	2.5–3.0	Qbt 3	—	—	—	—	1.14E-06 (J)	2.01E-06	5.7E-07 (J)
RE73-07-74679	73-25565	0.0–1.0	Soil	—	—	0.0627	—	0.0000168	0.0000311	4.24E-06
RE73-07-74680	73-25565	3.0–4.0	Soil	—	—	0.0215 (J)	—	0.0000247	0.0000488	0.0000115
RE73-06-67662	73-25566	1.0–2.0	Soil	—	—	—	—	8.64E-06	0.0000153	1.9E-06 (J)
RE73-07-74715	73-25566	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67664	73-25567	0.0–0.5	Soil	—	—	—	—	5.54E-06	0.0000093	1.49E-06 (J)
RE73-07-74683	73-25567	2.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74685	73-25568	0.0–1.0	Soil	—	—	0.0719	—	0.0000424	0.0000733	0.0000119
RE73-07-74686	73-25568	1.25–2.0	Qbt 3	—	—	0.0523	—	4.45E-06	0.0000079	1.28E-06 (J)

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dinitro-2-methylphenlo[4,6-]	Di-n-octylphthalate	Fluoranthene	Fluorene	Heptachlorodibenzo dioxin[1,2,3,4,6,7,8-]	Heptachlorodibenzo dioxins (Total)	Heptachlorodibenzo furan[1,2,3,4,6,7,8-]
Residential Soil Screening Levels[a]				**6.11**	**2400[g]**	**2290**	**2660**	**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**		
RE73-07-74717	73-25568	3.0–4.5	Qbt 3	—	—	—	—	0.0000104	0.0000189	2.74E-06
RE73-07-74687	73-25569	0.0–0.5	Soil	—	—	—	—	0.0000029	6.08E-06	8.66E-07 (J)
RE73-06-67671	73-25569	2.0–3.0	Soil	—	—	—	—	—	—	—
RE73-07-74688	73-25569	2.0–2.5	Qbt 3	—	—	—	—	2.83E-07 (J)	6.46E-07	—
RE73-07-74689	73-25570	0.0–0.5	Qbt 3	—	—	—	—	2.27E-07 (J)	2.27E-07	—
RE73-07-74690	73-25570	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74692	73-25571	2.0–2.5	Qbt 3	—	—	—	—	—	1.23E-07	—
RE73-07-74693	73-25572	0.0–0.5	Qbt 3	—	—	—	—	1.4E-07 (J)	1.4E-07	—
RE73-07-74694	73-25572	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74695	73-25573	0.0–0.5	Qbt 3	—	—	—	—	4.38E-07 (J)	0.0000011	1.89E-07 (J)
RE73-07-74696	73-25573	2.0–2.5	Qbt 3	—	—	—	—	—	2.07E-07	—
RE73-07-74697	73-25574	0.0–0.5	Qbt 3	—	—	—	—	1.33E-07 (J)	3.39E-07	—
RE73-07-74698	73-25574	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74699	73-25575	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74700	73-25575	1.5–2.0	Qbt 3	—	—	—	—	—	1.3E-07	—
RE73-06-67758	73-25593	0.0–0.25	Soil	—	—	0.289 (J)	—	0.000026	0.0000458	6.01E-06
RE73-06-67759	73-25594	0.0–0.25	Soil	—	—	1.36 (J)	—	0.000118	0.000213	0.0000102
RE73-06-67760	73-25595	0.0–0.25	Soil	—	—	0.284 (J)	—	0.0000298	0.0000534	3.46E-06
RE73-06-67761	73-25596	0.0–0.25	Soil	—	—	0.336 (J)	—	0.0000212	0.0000371	2.85E-06
RE73-06-67762	73-25597	0.0–0.25	Soil	—	—	0.27 (J)	—	0.0000193	0.0000349	0.0000051
RE73-06-67763	73-25598	0.0–0.25	Soil	—	—	0.351 (J)	—	0.0000236	0.0000428	0.0000034

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dinitro-2-methylphenlo[4,6-]	Di-n-octylphthalate	Fluoranthene	Fluorene	Heptachlorodibenzo dioxin[1,2,3,4,6,7,8-]	Heptachlorodibenzo dioxins (Total)	Heptachlorodibenzo furan[1,2,3,4,6,7,8-]
Residential Soil Screening Levels[a]				**6.11**	**2400[g]**	**2290**	**2660**	**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**		
RE73-06-67764	73-25599	0.0–0.25	Soil	—	—	0.279 (J)	—	0.000158	0.000283	0.0000125
RE73-06-67765	73-25600	0.0–0.25	Soil	—	—	0.463 (J)	—	0.0000511	0.0000938	0.0000128
RE73-06-67766	73-25601	0.0–0.25	Soil	—	0.227 (J)	0.231 (J)	—	7.42E-06	0.0000134	2.58E-06
RE73-06-67770	73-25605	0.0–0.25	Soil	—	—	0.0212 (J)	—	0.0000122	0.0000226	3.78E-06 (J)
RE73-06-67771	73-25606	0.0–0.25	Soil	—	—	0.122	—	0.0000158	0.0000324	6.2E-06 (J)
RE73-06-67772	73-25607	0.0–0.25	Soil	—	—	0.0615	—	0.0000432	0.00009	4.8E-06 (J)
RE73-06-67773	73-25608	0.0–0.25	Soil	—	—	—	—	4.45E-06	8.97E-06	1.09E-06 (J)
RE73-06-67774	73-25609	0.0–0.25	Soil	—	—	0.0283 (J)	—	9.47E-06	0.0000186	2.78E-06 (J)
RE73-06-67775	73-25610	0.0–0.25	Soil	—	—	0.0229 (J)	—	8.17E-06	0.0000168	2.45E-06 (J)
RE73-06-67776	73-25611	0.0–0.25	Soil	—	—	0.0117 (J)	—	1.87E-06 (J)	3.76E-06	—
RE73-06-67777	73-25612	0.0–0.25	Soil	—	—	0.0243 (J)	—	0.0000072	0.0000154	2.21E-06 (J)
RE73-06-67778	73-25613	0.0–0.25	Soil	—	—	—	—	6.22E-06	0.000013	1.44E-06 (J)
RE73-06-67779	73-25614	0.0–0.25	Soil	—	—	0.0955	—	0.0000388	0.0000737	7.88E-06
RE73-06-67780	73-25615	0.0–0.25	Soil	—	—	0.0327 (J)	—	0.0000154	0.0000347	4.62E-06
RE73-06-67781	73-25616	0.0–0.25	Soil	—	—	—	—	4.84E-06	9.83E-06	1.77E-06 (J)
RE73-06-67782	73-25617	0.0–0.25	Soil	—	—	0.0311 (J)	—	8.89E-06	0.0000188	2.64E-06
RE73-06-67783	73-25618	0.0–0.25	Soil	—	—	0.0307 (J)	—	0.0000072	0.0000142	1.81E-06 (J)
RE73-06-67784	73-25619	0.0–0.25	Soil	—	—	0.0126 (J)	—	2.81E-06	5.66E-06	9.57E-07 (J)
RE73-06-67785	73-25620	0.0–0.25	Soil	—	—	—	—	2.53E-06 (J)	5.17E-06	—
RE73-07-74726	73-27279	0.0–1.0	Soil	—	—	—	—	0.0000123	0.0000219	5.14E-06
RE73-07-74727	73-27279	1.5–2.75	Qbt 3	—	—	—	—	5.7E-07 (J)	1.14E-06	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dinitro-2-methylphenlo[4,6-]	Di-n-octylphthalate	Fluoranthene	Fluorene	Heptachlorodibenzo dioxin[1,2,3,4,6,7,8-]	Heptachlorodibenzo dioxins (Total)	Heptachlorodibenzo furan[1,2,3,4,6,7,8-]
Residential Soil Screening Levels[a]				**6.11**	**2400[g]**	**2290**	**2660**	**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**		
RE73-07-74728	73-27279	3.5–4.5	Qbt 3	—	—	—	—	1.26E-06 (J)	2.31E-06	6.9E-07 (J)
RE73-07-74729	73-27280	0.0–1.5	Soil	—	—	0.0123 (J)	—	0.0000234	0.0000399	5.43E-06
RE73-07-74730	73-27280	1.5–2.5	Qbt 3	—	—	—	—	2.59E-06	4.93E-06	9.5E-07 (J)
RE73-07-74731	73-27280	3.5–5.0	Qbt 3	—	—	—	—	4.8E-07 (J)	9.9E-07	—
RE73-07-76485	73-27281	0.0–0.5	Soil	—	—	0.049 (J)	—	0.0000706	0.000128	0.000032
RE73-07-74733	73-27281	1.5–2.5	Qbt 3	—	—	—	—	0.0000333	0.0000587	8.24E-06
RE73-07-74734	73-27281	3.5–4.5	Qbt 3	—	—	—	—	0.0000173	0.0000296	6.11E-06
RE73-07-74735	73-27282	0.0–2.0	Soil	—	—	0.0853	—	0.0000394	0.000084	0.0000113
RE73-07-74736	73-27282	2.5–3.7	Qbt 3	—	—	—	—	3.8E-07 (J)	0.0000009	3.9E-07 (J)
RE73-07-74737	73-27282	4.0–5.0	Qbt 3	—	—	0.0398	—	1.66E-06 (J)	3.27E-06	5.4E-07 (J)
RE73-07-74739	73-27283	0.0–1.0	Soil	—	—	0.0408 (J)	—	0.0000122	0.0000266	5.03E-06
RE73-07-74738	73-27283	1.0–2.0	Qbt 3	—	—	—	—	7.7E-07 (J)	1.58E-06	6.8E-07 (J)
RE73-07-74741	73-27284	0.0–2.0	Soil	—	—	0.0114 (J)	—	5.07E-06	0.0000105	1.54E-06 (J)
RE73-07-74742	73-27284	2.0–3.0	Qbt 3	—	—	—	—	3.45E-06	6.96E-06	6.6E-07 (J)
RE73-07-74744	73-27285	0.0–1.0	Qbt 3	—	—	—	—	—	1.9E-07	—
RE73-07-74747	73-27286	0.0–2.0	Soil	—	—	—	—	2.69E-06	5.58E-06	4.8E-07 (J)
RE73-07-74748	73-27286	2.0–3.0	Qbt 3	—	—	—	—	1.29E-06 (J)	2.62E-06	4.2E-07 (J)
RE73-07-74749	73-27286	3.0–5.0	Qbt 3	—	—	—	—	4.4E-07 (J)	0.0000009	—
RE73-07-74750	73-27287	0.0–1.0	Qbt 3	—	—	—	—	1.06E-06 (J)	1.06E-06	—
RE73-07-74751	73-27287	1.0–2.0	Qbt 3	—	—	—	—	5.8E-07 (J)	1.23E-06	—
RE73-07-74752	73-27287	3.0–4.0	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dinitro-2-methylphenlo[4,6-]	Di-n-octylphthalate	Fluoranthene	Fluorene	Heptachlorodibenzo dioxin[1,2,3,4,6,7,8-]	Heptachlorodibenzo dioxins (Total)	Heptachlorodibenzo furan[1,2,3,4,6,7,8-]
Residential Soil Screening Levels[a]				**6.11**	**2400[g]**	**2290**	**2660**	**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**		
RE73-07-74753	73-27288	0.0–1.5	Soil	—	—	—	—	—	—	—
RE73-07-74756	73-27289	0.0–2.5	Qbt 3	—	—	—	—	4.21E-06	7.69E-06	2.91E-06
RE73-07-74757	73-27289	3.0–4.0	Qbt 3	—	—	—	—	1.21E-06 (J)	2.19E-06	—
RE73-07-74759	73-27290	0.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74762	73-27291	0.0–2.0	Soil	—	—	—	—	5.33E-06	9.63E-06	1.04E-06 (J)
RE73-07-74763	73-27291	2.0–3.5	Qbt 3	—	—	—	—	6.5E-07 (J)	6.5E-07	—
RE73-07-74765	73-27292	0.0–1.5	Qbt 3	—	—	—	—	2.0E-07 (J)	0.0000002	—
RE73-07-74766	73-27292	2.0–3.0	Qbt 3	—	—	—	—	2.1E-07 (J)	2.1E-07	—
RE73-07-74768	73-27293	0.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74769	73-27293	1.5–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74770	73-27293	3.0–4.0	Qbt 3	—	—	—	—	2.5E-07 (J)	0.0000005	—
RE73-07-74771	73-27294	0.0–1.5	Qbt 3	—	—	—	—	5.57E-06	0.0000101	3.13E-06
RE73-07-74772	73-27294	2.0–3.0	Qbt 3	—	—	—	—	9.0E-07 (J)	1.68E-06	3.8E-07 (J)
RE73-07-74774	73-27295	0.0–2.0	Qbt 3	—	—	—	—	1.21E-06 (J)	2.21E-06	—
RE73-07-74775	73-27295	2.5–4.0	Qbt 3	—	—	—	—	5.2E-07 (J)	1.08E-06	—
RE73-07-76503	73-27296	0.0–0.5	Qbt 3	0.41 (J)	—	—	—	—	—	—
RE73-07-76504	73-27296	2.0–2.5	Qbt 3	—	—	—	—	3.42E-06	0.0000067	7.22E-07 (J)
RE73-07-74780	73-27297	0.0–0.5	Qbt 3	—	—	0.0676	—	0.0000141	0.0000271	4.22E-06
RE73-07-74783	73-27298	0.0–1.0	Soil	—	—	—	—	0.0000141	0.000026	2.68E-06
RE73-07-76491	73-27298	2.0–2.5	Qbt 3	—	—	—	—	8.5E-07 (J)	1.66E-06	—
RE73-07-74790	73-27299	0.0–1.5	Qbt 3	—	—	—	—	7.77E-06	0.0000141	2.67E-06

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dinitro-2-methylphenlo[4,6-]	Di-n-octylphthalate	Fluoranthene	Fluorene	Heptachlorodibenzo dioxin[1,2,3,4,6,7,8-]	Heptachlorodibenzo dioxins (Total)	Heptachlorodibenzo furan[1,2,3,4,6,7,8-]
Residential Soil Screening Levels[a]				**6.11**	**2400[g]**	**2290**	**2660**	**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**		
RE73-07-74791	73-27299	2.0–3.5	Qbt 3	—	—	—	—	0.0000163	0.0000289	6.15E-06
RE73-07-74793	73-27300	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74794	73-27300	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74796	73-27301	0.0–2.0	Qbt 3	—	—	—	—	—	2.9E-07	—
RE73-07-74799	73-27302	0.0–0.5	Qbt 3	—	—	—	—	0.0000063	0.0000123	1.26E-06 (J)
RE73-07-74800	73-27302	2.0–2.5	Qbt 3	—	—	—	—	4.36E-06 (J)	8.93E-07	—
RE73-07-74802	73-27303	0.0–0.5	Qbt 3	—	—	—	—	0.0000184	0.0000323	9.15E-06
RE73-07-74803	73-27303	1.0–1.5	Qbt 3	—	—	—	—	0.000016	0.000028	9.33E-06
RE73-07-74805	73-27304	0.0–0.5	Qbt 3	—	—	—	—	5.49E-06	0.000018	5.72E-07 (J)
RE73-07-74806	73-27304	2.0–2.5	Qbt 3	—	—	—	—	5.25E-07 (J)	1.08E-06	—
RE73-07-74808	73-27305	0.0–0.5	Qbt 3	—	—	—	—	2.15E-07 (J)	4.83E-07	—
RE73-07-74811	73-27306	0.0–0.5	Qbt 3	—	—	—	—	—	2.18E-07	—
RE73-07-74814	73-27307	0.0–0.5	Soil	—	—	—	—	2.78E-06	5.42E-06	1.23E-06 (J)
RE73-07-74815	73-27307	2.0–2.5	Qbt 3	—	—	—	—	4.06E-06	0.0000081	7.17E-07 (J)
RE73-07-74819	73-27308	4.0–4.5	Soil	—	—	—	—	1.52E-06 (J)	3.15E-06	0.0000121
RE73-07-74820	73-27309	0.0–0.5	Qbt 3	—	—	—	—	1.90E-06 (J)	3.68E-06	6.51E-07 (J)
RE73-07-74821	73-27309	2.0–2.5	Qbt 3	—	—	—	—	—	5.98E-07	2.51E-07 (J)
RE73-07-74823	73-27310	0.0–0.5	Qbt 3	—	—	—	—	0.0000176	0.0000294	5.14E-06
RE73-07-74824	73-27310	2.0–2.5	Qbt 3	—	—	—	—	2.42E-06 (J)	0.0000042	7.81E-07 (J)
RE73-07-74829	73-27312	0.0–0.5	Qbt 3	—	—	—	—	1.15E-06 (J)	2.37E-06	—
RE73-07-74830	73-27312	2.0–2.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dinitro-2-methylphenlo[4,6-]	Di-n-octylphthalate	Fluoranthene	Fluorene	Heptachlorodibenzo dioxin[1,2,3,4,6,7,8-]	Heptachlorodibenzo dioxins (Total)	Heptachlorodibenzo furan[1,2,3,4,6,7,8-]
Residential Soil Screening Levels[a]				**6.11**	**2400[g]**	**2290**	**2660**	**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**		
RE73-07-74832	73-27313	0.0–0.5	Qbt 3	—	—	—	—	2.92E-06	5.82E-06	8.94E-07 (J)
RE73-07-74833	73-27313	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74835	73-27314	0.0–0.5	Soil	—	—	—	—	5.95E-06	0.0000127	1.57E-06 (J)
RE73-07-74841	73-27316	0.0–1.0	Soil	—	—	0.245	0.0342 (J)	0.0000104	0.0000172	5.22E-06
RE73-07-74842	73-27316	1.0–2.0	Qbt 3	—	—	—	—	3.46E-06	5.85E-06	1.82E-06 (J)
RE73-07-74850	73-27319	0.0–0.5	Qbt 3	—	—	—	—	0.0000077	0.0000185	5.64E-06
RE73-07-74851	73-27319	2.0–2.5	Qbt 3	—	—	—	—	—	0.0000024	0.000001 (J)
RE73-07-76473	73-27678	0.0–0.5	Soil	—	—	—	—	0.000011	0.0000211	3.99E-06
RE73-07-76474	73-27678	3.5–4.0	Qbt 3	—	—	—	—	1.90E-06 (J)	3.73E-06	9.79E-07 (J)
RE73-07-76475	73-27678	5.5–6.0	Qbt 3	—	—	—	—	5.48E-06	0.0000101	1.89E-06 (J)
RE73-07-76476	73-27679	0.0–0.5	Qbt 3	—	—	—	—	1.55E-06 (J)	2.81E-06	—
RE73-07-76477	73-27679	2.0–2.5	Qbt 3	—	—	—	—	9.2E-07 (J)	0.0000018	—
RE73-07-76479	73-27680	0.0–0.5	Qbt 3	—	—	—	—	6.59E-08 (J)	6.59E-08	—
RE73-07-76480	73-27680	2.0–2.5	Qbt 3	—	—	—	—	—	1.12E-07	—
RE73-07-76482	73-27681	0.0–0.5	Qbt 3	—	—	—	—	3.17E-07 (J)	6.38E-07	—
RE73-07-76483	73-27681	2.0–2.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Heptachlorodibenzo furan[1,2,3,4,7,8,9-]	Heptachlorodibenzo furans (Total)	Hexachlorodibenzo dioxin[1,2,3,4,7,8-]	Hexachlorodibenzo dioxin[1,2,3,6,7,8-]	Hexachlorodibenzo dioxin[1,2,3,7,8,9-]	Hexachlorodibenzo dioxins (Total)	Hexachlorodibenzo furan[1,2,3,4,7,8-]
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
0173-96-0308	73-02255	0.0–0.5	Soil	NA	NA	NA	NA	NA	NA	NA
0173-97-0311	73-02451	0.1–0.5	Soil	—	—	—	—	—	—	—
0173-97-0322	73-02458	0.1–0.5	Soil	—	2.90E-06 (J)	—	3.4E-07 (J)	—	2.70E-06 (J)	—
RE73-06-67646	73-25561	1.0–2.0	Soil	—	9.21E-06	1.28E-06 (J)	1.09E-06 (J)	1.25E-06 (J)	6.08E-06	—
RE73-07-74671	73-25561	3.5–5.0	Soil	—	2.7E-07	—	—	—	—	—
RE73-06-67649	73-25562	0.0–0.5	Soil	—	1.76E-06	—	—	—	1.70E-06	—
RE73-06-67650	73-25562	1.0–2.0	Soil	—	3.9E-07	—	—	—	—	—
RE73-07-74673	73-25562	2.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67652	73-25563	0.0–0.5	Soil	—	1.31E-06	—	—	—	2.37E-06	—
RE73-06-67653	73-25563	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74675	73-25563	3.0–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76488	73-25564	0.0–0.5	Qbt 3	—	3.04E-06	—	4.42E-07 (J)	4.19E-07 (J)	4.28E-06	1.36E-07 (J)
RE73-07-74678	73-25564	2.5–3.0	Qbt 3	—	1.26E-06	—	—	—	3.5E-07	—
RE73-07-74679	73-25565	0.0–1.0	Soil	—	8.85E-06	—	7.3E-07 (J)	7.0E-07 (J)	6.36E-06	4.1E-07 (J)
RE73-07-74680	73-25565	3.0–4.0	Soil	5.3E-07 (J)	0.0000214	8.2E-07 (J)	1.82E-06 (J)	1.47E-06 (J)	0.0000194	1.47E-06 (J)
RE73-06-67662	73-25566	1.0–2.0	Soil	—	4.15E-06	3.5E-07 (J)	5.23E-07 (J)	5.05E-07 (J)	3.27E-06	—
RE73-07-74715	73-25566	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67664	73-25567	0.0–0.5	Soil	—	2.68E-06	—	—	—	1.62E-06	2.66E-07 (J)
RE73-07-74683	73-25567	2.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74685	73-25568	0.0–1.0	Soil	8.5E-07 (J)	0.0000248	1.43E-06 (J)	3.22E-06	2.87E-06	0.0000228	1.35E-06 (J)
RE73-07-74686	73-25568	1.25–2.0	Qbt 3	—	2.39E-06	—	—	—	1.48E-06	—
RE73-07-74717	73-25568	3.0–4.5	Qbt 3	—	5.91E-06	3.0E-07 (J)	7.5E-07 (J)	7.1E-07 (J)	5.34E-06	2.8E-07 (J)

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Heptachlorodibenzo furan[1,2,3,4,7,8,9-]	Heptachlorodibenzo furans (Total)	Hexachlorodibenzo dioxin[1,2,3,4,7,8-]	Hexachlorodibenzo dioxin[1,2,3,6,7,8-]	Hexachlorodibenzo dioxin[1,2,3,7,8,9-]	Hexachlorodibenzo dioxins (Total)	Hexachlorodibenzo furan[1,2,3,4,7,8-]
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
RE73-07-74687	73-25569	0.0–0.5	Soil	—	1.84E-06	—	2.16E-07 (J)	2.13E-07 (J)	1.98E-06	1.02E-07 (J)
RE73-06-67671	73-25569	2.0–3.0	Soil	—	—	—	—	—	—	—
RE73-07-74688	73-25569	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74689	73-25570	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74690	73-25570	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74692	73-25571	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74693	73-25572	0.0–0.5	Qbt 3	1.12E-07 (J)	1.12E-07	—	—	—	—	—
RE73-07-74694	73-25572	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74695	73-25573	0.0–0.5	Qbt 3	—	3.39E-07	—	—	—	—	—
RE73-07-74696	73-25573	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74697	73-25574	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74698	73-25574	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74699	73-25575	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74700	73-25575	1.5–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67758	73-25593	0.0–0.25	Soil	—	0.0000118	8.64E-07 (J)	1.66E-06 (J)	1.71E-06 (J)	0.0000124	5.91E-07 (J)
RE73-06-67759	73-25594	0.0–0.25	Soil	7.75E-07 (J)	0.0000225	1.83E-06 (J)	4.36E-06	0.000004	0.0000385	9.67E-07 (J)
RE73-06-67760	73-25595	0.0–0.25	Soil	3.53E-07 (J)	7.84E-06	7.26E-07 (J)	1.42E-06 (J)	1.32E-06 (J)	0.0000122	4.82E-07 (J)
RE73-06-67761	73-25596	0.0–0.25	Soil	—	5.82E-06	4.44E-07 (J)	9.17E-07 (J)	1.03E-06 (J)	8.31E-06	3.04E-07 (J)
RE73-06-67762	73-25597	0.0–0.25	Soil	—	0.0000098	4.76E-07 (J)	1.04E-06 (J)	9.14E-07 (J)	8.95E-06	3.51E-07 (J)
RE73-06-67763	73-25598	0.0–0.25	Soil	—	6.65E-06	4.79E-07 (J)	1.12E-06 (J)	1.16E-06 (J)	0.00001	3.95E-07 (J)
RE73-06-67764	73-25599	0.0–0.25	Soil	8.78E-07 (J)	0.0000286	1.27E-06 (J)	4.54E-06	2.99E-06	0.0000393	1.26E-06 (J)
RE73-06-67765	73-25600	0.0–0.25	Soil	4.18E-07 (J)	0.0000229	8.36E-07 (J)	2.23E-06 (J)	1.96E-06 (J)	0.0000194	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Heptachlorodibenzo furan[1,2,3,4,7,8,9-]	Heptachlorodibenzo furans (Total)	Hexachlorodibenzo dioxin[1,2,3,4,7,8-]	Hexachlorodibenzo dioxin[1,2,3,6,7,8-]	Hexachlorodibenzo dioxin[1,2,3,7,8,9-]	Hexachlorodibenzo dioxins (Total)	Hexachlorodibenzo furan[1,2,3,4,7,8-]
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
RE73-06-67766	73-25601	0.0–0.25	Soil	—	5.53E-06	—	—	—	7.64E-07	2.07E-07 (J)
RE73-06-67770	73-25605	0.0–0.25	Soil	1.97E-07 (J)	7.85E-06 (J)	3.02E-07 (J)	—	6.27E-07 (J)	6.36E-06	—
RE73-06-67771	73-25606	0.0–0.25	Soil	—	1.26E-05 (J)	4.56E-07 (J)	1.01E-06 (J)	9.05E-07 (J)	0.0000122	8.7E-07 (J)
RE73-06-67772	73-25607	0.0–0.25	Soil	—	1.12E-05 (J)	8.44E-07 (J)	1.2E-06 (J)	0.0000026	0.0000145	4.93E-07 (J)
RE73-06-67773	73-25608	0.0–0.25	Soil	—	2.07E-06 (J)	1.46E-07 (J)	2.65E-07 (J)	3.13E-07 (J)	2.58E-06	—
RE73-06-67774	73-25609	0.0–0.25	Soil	—	5.49E-06 (J)	—	—	—	3.14E-06	5.41E-07 (J)
RE73-06-67775	73-25610	0.0–0.25	Soil	2.11E-07 (J)	5.5E-06 (J)	2.88E-07 (J)	4.55E-07 (J)	5.39E-07 (J)	5.06E-06	3.67E-07 (J)
RE73-06-67776	73-25611	0.0–0.25	Soil	—	1.07E-06 (J)	—	—	—	7.63E-07	—
RE73-06-67777	73-25612	0.0–0.25	Soil	—	4.65E-06	—	—	—	3.36E-06	5.35E-07 (J)
RE73-06-67778	73-25613	0.0–0.25	Soil	—	3.08E-06	—	—	—	3.19E-06	—
RE73-06-67779	73-25614	0.0–0.25	Soil	6.09E-07 (J)	0.0000198	8.48E-07 (J)	1.42E-06 (J)	1.52E-06 (J)	0.0000153	9.91E-07 (J)
RE73-06-67780	73-25615	0.0–0.25	Soil	—	0.0000099	—	1.03E-06 (J)	8.3E-07 (J)	0.0000119	7.04E-07 (J)
RE73-06-67781	73-25616	0.0–0.25	Soil	—	3.77E-06	—	—	—	2.16E-06	—
RE73-06-67782	73-25617	0.0–0.25	Soil	—	6.11E-06	—	—	—	3.64E-06	—
RE73-06-67783	73-25618	0.0–0.25	Soil	—	3.46E-06	—	—	—	2.69E-06	—
RE73-06-67784	73-25619	0.0–0.25	Soil	—	2.11E-06	—	—	—	4.2E-07	—
RE73-06-67785	73-25620	0.0–0.25	Soil	—	—	—	—	—	1.33E-06	—
RE73-07-74726	73-27279	0.0–1.0	Soil	—	0.00001	—	9.1E-07 (J)	—	0.000005	5.6E-07 (J)
RE73-07-74727	73-27279	1.5–2.75	Qbt 3	—	0.0000003	—	—	—	—	—
RE73-07-74728	73-27279	3.5–4.5	Qbt 3	—	1.21E-06	—	—	—	—	—
RE73-07-74729	73-27280	0.0–1.5	Soil	—	0.000015	—	1.09E-06 (J)	8.4E-07 (J)	8.76E-06	6.5E-07 (J)
RE73-07-74730	73-27280	1.5–2.5	Qbt 3	—	0.0000016	—	—	—	9.8E-07	2.3E-07 (J)

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Heptachlorodibenzo furan[1,2,3,4,7,8,9-]	Heptachlorodibenzo furans (Total)	Hexachlorodibenzo dioxin[1,2,3,4,7,8-]	Hexachlorodibenzo dioxin[1,2,3,6,7,8-]	Hexachlorodibenzo dioxin[1,2,3,7,8,9-]	Hexachlorodibenzo dioxins (Total)	Hexachlorodibenzo furan[1,2,3,4,7,8-]
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
RE73-07-74731	73-27280	3.5–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76485	73-27281	0.0–0.5	Soil	2.23E-06 (J)	0.000058	2.56E-06	5.09E-06	4.48E-06	0.0000536	5.12E-06
RE73-07-74733	73-27281	1.5–2.5	Qbt 3	4.5E-07 (J)	0.0000193	7.0E-07 (J)	1.51E-06 (J)	1.26E-06 (J)	0.0000139	8.6E-07 (J)
RE73-07-74734	73-27281	3.5–4.5	Qbt 3	3.0E-07 (J)	0.0000123	4.2E-07 (J)	1.16E-06 (J)	0.000001 (J)	0.00001	6.1E-07 (J)
RE73-07-74735	73-27282	0.0–2.0	Soil	5.1E-07 (J)	0.0000241	7.6E-07 (J)	1.95E-06 (J)	1.52E-06 (J)	0.0000195	1.23E-06 (J)
RE73-07-74736	73-27282	2.5–3.7	Qbt 3	—	3.9E-07	—	—	—	—	—
RE73-07-74737	73-27282	4.0–5.0	Qbt 3	—	5.4E-07	—	—	—	—	—
RE73-07-74739	73-27283	0.0–1.0	Soil	—	0.000011	—	—	—	7.32E-06	—
RE73-07-74738	73-27283	1.0–2.0	Qbt 3	—	1.27E-06	—	—	—	—	—
RE73-07-74741	73-27284	0.0–2.0	Soil	—	3.39E-06	—	3.4E-07 (J)	2.7E-07 (J)	2.41E-06	2.2E-07 (J)
RE73-07-74742	73-27284	2.0–3.0	Qbt 3	3.5E-07 (J)	1.86E-06	—	1.01E-06 (J)	5.2E-07 (J)	6.01E-06	3.6E-07 (J)
RE73-07-74744	73-27285	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74747	73-27286	0.0–2.0	Soil	—	9.2E-07	—	—	—	9.4E-07	9E-08 (J)
RE73-07-74748	73-27286	2.0–3.0	Qbt 3	—	8.1E-07	—	—	—	—	—
RE73-07-74749	73-27286	3.0–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74750	73-27287	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74751	73-27287	1.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74752	73-27287	3.0–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74753	73-27288	0.0–1.5	Soil	—	—	—	—	—	—	—
RE73-07-74756	73-27289	0.0–2.5	Qbt 3	—	3.87E-06	—	5.5E-07 (J)	—	5.5E-07	1.47E-06 (J)
RE73-07-74757	73-27289	3.0–4.0	Qbt 3	—	—	—	—	—	1.01E-06	—
RE73-07-74759	73-27290	0.0–1.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Heptachlorodibenzo furan[1,2,3,4,7,8,9-]	Heptachlorodibenzo furans (Total)	Hexachlorodibenzo dioxin[1,2,3,4,7,8-]	Hexachlorodibenzo dioxin[1,2,3,6,7,8-]	Hexachlorodibenzo dioxin[1,2,3,7,8,9-]	Hexachlorodibenzo dioxins (Total)	Hexachlorodibenzo furan[1,2,3,4,7,8-]
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
RE73-07-74762	73-27291	0.0–2.0	Soil	—	1.63E-06	—	—	—	1.94E-06	—
RE73-07-74763	73-27291	2.0–3.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74765	73-27292	0.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74766	73-27292	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74768	73-27293	0.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74769	73-27293	1.5–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74770	73-27293	3.0–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74771	73-27294	0.0–1.5	Qbt 3	1.6E-07 (J)	4.95E-06	—	—	—	2.39E-06	7.8E-07 (J)
RE73-07-74772	73-27294	2.0–3.0	Qbt 3	—	3.8E-07	—	—	—	—	—
RE73-07-74774	73-27295	0.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74775	73-27295	2.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76503	73-27296	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76504	73-27296	2.0–2.5	Qbt 3	—	1.28E-06	—	—	—	1.41E-06	—
RE73-07-74780	73-27297	0.0–0.5	Qbt 3	—	8.15E-06	—	8.2E-07 (J)	5.7E-07 (J)	7.37E-06	5.8E-07 (J)
RE73-07-74783	73-27298	0.0–1.0	Soil	—	5.46E-06	—	7.9E-07 (J)	5.9E-07 (J)	6.55E-06	—
RE73-07-76491	73-27298	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74790	73-27299	0.0–1.5	Qbt 3	—	4.58E-06	—	6.7E-07 (J)	—	4.42E-06	5.6E-07 (J)
RE73-07-74791	73-27299	2.0–3.5	Qbt 3	2.9E-07 (J)	0.0000111	4.1E-07 (J)	1.31E-06 (J)	9.9E-07 (J)	0.0000115	1.14E-06 (J)
RE73-07-74793	73-27300	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74794	73-27300	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74796	73-27301	0.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74799	73-27302	0.0–0.5	Qbt 3	—	2.46E-06	—	3.28E-07 (J)	—	1.03E-07	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Heptachlorodibenzofuran[1,2,3,4,7,8,9-]	Heptachlorodibenzofurans (Total)	Hexachlorodibenzodioxin[1,2,3,4,7,8-]	Hexachlorodibenzodioxin[1,2,3,6,7,8-]	Hexachlorodibenzodioxin[1,2,3,7,8,9-]	Hexachlorodibenzodioxins (Total)	Hexachlorodibenzofuran[1,2,3,4,7,8-]
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
RE73-07-74800	73-27302	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74802	73-27303	0.0–0.5	Qbt 3	7.99E-07 (J)	0.000016	7.81E-07 (J)	1.70E-06 (J)	1.44E-06 (J)	0.0000126	1.26E-06 (J)
RE73-07-74803	73-27303	1.0–1.5	Qbt 3	7.19E-07 (J)	0.0000158	5.8E-07 (J)	1.45E-06 (J)	1.10E-06 (J)	0.00001	1.17E-06 (J)
RE73-07-74805	73-27304	0.0–0.5	Qbt 3	—	1.48E-06	—	—	—	1.56E-06	—
RE73-07-74806	73-27304	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74808	73-27305	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74811	73-27306	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74814	73-27307	0.0–0.5	Soil	—	0.0000021	—	2.37E-07 (J)	—	1.67E-06	2.17E-07 (J)
RE73-07-74815	73-27307	2.0–2.5	Qbt 3	—	1.14E-06	—	3.36E-07 (J)	3.49E-07 (J)	2.62E-06	-
RE73-07-74819	73-27308	4.0–4.5	Soil	5.9E-07 (J)	0.0000176	05.0E-07 (J)	6.0E-07 (J)	6.1E-07 (J)	0.000006	0.0000042
RE73-07-74820	73-27309	0.0–0.5	Qbt 3	—	1.13E-06	—	—	—	1.47E-06	—
RE73-07-74821	73-27309	2.0–2.5	Qbt 3	—	2.51E-07	—	—	—	—	1.31E-07 (J)
RE73-07-74823	73-27310	0.0–0.5	Qbt 3	—	9.66E-06	6.46E-07 (J)	1.40E-06 (J)	1.53E-06 (J)	8.65E-06	4.55E-07 (J)
RE73-07-74824	73-27310	2.0–2.5	Qbt 3	—	1.35E-06	—	—	2.66E-07 (J)	1.01E-06	—
RE73-07-74829	73-27312	0.0–0.5	Qbt 3	—	2.76E-07	—	—	—	—	—
RE73-07-74830	73-27312	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74832	73-27313	0.0–0.5	Qbt 3	—	8.94E-07	—	—	—	1.21E-06	—
RE73-07-74833	73-27313	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74835	73-27314	0.0–0.5	Soil	—	3.18E-06	3.16E-07 (J)	—	4.26E-07 (J)	4.32E-06	—
RE73-07-74841	73-27316	0.0–1.0	Soil	—	9.55E-06	—	8.9E-07 (J)	8.7E-07 (J)	0.0000043	—
RE73-07-74842	73-27316	1.0–2.0	Qbt 3	—	3.61E-06	—	—	—	7.2E-07	—
RE73-07-74850	73-27319	0.0–0.5	Qbt 3	3.82E-07 (J)	8.36E-06	6.34E-07 (J)	9.87E-07 (J)	8.27E-07 (J)	0.0000119	1.06E-06 (J)

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Heptachlorodibenzo furan[1,2,3,4,7,8,9-]	Heptachlorodibenzo furans (Total)	Hexachlorodibenzo dioxin[1,2,3,4,7,8-]	Hexachlorodibenzo dioxin[1,2,3,6,7,8-]	Hexachlorodibenzo dioxin[1,2,3,7,8,9-]	Hexachlorodibenzo dioxins (Total)	Hexachlorodibenzo furan[1,2,3,4,7,8-]
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
RE73-07-74851	73-27319	2.0–2.5	Qbt 3	—	0.000001	—	—	—	9.48E-07	—
RE73-07-76473	73-27678	0.0–0.5	Soil	—	9.45E-06	—	3.57E-07 (J)	2.05E-07 (J)	2.65E-06	—
RE73-07-76474	73-27678	3.5–4.0	Qbt 3	—	2.16E-06	—	—	—	—	—
RE73-07-76475	73-27678	5.5–6.0	Qbt 3	—	4.29E-06	—	1.85E-07 (J)	—	1.21E-06	—
RE73-07-76476	73-27679	0.0–0.5	Qbt 3	—	9.31E-07	—	—	—	5.19E-07	—
RE73-07-76477	73-27679	2.0–2.5	Qbt 3	—	—	—	—	—	3.7E-07	—
RE73-07-76479	73-27680	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76480	73-27680	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76482	73-27681	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76483	73-27681	2.0–2.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Hexachlorodibenzofuran [1,2,3,6,7,8-]	Hexachlorodibenzofuran [1,2,3,7,8,9-]	Hexachlorodibenzofuran [2,3,4,6,7,8-]	Hexachlorodibenzofurans (Total)	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[2-]	Naphthalene
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**				**6.21**	**79.5[h]**	**79.5**
0173-96-0308	73-02255	0.0–0.5	Soil	NA	NA	NA	NA	NA	NA	NA
0173-97-0311	73-02451	0.1–0.5	Soil	—	—	—	—	—	—	—
0173-97-0322	73-02458	0.1–0.5	Soil	—	—	—	1.3E-06 (J)	—	—	—
RE73-06-67646	73-25561	1.0–2.0	Soil	—	—	—	5.47E-06	—	—	—
RE73-07-74671	73-25561	3.5–5.0	Soil	—	—	—	2.2E-07	—	—	—
RE73-06-67649	73-25562	0.0–0.5	Soil	—	—	—	1.01E-06	—	—	—
RE73-06-67650	73-25562	1.0–2.0	Soil	—	—	—	1.92E-07	—	—	—
RE73-07-74673	73-25562	2.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67652	73-25563	0.0–0.5	Soil	—	—	—	9.47E-07	—	—	—
RE73-06-67653	73-25563	1.0–2.0	Soil	—	—	—	—	—	—	—
RE73-07-74675	73-25563	3.0–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76488	73-25564	0.0–0.5	Qbt 3	1.38E-07 (J)	—	2.7E-07 (J)	3.36E-06	—	—	—
RE73-07-74678	73-25564	2.5–3.0	Qbt 3	—	—	—	6.7E-07	—	—	—
RE73-07-74679	73-25565	0.0–1.0	Soil	3.4E-07 (J)	—	4.3E-07 (J)	5.72E-06	—	—	—
RE73-07-74680	73-25565	3.0–4.0	Soil	1.4E-06 (J)	—	1.85E-06 (J)	0.0000165	—	—	—
RE73-06-67662	73-25566	1.0–2.0	Soil	—	—	—	1.64E-06	—	—	—
RE73-07-74715	73-25566	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67664	73-25567	0.0–0.5	Soil	—	—	—	1.53E-06	—	—	—
RE73-07-74683	73-25567	2.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74685	73-25568	0.0–1.0	Soil	1.32E-06 (J)	3.8E-07 (J)	1.48E-06 (J)	0.0000161	—	—	—
RE73-07-74686	73-25568	1.25–2.0	Qbt 3	1.5E-07 (J)	—	—	1.17E-06	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Hexachlorodibenzofuran [1,2,3,6,7,8-]	Hexachlorodibenzofuran [1,2,3,7,8,9-]	Hexachlorodibenzofuran [2,3,4,6,7,8-]	Hexachlorodibenzofurans (Total)	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[2-]	Naphthalene
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**				**6.21**	**79.5[h]**	**79.5**
RE73-07-74717	73-25568	3.0–4.5	Qbt 3	3.0E-07 (J)	—	3.4E-07 (J)	3.08E-06	—	—	—
RE73-07-74687	73-25569	0.0–0.5	Soil	1.02E-07 (J)	—	1.17E-07 (J)	9.08E-07	—	—	—
RE73-06-67671	73-25569	2.0–3.0	Soil	—	—	—	—	—	—	—
RE73-07-74688	73-25569	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74689	73-25570	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74690	73-25570	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74692	73-25571	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74693	73-25572	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74694	73-25572	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74695	73-25573	0.0–0.5	Qbt 3	—	—	—	1.18E-07	—	—	—
RE73-07-74696	73-25573	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74697	73-25574	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74698	73-25574	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74699	73-25575	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74700	73-25575	1.5–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67758	73-25593	0.0–0.25	Soil	6.75E-07 (J)	—	7.66E-07 (J)	8.58E-06	0.0272 (J)	—	—
RE73-06-67759	73-25594	0.0–0.25	Soil	8.78E-07 (J)	—	1.17E-06 (J)	0.0000148	0.169 (J)	—	—
RE73-06-67760	73-25595	0.0–0.25	Soil	3.78E-07 (J)	—	4.65E-07 (J)	5.42E-06	0.0348 (J)	—	—
RE73-06-67761	73-25596	0.0–0.25	Soil	2.62E-07 (J)	—	3.33E-07 (J)	0.0000042	0.0726 (J)	—	—
RE73-06-67762	73-25597	0.0–0.25	Soil	3.89E-07 (J)	—	4.79E-07 (J)	6.01E-06	0.025 (J)	—	—
RE73-06-67763	73-25598	0.0–0.25	Soil	—	—	4.03E-07 (J)	0.0000044	0.0519 (J)	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Hexachlorodibenzofuran [1,2,3,6,7,8-]	Hexachlorodibenzofuran [1,2,3,7,8,9-]	Hexachlorodibenzofuran [2,3,4,6,7,8-]	Hexachlorodibenzofurans (Total)	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[2-]	Naphthalene
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**				**6.21**	**79.5[h]**	**79.5**
RE73-06-67764	73-25599	0.0–0.25	Soil	1.14E-06 (J)	—	1.46E-06 (J)	0.000018	—	—	—
RE73-06-67765	73-25600	0.0–0.25	Soil	5.72E-07 (J)	—	7.45E-07 (J)	8.62E-06	0.12 (J)	—	—
RE73-06-67766	73-25601	0.0–0.25	Soil	1.61E-07 (J)	—	2.76E-07 (J)	3.29E-06	—	0.00741(J)	—
RE73-06-67770	73-25605	0.0–0.25	Soil	5.88E-07 (J)	—	1.17E-06 (J)	1.39E-05 (J)	—	—	—
RE73-06-67771	73-25606	0.0–0.25	Soil	8.24E-07 (J)	—	1.2E-06 (J)	1.63E-05 (J)	—	—	—
RE73-06-67772	73-25607	0.0–0.25	Soil	4.12E-07 (J)	—	6.12E-07 (J)	7.34E-06 (J)	—	—	—
RE73-06-67773	73-25608	0.0–0.25	Soil	1.4E-07 (J)	—	1.71E-07 (J)	1.62E-06 (J)	—	—	—
RE73-06-67774	73-25609	0.0–0.25	Soil	—	—	5.5E-07 (J)	5.6E-06 (J)	—	—	—
RE73-06-67775	73-25610	0.0–0.25	Soil	2.81E-07 (J)	—	3.71E-07 (J)	4.59E-06 (J)	—	—	—
RE73-06-67776	73-25611	0.0–0.25	Soil	1.03E-07 (J)	—	—	9.7E-07 (J)	—	—	—
RE73-06-67777	73-25612	0.0–0.25	Soil	3.68E-07 (J)	—	—	3.36E-06	—	—	—
RE73-06-67778	73-25613	0.0–0.25	Soil	—	—	—	1.99E-06	—	—	—
RE73-06-67779	73-25614	0.0–0.25	Soil	7.92E-07 (J)	—	8.35E-07 (J)	0.0000111	—	—	—
RE73-06-67780	73-25615	0.0–0.25	Soil	7.29E-07 (J)	—	6.68E-07 (J)	7.88E-06	—	—	—
RE73-06-67781	73-25616	0.0–0.25	Soil	—	—	2.25E-07 (J)	1.68E-06	—	—	—
RE73-06-67782	73-25617	0.0–0.25	Soil	—	—	—	2.81E-06	—	—	—
RE73-06-67783	73-25618	0.0–0.25	Soil	—	—	—	1.66E-06	—	—	—
RE73-06-67784	73-25619	0.0–0.25	Soil	—	—	—	8.55E-07	—	—	—
RE73-06-67785	73-25620	0.0–0.25	Soil	—	—	—	4.17E-07	—	—	—
RE73-07-74726	73-27279	0.0–1.0	Soil	4.8E-07 (J)	—	5.3E-07 (J)	5.97E-06	—	—	—
RE73-07-74727	73-27279	1.5–2.75	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Hexachlorodibenzofuran [1,2,3,6,7,8-]	Hexachlorodibenzofuran [1,2,3,7,8,9-]	Hexachlorodibenzofuran [2,3,4,6,7,8-]	Hexachlorodibenzofurans (Total)	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[2-]	Naphthalene
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**				**6.21**	**79.5[h]**	**79.5**
RE73-07-74728	73-27279	3.5–4.5	Qbt 3	—	—	—	3.6E-07	—	—	—
RE73-07-74729	73-27280	0.0–1.5	Soil	6.4E-07 (J)	—	7.2E-07 (J)	7.14E-06	—	—	—
RE73-07-74730	73-27280	1.5–2.5	Qbt 3	2.1E-07 (J)	—	2.2E-07 (J)	0.0000019	—	—	—
RE73-07-74731	73-27280	3.5–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76485	73-27281	0.0–0.5	Soil	4.86E-06	1.26E-06 (J)	6.88E-06	0.0000576	—	—	—
RE73-07-74733	73-27281	1.5–2.5	Qbt 3	9.1E-07 (J)	—	1.07E-06 (J)	0.0000105	—	0.0244 (J)	0.0242 (J)
RE73-07-74734	73-27281	3.5–4.5	Qbt 3	7.3E-07 (J)	—	9.5E-07 (J)	8.18E-06	—	0.011 (J)	—
RE73-07-74735	73-27282	0.0–2.0	Soil	1.12E-06 (J)	2.8E-07 (J)	1.25E-06 (J)	0.0000154	—	—	—
RE73-07-74736	73-27282	2.5–3.7	Qbt 3	—	—	—	1.2E-07	—	—	—
RE73-07-74737	73-27282	4.0–5.0	Qbt 3	—	—	—	2.9E-07	—	—	—
RE73-07-74739	73-27283	0.0–1.0	Soil	5.0E-07 (J)	—	7.4E-07 (J)	6.85E-06	—	—	—
RE73-07-74738	73-27283	1.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74741	73-27284	0.0–2.0	Soil	—	—	2.8E-07 (J)	3.32E-06	—	—	—
RE73-07-74742	73-27284	2.0–3.0	Qbt 3	—	3.0E-07 (J)	—	1.49E-06	—	—	—
RE73-07-74744	73-27285	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74747	73-27286	0.0–2.0	Soil	—	—	—	2.8E-07	—	—	—
RE73-07-74748	73-27286	2.0–3.0	Qbt 3	—	—	—	1.1E-07	—	—	—
RE73-07-74749	73-27286	3.0–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74750	73-27287	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74751	73-27287	1.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74752	73-27287	3.0–4.0	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Hexachlorodibenzofuran [1,2,3,6,7,8-]	Hexachlorodibenzofuran [1,2,3,7,8,9-]	Hexachlorodibenzofuran [2,3,4,6,7,8-]	Hexachlorodibenzofurans (Total)	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[2-]	Naphthalene
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**				**6.21**	**79.5[h]**	**79.5**
RE73-07-74753	73-27288	0.0–1.5	Soil	—	—	—	—	—	—	—
RE73-07-74756	73-27289	0.0–2.5	Qbt 3	1.45E-06 (J)	—	1.49E-06 (J)	0.0000124	—	—	—
RE73-07-74757	73-27289	3.0–4.0	Qbt 3	—	—	—	3.5E-07	—	—	—
RE73-07-74759	73-27290	0.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74762	73-27291	0.0–2.0	Soil	—	—	—	5.2E-07	—	—	—
RE73-07-74763	73-27291	2.0–3.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74765	73-27292	0.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74766	73-27292	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74768	73-27293	0.0–1.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74769	73-27293	1.5–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74770	73-27293	3.0–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74771	73-27294	0.0–1.5	Qbt 3	6.7E-07 (J)	—	—	5.52E-06	—	—	—
RE73-07-74772	73-27294	2.0–3.0	Qbt 3	—	—	—	2.5E-07	—	—	—
RE73-07-74774	73-27295	0.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74775	73-27295	2.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76503	73-27296	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76504	73-27296	2.0–2.5	Qbt 3	—	—	—	4.32E-07	—	—	—
RE73-07-74780	73-27297	0.0–0.5	Qbt 3	5.7E-07 (J)	—	6.3E-07 (J)	7.72E-06	—	—	—
RE73-07-74783	73-27298	0.0–1.0	Soil	3.6E-07 (J)	—	3.5E-07 (J)	3.19E-06	—	—	—
RE73-07-76491	73-27298	2.0–2.5	Qbt 3	—	—	—	1.06E-07	—	—	—
RE73-07-74790	73-27299	0.0–1.5	Qbt 3	5.4E-07 (J)	—	5.4E-07 (J)	4.87E-06	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Hexachlorodibenzofuran [1,2,3,6,7,8-]	Hexachlorodibenzofuran [1,2,3,7,8,9-]	Hexachlorodibenzofuran [2,3,4,6,7,8-]	Hexachlorodibenzofurans (Total)	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[2-]	Naphthalene
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**				**6.21**	**79.5[h]**	**79.5**
RE73-07-74791	73-27299	2.0–3.5	Qbt 3	8.8E-07 (J)	—	1.09E-06 (J)	9.25E-06	—	—	—
RE73-07-74793	73-27300	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74794	73-27300	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74796	73-27301	0.0–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74799	73-27302	0.0–0.5	Qbt 3	1.27E-07 (J)	—	2.05E-07 (J)	1.53E-06	—	—	—
RE73-07-74800	73-27302	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74802	73-27303	0.0–0.5	Qbt 3	1.15E-06 (J)	3.67E-07 (J)	1.34E-06 (J)	0.000014	—	—	—
RE73-07-74803	73-27303	1.0–1.5	Qbt 3	1.04E-06 (J)	2.87E-07 (J)	1.21E-06 (J)	0.0000126	—	—	—
RE73-07-74805	73-27304	0.0–0.5	Qbt 3	—	—	—	5.51E-07	—	—	—
RE73-07-74806	73-27304	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74808	73-27305	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74811	73-27306	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74814	73-27307	0.0–0.5	Soil	1.76E-07 (J)	—	1.95E-07 (J)	1.75E-06	—	—	—
RE73-07-74815	73-27307	2.0–2.5	Qbt 3	1.55E-07 (J)	—	1.47E-07 (J)	9.7E-07	—	—	—
RE73-07-74819	73-27308	4.0–4.5	Soil	0.0000041	1.15E-06 (J)	7.14E-06	0.000056	—	—	—
RE73-07-74820	73-27309	0.0–0.5	Qbt 3	—	—	—	5.39E-07	—	—	—
RE73-07-74821	73-27309	2.0–2.5	Qbt 3	—	—	—	4.89E-07	—	—	—
RE73-07-74823	73-27310	0.0–0.5	Qbt 3	—	—	6.47E-07 (J)	6.35E-06	—	—	—
RE73-07-74824	73-27310	2.0–2.5	Qbt 3	—	—	—	7.82E-07	—	—	—
RE73-07-74829	73-27312	0.0–0.5	Qbt 3	—	—	—	2.34E-07	—	—	—
RE73-07-74830	73-27312	2.0–2.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Hexachlorodibenzofuran [1,2,3,6,7,8-]	Hexachlorodibenzofuran [1,2,3,7,8,9-]	Hexachlorodibenzofuran [2,3,4,6,7,8-]	Hexachlorodibenzofurans (Total)	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[2-]	Naphthalene
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**				**6.21**	**79.5[h]**	**79.5**
RE73-07-74832	73-27313	0.0–0.5	Qbt 3	—	—	—	6.36E-07	—	—	—
RE73-07-74833	73-27313	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74835	73-27314	0.0–0.5	Soil	2.42E-07 (J)	—	2.7E-07 (J)	2.03E-06	—	—	—
RE73-07-74841	73-27316	0.0–1.0	Soil	—	—	—	4.11E-06	—	0.00757 (J)	—
RE73-07-74842	73-27316	1.0–2.0	Qbt 3	—	—	—	1.34E-06	—	—	—
RE73-07-74850	73-27319	0.0–0.5	Qbt 3	9.43E-07 (J)	2.91E-07 (J)	1.50E-06 (J)	0.00001	—	—	—
RE73-07-74851	73-27319	2.0–2.5	Qbt 3	1.61E-07 (J)	—	2.79E-07 (J)	5.99E-07	—	—	—
RE73-07-76473	73-27678	0.0–0.5	Soil	—	—	—	0.0000023	—	—	—
RE73-07-76474	73-27678	3.5–4.0	Qbt 3	—	—	—	3.39E-07	—	—	—
RE73-07-76475	73-27678	5.5–6.0	Qbt 3	—	—	—	1.06E-06	—	—	—
RE73-07-76476	73-27679	0.0–0.5	Qbt 3	—	—	—	1.4E-07	—	—	—
RE73-07-76477	73-27679	2.0–2.5	Qbt 3	—	—	—	1.31E-07	—	—	—
RE73-07-76479	73-27680	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76480	73-27680	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76482	73-27681	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76483	73-27681	2.0–2.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Octachlorodibenzodioxin [1,2,3,4,6,7,8,9-]	Octachlorodibenzofuran [1,2,3,4,6,7,8,9-]	Pentachlorodibenzodioxin [1,2,3,7,8-]	Pentachlorodibenzodioxins (Total)	Pentachlorodibenzofuran [1,2,3,7,8-]	Pentachlorodibenzofuran [2,3,4,7,8-]	Pentachlorodibenzofurans (Totals)
Residential Soil Screening Levels[a]				**SSLs not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
0173-96-0308	73-02255	0.0–0.5	Soil	NA	NA	NA	NA	NA	NA	NA
0173-97-0311	73-02451	0.1–0.5	Soil	—	7.1E-07 (J)	—	—	—	—	—
0173-97-0322	73-02458	0.1–0.5	Soil	—	2.5E-06 (J)	—	—	—	—	1.9E-06 (J)
RE73-06-67646	73-25561	1.0–2.0	Soil	0.0000844	7.98E-06	4.85E-07 (J)	4.85E-07	—	—	1.97E-06
RE73-07-74671	73-25561	3.5–5.0	Soil	3.63E-06 (J)	—	—	—	—	—	—
RE73-06-67649	73-25562	0.0–0.5	Soil	0.0000383	4.22E-06 (J)	—	—	—	—	7.05E-07
RE73-06-67650	73-25562	1.0–2.0	Soil	0.0000108	—	—	—	—	—	—
RE73-07-74673	73-25562	2.5–4.0	Qbt 3	1.52E-06 (J)	—	—	—	—	—	—
RE73-06-67652	73-25563	0.0–0.5	Soil	0.0000254	—	—	3.94E-07	—	—	1.28E-06
RE73-06-67653	73-25563	1.0–2.0	Soil	2.67E-06 (J)	—	—	—	—	—	—
RE73-07-74675	73-25563	3.0–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-76488	73-25564	0.0–0.5	Qbt 3	0.0000352	2.36E-06 (J)	1.74E-07 (J)	5.96E-07	—	—	4.18E-06
RE73-07-74678	73-25564	2.5–3.0	Qbt 3	6.28E-06	9.1E-07 (J)	—	—	—	—	5.4E-07
RE73-07-74679	73-25565	0.0–1.0	Soil	0.000123	7.17E-06	2.3E-07 (J)	1.62E-06	2.3E-07 (J)	5.8E-07 (J)	6.85E-06
RE73-07-74680	73-25565	3.0–4.0	Soil	0.00011	0.000011	6.5E-07 (J)	0.0000105	9.1E-07 (J)	2.01E-06 (J)	0.0000201
RE73-06-67662	73-25566	1.0–2.0	Soil	0.0000547	3.54E-06 (J)	—	7.25E-07	—	—	—
RE73-07-74715	73-25566	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67664	73-25567	0.0–0.5	Soil	0.0000314	1.81E-06 (J)	—	9.07E-07	—	—	6.09E-07
RE73-07-74683	73-25567	2.5–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74685	73-25568	0.0–1.0	Soil	0.000251	0.0000167	1.3E-06 (J)	8.16E-06	8.7E-07 (J)	1.27E-06 (J)	0.0000129
RE73-07-74686	73-25568	1.25–2.0	Qbt 3	0.0000263	1.85E-06 (J)	1.6E-07 (J)	3.2E-07	—	1.56E-06 (J)	6.5E-07

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Octachlorodibenzodioxin [1,2,3,4,6,7,8,9-]	Octachlorodibenzofuran [1,2,3,4,6,7,8,9-]	Pentachlorodibenzodioxin [1,2,3,7,8-]	Pentachlorodibenzodioxins (Total)	Pentachlorodibenzofuran [1,2,3,7,8-]	Pentachlorodibenzofuran [2,3,4,7,8-]	Pentachlorodibenzofurans (Totals)
Residential Soil Screening Levels[a]				**SSLs not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
RE73-07-74717	73-25568	3.0–4.5	Qbt 3	0.0000608	4.26E-06 (J)	3.1E-07 (J)	1.21E-06	—	3.1E-07 (J)	2.47E-06
RE73-07-74687	73-25569	0.0–0.5	Soil	0.0000215	1.83E-06 (J)	—	3.5E-07	—	1.62E-07 (J)	4.69E-07
RE73-06-67671	73-25569	2.0–3.0	Soil	—	—	—	—	—	—	—
RE73-07-74688	73-25569	2.0–2.5	Qbt 3	1.54E-06 (J)	2.39E-07 (J)	—	—	—	—	—
RE73-07-74689	73-25570	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74690	73-25570	2.0–2.5	Qbt 3	2.26E-07 (J)	—	—	—	—	—	—
RE73-07-74692	73-25571	2.0–2.5	Qbt 3	3.48E-07 (J)	—	—	—	—	—	—
RE73-07-74693	73-25572	0.0–0.5	Qbt 3	5.67E-07 (J)	—	—	—	—	—	—
RE73-07-74694	73-25572	2.0–2.5	Qbt 3	3.00E-07 (J)	—	—	—	—	—	—
RE73-07-74695	73-25573	0.0–0.5	Qbt 3	3.25E-06 (J)	3.32E-07 (J)	—	—	—	—	—
RE73-07-74696	73-25573	2.0–2.5	Qbt 3	6.72E-07 (J)	—	—	—	—	—	—
RE73-07-74697	73-25574	0.0–0.5	Qbt 3	7.34E-07 (J)	—	—	—	—	—	—
RE73-07-74698	73-25574	2.0–2.5	Qbt 3	3.84E-07 (J)	—	—	—	—	—	—
RE73-07-74699	73-25575	0.0–0.5	Qbt 3	5.82E-07 (J)	—	—	—	—	—	—
RE73-07-74700	73-25575	1.5–2.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67758	73-25593	0.0–0.25	Soil	0.000171 (J)	9.08E-06	7.31E-07 (J)	3.23E-06	3.13E-07 (J)	6.49E-07 (J)	6.16E-06
RE73-06-67759	73-25594	0.0–0.25	Soil	0.000644 (J)	0.000015	1.48E-06 (J)	0.0000075	5.02E-07 (J)	8.49E-07 (J)	9.75E-06
RE73-06-67760	73-25595	0.0–0.25	Soil	0.000186 (J)	5.59E-06	5.26E-07 (J)	2.26E-06	1.84E-07 (J)	3.76E-07 (J)	3.78E-06
RE73-06-67761	73-25596	0.0–0.25	Soil	0.000133 (J)	4.64E-06 (J)	3.56E-07 (J)	1.21E-06	—	3.06E-07 (J)	0.0000025
RE73-06-67762	73-25597	0.0–0.25	Soil	0.000123 (J)	6.79E-06	4.07E-07 (J)	2.19E-06	—	5.41E-07 (J)	4.41E-06
RE73-06-67763	73-25598	0.0–0.25	Soil	0.000143 (J)	4.82E-06 (J)	4.94E-07 (J)	2.24E-06	—	3.63E-07 (J)	2.72E-06

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Octachlorodibenzodioxin [1,2,3,4,6,7,8,9-]	Octachlorodibenzofuran [1,2,3,4,6,7,8,9-]	Pentachlorodibenzodioxin [1,2,3,7,8-]	Pentachlorodibenzodioxins (Total)	Pentachlorodibenzofuran [1,2,3,7,8-]	Pentachlorodibenzofuran [2,3,4,7,8-]	Pentachlorodibenzofurans (Totals)
Residential Soil Screening Levels[a]				**SSLs not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
RE73-06-67764	73-25599	0.0–0.25	Soil	0.000833 (J)	0.0000169	1.38E-06 (J)	6.47E-06	5.75E-07 (J)	1.36E-06 (J)	0.0000129
RE73-06-67765	73-25600	0.0–0.25	Soil	0.000317 (J)	0.0000122	7.32E-07 (J)	3.35E-06	—	4.35E-07 (J)	4.92E-06
RE73-06-67766	73-25601	0.0–0.25	Soil	5.91E-05 (J)	4.33E-06 (J)	—	—	—	3.87E-07 (J)	0.000003
RE73-06-67770	73-25605	0.0–0.25	Soil	6.97E-05 (J)	3.66E-06 (J)	3.2E-07 (J)	1.82E-06	—	1.82E-06 (J)	0.0000236
RE73-06-67771	73-25606	0.0–0.25	Soil	0.000107 (J)	8.85E-06	—	5.43E-06	6.41E-07 (J)	1.84E-06 (J)	0.0000253
RE73-06-67772	73-25607	0.0–0.25	Soil	0.000644 (J)	0.0000141	7.91E-07 (J)	4.19E-06	3.11E-07 (J)	8.2E-07 (J)	9.36E-06
RE73-06-67773	73-25608	0.0–0.25	Soil	3.55E-05 (J)	1.86E-06 (J)	—	—	—	2.51E-07 (J)	1.87E-06
RE73-06-67774	73-25609	0.0–0.25	Soil	8.38E-05 (J)	4.8E-06 (J)	—	7.23E-07	4.07E-07 (J)	1.13E-06 (J)	0.0000104
RE73-06-67775	73-25610	0.0–0.25	Soil	6.06E-05 (J)	4.62E-06 (J)	2.18E-07 (J)	1.91E-06	2.98E-07 (J)	6.64E-07 (J)	6.67E-06
RE73-06-67776	73-25611	0.0–0.25	Soil	1.27E-05 (J)	8.64E-07 (J)	—	—	—	1.89E-07 (J)	1.33E-06
RE73-06-67777	73-25612	0.0–0.25	Soil	0.0000429	3.61E-06 (J)	—	5.66E-07	—	5.43E-07 (J)	3.42E-06
RE73-06-67778	73-25613	0.0–0.25	Soil	0.0000394	2.88E-06 (J)	—	5.06E-07	—	3.24E-07 (J)	1.76E-06
RE73-06-67779	73-25614	0.0–0.25	Soil	0.000231	0.0000178	5.03E-07 (J)	3.78E-06	—	1.43E-06 (J)	7.93E-06
RE73-06-67780	73-25615	0.0–0.25	Soil	0.000105	8.65E-06	3.67E-07 (J)	4.56E-06	7.36E-07 (J)	1.26E-06 (J)	0.0000132
RE73-06-67781	73-25616	0.0–0.25	Soil	0.0000307	3.15E-06 (J)	—	—	—	4.95E-07 (J)	1.06E-06
RE73-06-67782	73-25617	0.0–0.25	Soil	0.0000661	5.08E-06	—	—	—	5.2E-07 (J)	3.62E-06
RE73-06-67783	73-25618	0.0–0.25	Soil	0.0000549	2.97E-06 (J)	—	—	—	—	—
RE73-06-67784	73-25619	0.0–0.25	Soil	0.0000241	—	—	—	—	—	4.63E-07
RE73-06-67785	73-25620	0.0–0.25	Soil	0.0000195	1.21E-06 (J)	—	—	—	—	—
RE73-07-74726	73-27279	0.0–1.0	Soil	0.0000657	5.71E-06	—	2.07E-06	4.7E-07 (J)	7.8E-07 (J)	6.49E-06
RE73-07-74727	73-27279	1.5–2.75	Qbt 3	2.94E-06 (J)	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Octachlorodibenzodioxin [1,2,3,4,6,7,8,9-]	Octachlorodibenzofuran [1,2,3,4,6,7,8,9-]	Pentachlorodibenzodioxin [1,2,3,7,8-]	Pentachlorodibenzodioxins (Total)	Pentachlorodibenzofuran [1,2,3,7,8-]	Pentachlorodibenzofuran [2,3,4,7,8-]	Pentachlorodibenzofurans (Totals)
Residential Soil Screening Levels[a]				**SSLs not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
RE73-07-74728	73-27279	3.5–4.5	Qbt 3	7.34E-06	—	—	—	—	—	—
RE73-07-74729	73-27280	0.0–1.5	Soil	0.000167 (J)	0.000018 (J)	—	2.17E-06	6.6E-07 (J)	1.27E-06 (J)	0.0000108
RE73-07-74730	73-27280	1.5–2.5	Qbt 3	1.32E-05 (J)	9.9E-07 (J)	—	1.7E-07	—	3.5E-07 (J)	2.47E-06
RE73-07-74731	73-27280	3.5–5.0	Qbt 3	1.87E-06 (J)	—	—	—	—	—	—
RE73-07-76485	73-27281	0.0–0.5	Soil	0.000422	0.0000378	2.44E-06 (J)	0.0000286	2.63E-06	5.87E-06	0.0000592
RE73-07-74733	73-27281	1.5–2.5	Qbt 3	0.000167	0.0000138	5.4E-07 (J)	4.94E-06	—	8.9E-07 (J)	9.09E-06
RE73-07-74734	73-27281	3.5–4.5	Qbt 3	9.05E-05 (J)	9.09E-06	4.0E-07 (J)	3.96E-06	3.5E-07 (J)	8.1E-07 (J)	7.84E-06
RE73-07-74735	73-27282	0.0–2.0	Soil	0.000341	0.0000151	7.1E-07 (J)	8.06E-06	7.6E-07 (J)	1.84E-06 (J)	0.0000198
RE73-07-74736	73-27282	2.5–3.7	Qbt 3	3.04E-06 (J)	—	—	—	—	—	—
RE73-07-74737	73-27282	4.0–5.0	Qbt 3	0.0000104	—	—	—	2.1E-07 (J)	—	3.8E-07
RE73-07-74739	73-27283	0.0–1.0	Soil	0.00009	9.04E-06	—	3.78E-06	5.0E-07 (J)	1.07E-06 (J)	0.0000112
RE73-07-74738	73-27283	1.0–2.0	Qbt 3	5.84E-06 (J)	9.0E-07 (J)	—	—	—	—	1.6E-07
RE73-07-74741	73-27284	0.0–2.0	Soil	0.0000361	2.99E-06 (J)	—	7E-08	2.1E-07 (J)	4.9E-07 (J)	5.63E-06
RE73-07-74742	73-27284	2.0–3.0	Qbt 3	6.89E-06	1.2E-06 (J)	—	—	—	—	2.5E-07
RE73-07-74744	73-27285	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74747	73-27286	0.0–2.0	Soil	0.0000206	6.7E-07 (J)	—	0.0000001	1.1E-07 (J)	1.4E-07 (J)	2.5E-07
RE73-07-74748	73-27286	2.0–3.0	Qbt 3	5.16E-06	—	—	—	—	—	—
RE73-07-74749	73-27286	3.0–5.0	Qbt 3	2.42E-06 (J)	—	—	—	—	—	—
RE73-07-74750	73-27287	0.0–1.0	Qbt 3	0.0000058	—	—	—	—	—	—
RE73-07-74751	73-27287	1.0–2.0	Qbt 3	2.49E-06 (J)	—	—	—	—	—	—
RE73-07-74752	73-27287	3.0–4.0	Qbt 3	1.59E-06 (J)	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Octachlorodibenzodioxin [1,2,3,4,6,7,8,9-]	Octachlorodibenzofuran [1,2,3,4,6,7,8,9-]	Pentachlorodibenzodioxin [1,2,3,7,8-]	Pentachlorodibenzodioxins (Total)	Pentachlorodibenzofuran [1,2,3,7,8-]	Pentachlorodibenzofuran [2,3,4,7,8-]	Pentachlorodibenzofurans (Totals)
Residential Soil Screening Levels[a]				**SSLs not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
RE73-07-74753	73-27288	0.0–1.5	Soil	1.83E-06 (J)	—	—	—	—	—	—
RE73-07-74756	73-27289	0.0–2.5	Qbt 3	0.0000123	6.3E-07 (J)	5.6E-07 (J)	6.09E-06	3.19E-06	0.0000045	0.0000444
RE73-07-74757	73-27289	3.0–4.0	Qbt 3	—	—	—	2.7E-07	—	—	1.54E-06
RE73-07-74759	73-27290	0.0–1.5	Qbt 3	9.7E-07 (J)	—	—	—	—	—	—
RE73-07-74762	73-27291	0.0–2.0	Soil	0.0000255	8.9E-07 (J)	—	3.5E-07	2.3E-07 (J)	3.7E-07 (J)	2.78E-06
RE73-07-74763	73-27291	2.0–3.5	Qbt 3	2.91E-06 (J)	—	—	—	—	—	—
RE73-07-74765	73-27292	0.0–1.5	Qbt 3	7.8E-07 (J)	—	—	—	—	—	—
RE73-07-74766	73-27292	2.0–3.0	Qbt 3	4.5E-07 (J)	—	—	—	—	—	—
RE73-07-74768	73-27293	0.0–1.5	Qbt 3	8.1E-07 (J)	—	—	—	—	—	—
RE73-07-74769	73-27293	1.5–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74770	73-27293	3.0–4.0	Qbt 3	1.05E-06 (J)	—	—	—	—	—	—
RE73-07-74771	73-27294	0.0–1.5	Qbt 3	0.000029	1.58E-06 (J)	—	2.02E-06	8.4E-07 (J)	1.51E-06 (J)	0.000011
RE73-07-74772	73-27294	2.0–3.0	Qbt 3	4.35E-06 (J)	—	—	—	1.7E-07 (J)	2.0E-07 (J)	1.66E-06
RE73-07-74774	73-27295	0.0–2.0	Qbt 3	5.95E-06	5.2E-07 (J)	—	—	1.4E-07 (J)	2.1E-07 (J)	1.48E-06
RE73-07-74775	73-27295	2.5–4.0	Qbt 3	8.4E-07 (J)	—	—	—	—	—	—
RE73-07-76503	73-27296	0.0–0.5	Qbt 3	1.89E-06 (J)	—	—	—	—	—	—
RE73-07-76504	73-27296	2.0–2.5	Qbt 3	0.000018	—	—	—	—	1.87E-07 (J)	1.87E-07
RE73-07-74780	73-27297	0.0–0.5	Qbt 3	0.0000871	5.66E-06	2.3E-07 (J)	2.58E-06	4.7E-07 (J)	1.06E-06 (J)	0.0000124
RE73-07-74783	73-27298	0.0–1.0	Soil	0.0000713	2.6E-06 (J)	2.9E-07 (J)	2.18E-06	3.7E-07 (J)	6.4E-07 (J)	6.49E-06
RE73-07-76491	73-27298	2.0–2.5	Qbt 3	4.27E-06 (J)	—	—	—	—	—	—
RE73-07-74790	73-27299	0.0–1.5	Qbt 3	0.0000357	1.73E-06 (J)	2.5E-07 (J)	0.0000025	6.6E-07 (J)	1.07E-06 (J)	9.81E-06

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Octachlorodibenzodioxin [1,2,3,4,6,7,8,9-]	Octachlorodibenzofuran [1,2,3,4,6,7,8,9-]	Pentachlorodibenzodioxin [1,2,3,7,8-]	Pentachlorodibenzodioxins (Total)	Pentachlorodibenzofuran [1,2,3,7,8-]	Pentachlorodibenzofuran [2,3,4,7,8-]	Pentachlorodibenzofurans (Totals)
Residential Soil Screening Levels[a]				**SSLs not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
RE73-07-74791	73-27299	2.0–3.5	Qbt 3	8.13E-05 (J)	3.48E-06 (J)	4.5E-07 (J)	5.15E-06	9.9E-07 (J)	1.83E-06 (J)	0.0000171
RE73-07-74793	73-27300	0.0–1.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74794	73-27300	2.0–3.0	Qbt 3	—	—	—	—	—	—	—
RE73-07-74796	73-27301	0.0–2.0	Qbt 3	6.2E-07 (J)	—	—	—	—	—	—
RE73-07-74799	73-27302	0.0–0.5	Qbt 3	0.0000399	1.72E-06 (J)	—	—	—	—	6.56E-07
RE73-07-74800	73-27302	2.0–2.5	Qbt 3	2.77E-06 (J)	—	—	—	—	—	—
RE73-07-74802	73-27303	0.0–0.5	Qbt 3	0.000108	0.0000104	7.03E-07 (J)	4.89E-06	7.51E-07 (J)	1.16E-06 (J)	0.0000129
RE73-07-74803	73-27303	1.0–1.5	Qbt 3	0.0000906	9.67E-06	6.25E-07 (J)	4.22E-06	8.0E-07 (J)	1.07E-06 (J)	0.000011
RE73-07-74805	73-27304	0.0–0.5	Qbt 3	0.0000327	1.57E-06 (J)	—	2.85E-07	—	1.95E-07 (J)	1.95E-07
RE73-07-74806	73-27304	2.0–2.5	Qbt 3	2.70E-06 (J)	—	—	—	—	—	—
RE73-07-74808	73-27305	0.0–0.5	Qbt 3	1.06E-06 (J)	—	—	—	—	—	—
RE73-07-74811	73-27306	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74814	73-27307	0.0–0.5	Soil	0.0000136	8.41E-07 (J)	—	2.84E-07	3.06E-07 (J)	3.98E-07 (J)	3.23E-06
RE73-07-74815	73-27307	2.0–2.5	Qbt 3	0.0000138	5.42E-07 (J)	—	5.23E-07	1.99E-07 (J)	2.54E-07 (J)	2.07E-06
RE73-07-74819	73-27308	4.0–4.5	Soil	2.13E-06 (J)	9.7E-07 (J)	9.1E-07 (J)	0.0000082	3.83E-06	0.0000101	0.000109
RE73-07-74820	73-27309	0.0–0.5	Qbt 3	0.0000118	1.09E-06 (J)	—	—	2.17E-07 (J)	—	1.01E-06
RE73-07-74821	73-27309	2.0–2.5	Qbt 3	2.49E-06 (J)	—	—	—	—	—	8.62E-07
RE73-07-74823	73-27310	0.0–0.5	Qbt 3	0.000109	6.49E-06	—	1.18E-06	—	4.53E-07 (J)	4.42E-06
RE73-07-74824	73-27310	2.0–2.5	Qbt 3	0.0000137	9.25E-07 (J)	—	—	—	—	1.97E-07
RE73-07-74829	73-27312	0.0–0.5	Qbt 3	6.53E-06	4.3E-07 (J)	—	—	—	—	1.45E-07
RE73-07-74830	73-27312	2.0–2.5	Qbt 3	1.14E-06 (J)	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Octachlorodibenzodioxin [1,2,3,4,6,7,8,9-]	Octachlorodibenzofuran [1,2,3,4,6,7,8,9-]	Pentachlorodibenzodioxin [1,2,3,7,8-]	Pentachlorodibenzodioxins (Total)	Pentachlorodibenzofuran [1,2,3,7,8-]	Pentachlorodibenzofuran [2,3,4,7,8-]	Pentachlorodibenzofurans (Totals)
Residential Soil Screening Levels[a]				**SSLs not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
RE73-07-74832	73-27313	0.0–0.5	Qbt 3	0.0000203	—	—	—	—	—	3.03E-07
RE73-07-74833	73-27313	2.0–2.5	Qbt 3	1.91E-06 (J)	—	—	—	—	—	—
RE73-07-74835	73-27314	0.0–0.5	Soil	0.000042	2.79E-06 (J)	—	1.12E-06	—	—	2.37E-06
RE73-07-74841	73-27316	0.0–1.0	Soil	0.0000579	7.65E-06	—	—	—	—	2.13E-06
RE73-07-74842	73-27316	1.0–2.0	Qbt 3	0.0000193	—	—	—	2.1E-07 (J)	—	2.1E-07
RE73-07-74850	73-27319	0.0–0.5	Qbt 3	0.0000294	3.05E-06 (J)	—	6.63E-06	7.19E-07 (J)	1.43E-06 (J)	0.0000132
RE73-07-74851	73-27319	2.0–2.5	Qbt 3	5.14E-06	7.21E-07 (J)	—	5.25E-07	—	—	1.17E-06
RE73-07-76473	73-27678	0.0–0.5	Soil	0.0000705	0.0000056	—	—	—	1.43E-07 (J)	9.29E-07
RE73-07-76474	73-27678	3.5–4.0	Qbt 3	0.0000164	1.47E-06 (J)	—	—	—	—	—
RE73-07-76475	73-27678	5.5–6.0	Qbt 3	0.0000315	2.43E-06 (J)	—	—	—	—	1.3E-07
RE73-07-76476	73-27679	0.0–0.5	Qbt 3	8.29E-06	6.68E-07 (J)	—	—	—	—	—
RE73-07-76477	73-27679	2.0–2.5	Qbt 3	5.09E-06	—	—	—	—	—	—
RE73-07-76479	73-27680	0.0–0.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76480	73-27680	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-76482	73-27681	0.0–0.5	Qbt 3	1.28E-06 (J)	—	—	—	—	—	—
RE73-07-76483	73-27681	2.0–2.5	Qbt 3	3.37E-07 (J)	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Phenanthrene	Pyrene	Tetrachlorodibenzodioxin [2,3,7,8-]	Tetrachlorodibenzodioxins (Total)	Tetrachlorodibenzofuran [2,3,7,8-]	Tetrachlorodibenzofurans (Total)
Residential Soil Screening Levels[a]				**1830**	**2290**	**3.9E-05**[e]	**SSLs not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**		
0173-96-0308	73-02255	0.0–0.5	Soil	—	—	NA	NA	NA	NA
0173-97-0311	73-02451	0.1–0.5	Soil	NA	NA	—	—	—	—
0173-97-0322	73-02458	0.1–0.5	Soil	—	—	—	8.1E-07 (J)	8.5E-07 (J)	4.5E-06 (J)
RE73-06-67646	73-25561	1.0–2.0	Soil	0.0189 (J)	0.0284 (J)	—	—	—	4.98E-07
RE73-07-74671	73-25561	3.5–5.0	Soil	—	—	—	—	—	2.9E-07
RE73-06-67649	73-25562	0.0–0.5	Soil	—	—	—	—	—	7.83E-07
RE73-06-67650	73-25562	1.0–2.0	Soil	—	—	—	—	—	—
RE73-07-74673	73-25562	2.5–4.0	Qbt 3	—	—	—	—	—	—
RE73-06-67652	73-25563	0.0–0.5	Soil	—	—	—	5.29E-07	—	2.78E-07
RE73-06-67653	73-25563	1.0–2.0	Soil	—	—	—	—	—	—
RE73-07-74675	73-25563	3.0–4.0	Qbt 3	—	—	—	—	—	—
RE73-07-76488	73-25564	0.0–0.5	Qbt 3	—	—	—	1.61E-06	1.25E-07 (J)	1.88E-06
RE73-07-74678	73-25564	2.5–3.0	Qbt 3	—	—	—	—	—	1.6E-07
RE73-07-74679	73-25565	0.0–1.0	Soil	0.0272 (J)	0.0609	2.3E-07 (J)	1.62E-06	4.6E-07 (J)	6.95E-06
RE73-07-74680	73-25565	3.0–4.0	Soil	—	0.0259 (J)	—	9.14E-06	1.22E-06	0.0000273
RE73-06-67662	73-25566	1.0–2.0	Soil	—	0.0148 (J)	—	—	—	9.2E-07
RE73-07-74715	73-25566	2.0–3.0	Qbt 3	—	—	—	—	—	—
RE73-06-67664	73-25567	0.0–0.5	Soil	—	—	—	8.52E-07	—	2.54E-06
RE73-07-74683	73-25567	2.5–4.0	Qbt 3	—	—	—	—	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Phenanthrene	Pyrene	Tetrachlorodibenzodioxin [2,3,7,8-]	Tetrachlorodibenzodioxins (Total)	Tetrachlorodibenzofuran [2,3,7,8-]	Tetrachlorodibenzofurans (Total)
Residential Soil Screening Levels[a]				**1830**	**2290**	**3.9E-05[e]**	**SSLs not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**		
RE73-07-74685	73-25568	0.0–1.0	Soil	0.0454	0.0684	3.3E-07 (J)	4.25E-06	0.0000011	0.0000185
RE73-07-74686	73-25568	1.25–2.0	Qbt 3	0.0201 (J)	0.0445	—	—	2.0E-07 (J)	0.0000007
RE73-07-74717	73-25568	3.0–4.5	Qbt 3	—	—	—	5.5E-07	2.4E-07 (J)	0.0000031
RE73-07-74687	73-25569	0.0–0.5	Soil	—	—	—	2.18E-07	2.34E-07 (J)	0.0000012
RE73-06-67671	73-25569	2.0–3.0	Soil	—	—	—	—	—	—
RE73-07-74688	73-25569	2.0–2.5	Qbt 3	—	—	—	—	—	—
RE73-07-74689	73-25570	0.0–0.5	Qbt 3	—	—	—	—	—	—
RE73-07-74690	73-25570	2.0–2.5	Qbt 3	—	—	—	—	—	—
RE73-07-74692	73-25571	2.0–2.5	Qbt 3	—	—	—	—	—	—
RE73-07-74693	73-25572	0.0–0.5	Qbt 3	—	—	—	—	—	—
RE73-07-74694	73-25572	2.0–2.5	Qbt 3	—	—	—	—	—	—
RE73-07-74695	73-25573	0.0–0.5	Qbt 3	—	—	—	—	—	1.91E-07
RE73-07-74696	73-25573	2.0–2.5	Qbt 3	—	—	—	—	—	—
RE73-07-74697	73-25574	0.0–0.5	Qbt 3	—	—	—	1.82E-07	—	—
RE73-07-74698	73-25574	2.0–2.5	Qbt 3	—	—	—	—	—	—
RE73-07-74699	73-25575	0.0–0.5	Qbt 3	—	—	—	—	—	—
RE73-07-74700	73-25575	1.5–2.0	Qbt 3	—	—	—	—	—	—
RE73-06-67758	73-25593	0.0–0.25	Soil	0.0452	0.0593 (J)	—	2.41E-06	3.96E-07 (J)	0.0000072
RE73-06-67759	73-25594	0.0–0.25	Soil	0.299	0.543	2.55E-07 (J)	1.87E-06	6.39E-07	0.000012

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Phenanthrene	Pyrene	Tetrachlorodibenzodioxin [2,3,7,8-]	Tetrachlorodibenzodioxins (Total)	Tetrachlorodibenzofuran [2,3,7,8-]	Tetrachlorodibenzofurans (Total)
Residential Soil Screening Levels[a]				**1830**	**2290**	**3.9E-05**[e]	**SSLs not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**		
RE73-06-67760	73-25595	0.0–0.25	Soil	0.0491	0.103	—	9.12E-07	2.63E-07 (J)	4.06E-06
RE73-06-67761	73-25596	0.0–0.25	Soil	0.0919	0.191	—	5.41E-07	—	1.47E-06
RE73-06-67762	73-25597	0.0–0.25	Soil	0.0385	0.079	—	1.56E-06	4.63E-07 (J)	5.98E-06
RE73-06-67763	73-25598	0.0–0.25	Soil	0.0987	0.161	—	8.79E-07	2.51E-07 (J)	3.99E-06
RE73-06-67764	73-25599	0.0–0.25	Soil	0.0251 (J)	0.0595	—	5.02E-06	9.34E-07	0.000018
RE73-06-67765	73-25600	0.0–0.25	Soil	0.191	0.426	—	1.45E-06	—	5.79E-06
RE73-06-67766	73-25601	0.0–0.25	Soil	0.0138 (J)	0.035 (J)	—	—	2.66E-07 (J)	2.11E-06
RE73-06-67770	73-25605	0.0–0.25	Soil	—	0.0173 (J)	—	1.34E-06	8.72E-07	5.95E-06
RE73-06-67771	73-25606	0.0–0.25	Soil	0.0577	0.114	—	2.66E-06	—	0.0000161
RE73-06-67772	73-25607	0.0–0.25	Soil	0.0374 (J)	0.0611	2.22E-07 (J)	9.49E-07	9.45E-07	5.88E-06
RE73-06-67773	73-25608	0.0–0.25	Soil	—	0.0133 (J)	—	2.06E-07	3.57E-07 (J)	1.34E-06
RE73-06-67774	73-25609	0.0–0.25	Soil	0.0227 (J)	0.0336 (J)	—	5.06E-07	1.33E-06	0.000011
RE73-06-67775	73-25610	0.0–0.25	Soil	0.0151 (J)	0.0242 (J)	—	8.8E-07	9.09E-07	0.0000079
RE73-06-67776	73-25611	0.0–0.25	Soil	—	0.0123 (J)	—	—	1.66E-07 (J)	5.47E-07
RE73-06-67777	73-25612	0.0–0.25	Soil	0.0154 (J)	0.0211 (J)	—	9.76E-07	7.01E-07	3.48E-06
RE73-06-67778	73-25613	0.0–0.25	Soil	—	—	—	—	1.04E-06	1.43E-06
RE73-06-67779	73-25614	0.0–0.25	Soil	0.0588	0.0864	—	2.08E-06	2.14E-06	0.0000135
RE73-06-67780	73-25615	0.0–0.25	Soil	0.0223 (J)	0.0357 (J)	—	2.92E-06	2.07E-06	0.0000139
RE73-06-67781	73-25616	0.0–0.25	Soil	—	—	—	4.2E-07	4.7E-07 (J)	1.18E-06

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Phenanthrene	Pyrene	Tetrachlorodibenzodioxin [2,3,7,8-]	Tetrachlorodibenzodioxins (Total)	Tetrachlorodibenzofuran [2,3,7,8-]	Tetrachlorodibenzofurans (Total)
Residential Soil Screening Levels[a]				**1830**	**2290**	**3.9E-05[e]**	**SSLs not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**		
RE73-06-67782	73-25617	0.0–0.25	Soil	0.0179 (J)	0.0257 (J)	—	5.27E-07	0.0000008	2.53E-06
RE73-06-67783	73-25618	0.0–0.25	Soil	0.0167 (J)	0.0238 (J)	—	—	4.37E-07 (J)	1.69E-06
RE73-06-67784	73-25619	0.0–0.25	Soil	—	—	—	—	3.62E-07 (J)	1.36E-06
RE73-06-67785	73-25620	0.0–0.25	Soil	—	—	—	—	—	3.81E-07
RE73-07-74726	73-27279	0.0–1.0	Soil	—	—	—	2.23E-06	7.7E-07	0.0000112
RE73-07-74727	73-27279	1.5–2.75	Qbt 3	—	—	—	—	—	—
RE73-07-74728	73-27279	3.5–4.5	Qbt 3	—	—	—	—	—	1.6E-07
RE73-07-74729	73-27280	0.0–1.5	Soil	—	—	2.3E-07 (J)	2.94E-06	1.14E-06	0.0000224
RE73-07-74730	73-27280	1.5–2.5	Qbt 3	—	—	—	—	2.8E-07 (J)	4.72E-06
RE73-07-74731	73-27280	3.5–5.0	Qbt 3	—	—	—	—	1.3E-07 (J)	1.3E-07
RE73-07-76485	73-27281	0.0–0.5	Soil	—	0.042 (J)	5.76E-07	0.0000219	0.0000039	0.0000872
RE73-07-74733	73-27281	1.5–2.5	Qbt 3	—	—	1.8E-07 (J)	4.18E-06	0.0000007	0.0000134
RE73-07-74734	73-27281	3.5–4.5	Qbt 3	—	—	—	3.46E-06	5.5E-07	0.0000117
RE73-07-74735	73-27282	0.0–2.0	Soil	0.0422	0.067	—	5.55E-06	1.62E-06	0.0000319
RE73-07-74736	73-27282	2.5–3.7	Qbt 3	—	—	—	—	—	—
RE73-07-74737	73-27282	4.0–5.0	Qbt 3	0.0154 (J)	0.044	—	2.19E-06	9.6E-07	0.0000021
RE73-07-74739	73-27283	0.0–1.0	Soil	0.0195 (J)	0.0391 (J)	—	3.35E-06	1.62E-06	0.0000152
RE73-07-74738	73-27283	1.0–2.0	Qbt 3	—	—	—	—	—	—
RE73-07-74741	73-27284	0.0–2.0	Soil	—	—	—	2.5E-07	5.9E-07	7.09E-06

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Phenanthrene	Pyrene	Tetrachlorodibenzodioxin [2,3,7,8-]	Tetrachlorodibenzodioxins (Total)	Tetrachlorodibenzofuran [2,3,7,8-]	Tetrachlorodibenzofurans (Total)
Residential Soil Screening Levels[a]				**1830**	**2290**	**3.9E-05**[e]	**SSLs not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**		
RE73-07-74742	73-27284	2.0–3.0	Qbt 3	—	—	—	—	—	—
RE73-07-74744	73-27285	0.0–1.0	Qbt 3	—	—	—	—	—	—
RE73-07-74747	73-27286	0.0–2.0	Soil	—	—	—	—	1.9E-07 (J)	6.8E-07
RE73-07-74748	73-27286	2.0–3.0	Qbt 3	—	—	—	—	—	—
RE73-07-74749	73-27286	3.0–5.0	Qbt 3	—	—	—	—	—	—
RE73-07-74750	73-27287	0.0–1.0	Qbt 3	—	—	—	—	—	—
RE73-07-74751	73-27287	1.0–2.0	Qbt 3	—	—	—	—	—	—
RE73-07-74752	73-27287	3.0–4.0	Qbt 3	—	—	—	—	—	—
RE73-07-74753	73-27288	0.0–1.5	Soil	—	—	—	0.0000004	—	—
RE73-07-74756	73-27289	0.0–2.5	Qbt 3	—	—	—	9.87E-06	0.0000105	0.000184
RE73-07-74757	73-27289	3.0–4.0	Qbt 3	—	—	—	6.9E-07	0.0000007	8.92E-06
RE73-07-74759	73-27290	0.0–1.5	Qbt 3	—	—	—	3.2E-07	—	—
RE73-07-74762	73-27291	0.0–2.0	Soil	—	—	—	8.9E-07	5.2E-07	6.71E-06
RE73-07-74763	73-27291	2.0–3.5	Qbt 3	—	—	—	—	—	1.7E-07
RE73-07-74765	73-27292	0.0–1.5	Qbt 3	—	—	—	—	—	—
RE73-07-74766	73-27292	2.0–3.0	Qbt 3	—	—	—	—	—	—
RE73-07-74768	73-27293	0.0–1.5	Qbt 3	—	—	—	1.5E-07	—	1.1E-07
RE73-07-74769	73-27293	1.5–3.0	Qbt 3	—	—	—	—	—	—
RE73-07-74770	73-27293	3.0–4.0	Qbt 3	—	—	—	1.3E-07	—	—

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Phenanthrene	Pyrene	Tetrachlorodibenzodioxin [2,3,7,8-]	Tetrachlorodibenzodioxins (Total)	Tetrachlorodibenzofuran [2,3,7,8-]	Tetrachlorodibenzofurans (Total)
Residential Soil Screening Levels[a]				**1830**	**2290**	**3.9E-05[e]**	**SSLs not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**		
RE73-07-74771	73-27294	0.0–1.5	Qbt 3	—	—	2.4E-07 (J)	3.05E-06	2.24E-06	0.0000376
RE73-07-74772	73-27294	2.0–3.0	Qbt 3	—	—	—	—	4.8E-07 (J)	6.45E-06
RE73-07-74774	73-27295	0.0–2.0	Qbt 3	—	—	—	1.73E-06	3.7E-07 (J)	5.25E-06
RE73-07-74775	73-27295	2.5–4.0	Qbt 3	—	—	—	—	—	—
RE73-07-76503	73-27296	0.0–0.5	Qbt 3	—	—	—	—	—	1.06E-07
RE73-07-76504	73-27296	2.0–2.5	Qbt 3	—	—	—	—	2.21E-07 (J)	9.46E-07
RE73-07-74780	73-27297	0.0–0.5	Qbt 3	0.0464	0.0613	—	1.07E-06	8.8E-07	0.000016
RE73-07-74783	73-27298	0.0–1.0	Soil	—	—	—	1.34E-06	1.11E-06	0.0000184
RE73-07-76491	73-27298	2.0–2.5	Qbt 3	—	—	—	—	—	3.41E-07
RE73-07-74790	73-27299	0.0–1.5	Qbt 3	—	—	—	1.91E-06	1.65E-06	0.0000284
RE73-07-74791	73-27299	2.0–3.5	Qbt 3	—	—	—	5.23E-06	2.17E-06	0.0000376
RE73-07-74793	73-27300	0.0–1.0	Qbt 3	—	—	—	—	—	—
RE73-07-74794	73-27300	2.0–3.0	Qbt 3	—	—	—	—	—	—
RE73-07-74796	73-27301	0.0–2.0	Qbt 3	—	—	—	—	1.5E-07 (J)	1.5E-07
RE73-07-74799	73-27302	0.0–0.5	Qbt 3	—	—	—	4.99E-07	—	2.88E-06
RE73-07-74800	73-27302	2.0–2.5	Qbt 3	—	—	—	—	—	1.15E-07
RE73-07-74802	73-27303	0.0–0.5	Qbt 3	—	—	—	3.04E-06	9.96E-07	0.0000199
RE73-07-74803	73-27303	1.0–1.5	Qbt 3	—	—	—	3.27E-06	9.8E-07	0.00002
RE73-07-74805	73-27304	0.0–0.5	Qbt 3	—	—	—	—	2.6E-07 (J)	1.32E-06

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Phenanthrene	Pyrene	Tetrachlorodibenzodioxin [2,3,7,8-]	Tetrachlorodibenzodioxins (Total)	Tetrachlorodibenzofuran [2,3,7,8-]	Tetrachlorodibenzofurans (Total)
Residential Soil Screening Levels[a]				**1830**	**2290**	**3.9E-05[e]**	**SSLs not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**		
RE73-07-74806	73-27304	2.0–2.5	Qbt 3	—	—	—	—	—	—
RE73-07-74808	73-27305	0.0–0.5	Qbt 3	—	—	—	—	—	—
RE73-07-74811	73-27306	0.0–0.5	Qbt 3	—	—	—	—	—	—
RE73-07-74814	73-27307	0.0–0.5	Soil	—	—	—	—	1.15E-06	0.0000151
RE73-07-74815	73-27307	2.0–2.5	Qbt 3	—	—	—	3.29E-07	5.45E-07	8.76E-06
RE73-07-74819	73-27308	4.0–4.5	Soil	—	—	5.0E-07 (J)	0.0000119	5.93E-06	0.000188
RE73-07-74820	73-27309	0.0–0.5	Qbt 3	—	—	—	2.81E-07	5.42E-07	7.26E-06
RE73-07-74821	73-27309	2.0–2.5	Qbt 3	—	—	—	—	5.73E-07	7.51E-06
RE73-07-74823	73-27310	0.0–0.5	Qbt 3	—	—	—	0.000001	3.9E-07 (J)	4.32E-06
RE73-07-74824	73-27310	2.0–2.5	Qbt 3	—	—	—	—	—	—
RE73-07-74829	73-27312	0.0–0.5	Qbt 3	—	—	—	—	—	3.29E-07
RE73-07-74830	73-27312	2.0–2.5	Qbt 3	—	—	—	—	—	—
RE73-07-74832	73-27313	0.0–0.5	Qbt 3	—	—	—	—	3.41E-07 (J)	9.79E-07
RE73-07-74833	73-27313	2.0–2.5	Qbt 3	—	—	—	—	—	—
RE73-07-74835	73-27314	0.0–0.5	Soil	—	—	—	1.53E-06	8.73E-07	6.96E-06
RE73-07-74841	73-27316	0.0–1.0	Soil	0.225	0.168	—	—	—	2.5E-07
RE73-07-74842	73-27316	1.0–2.0	Qbt 3	—	—	—	—	3.4E-07 (J)	5.8E-07
RE73-07-74850	73-27319	0.0–0.5	Qbt 3	—	—	—	4.27E-06	6.78E-07	0.0000137
RE73-07-74851	73-27319	2.0–2.5	Qbt 3	—	—	—	2.2E-07	—	3.86E-07

Table 7.3.1-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Phenanthrene	Pyrene	Tetrachlorodibenzodioxin [2,3,7,8-]	Tetrachlorodibenzodioxins (Total)	Tetrachlorodibenzofuran [2,3,7,8-]	Tetrachlorodibenzofurans (Total)
Residential Soil Screening Levels[a]				**1830**	**2290**	**3.9E-05[e]**	**SSLs not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**		
RE73-07-76473	73-27678	0.0–0.5	Soil	—	—	—	2.26E-07	1.9E-07 (J)	1.59E-06
RE73-07-76474	73-27678	3.5–4.0	Qbt 3	—	—	—	—	—	—
RE73-07-76475	73-27678	5.5–6.0	Qbt 3	—	—	—	—	—	1.83E-07
RE73-07-76476	73-27679	0.0–0.5	Qbt 3	—	—	—	—	2.18E-07 (J)	5.43E-07
RE73-07-76477	73-27679	2.0–2.5	Qbt 3	—	—	—	—	—	1.54E-07
RE73-07-76479	73-27680	0.0–0.5	Qbt 3	—	—	—	—	—	—
RE73-07-76480	73-27680	2.0–2.5	Qbt 3	—	—	—	—	—	—
RE73-07-76482	73-27681	0.0–0.5	Qbt 3	—	—	—	—	—	—
RE73-07-76483	73-27681	2.0–2.5	Qbt 3	—	—	—	—	—	—

Note: Units are mg/kg.

[a] SSLs from NMED 2006, 92513, unless otherwise noted.

[b] — Result was not detected.

[c] NA = Not analyzed.

[d] Pyrene used as surrogate based on structural similarity.

[e] SSLs from EPA Region 6 2006, 094321.

[f] Chlordane used as surrogate based on structural similarity.

[g] SSLs from EPA Region 9 (http://www.epa.gov/region09/waste/sfund/prg/files/04prgtable.pdf)

[h] Naphthalene used as surrogate based on structural similarity.

Table 7.3.2-1
Summary of COPCs at AOC 73-003

Inorganic COPCs	Organic COPCs
Aluminum	Aroclor-1254
Arsenic	Benzo(b)fluoranthene
Barium	4,4'-DDD
Cadmium	4,4'-DDE
Cobalt	4,4'-DDT
Lead	1,1-Dichloroethene
Manganese	Di-n-butylphthalate
Nitrate	Fluoranthene
Perchlorate	Pyrene
Selenium	Toluene
Zinc	

Table 7.3.2-2
Summary of Inorganic Chemicals above BVs in Samples at AOC 73-003

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Arsenic	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron
Soil/Fill BV[a]				**29200**	**8.17**	**295**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**21500**
Qbt 2,3,4 BV[a]				**7340**	**2.79**	**46**	**1.63**	**2200**	**7.4**	**3.14**	**4.66**	**14500**
Residential Soil Screening Levels[b]				**77800**	**3.9**	**15600**	**39**	**na**[c]	**2100**[d]	**1520**	**3130**	**23500**
RE73-99-0097	73-10104	2.8–3.3	Fill	—[e]	—	—	—	—	—	9.8	—	—
RE73-99-0098	73-10104	5.5–6.0	Fill	—	—	—	—	—	—	—	—	—
RE73-99-0100	73-10105	5.0–5.5	Soil	—	—	—	—	—	—	—	—	—
RE73-99-0102	73-10106	4.8–5.3	Fill	—	—	—	—	—	—	—	—	—
RE73-99-0103	73-10106	6.0–6.4	Qbt 3	18000	4.1	79	—	3000	10	—	5.3	17000
RE73-06-67551	73-25534	3.0–4.0	Fill	30400 (J+)	—	—	0.577 (U)	—	—	—	—	—
RE73-06-67552	73-25534	5.0–6.0	Fill	—	—	—	0.591 (U)	7350	—	—	—	—
RE73-06-67553	73-25534	7.0–8.0	Qbt 3	—	—	—	—	—	—	—	—	—
RE73-06-67554	73-25535	3.0–4.0	Fill	—	—	—	0.573 (U)	—	—	—	—	—
RE73-06-67555	73-25535	5.0–6.0	Fill	—	—	—	0.592 (U)	—	—	—	—	—
RE73-06-67556	73-25535	7.0–8.0	Qbt 3	—	—	—	—	—	—	—	—	—
RE73-06-67558	73-25536	5.0–6.0	Fill	—	—	—	0.588 (U)	8480	—	—	—	—
RE73-06-67559	73-25536	7.0–8.0	Qbt 3	—	—	—	—	—	—	—	—	—
RE73-06-67562	73-25537	7.0–8.0	Qbt 3	—	4.78 (U)	120 (J+)	—	—	—	—	—	—
RE73-06-67564	73-25538	2.0–3.0	Fill	—	—	—	0.587 (U)	—	—	—	—	—
RE73-06-67565	73-25538	4.5–6.5	Qbt 3	—	—	—	—	—	—	—	—	—
RE73-06-67566	73-25539	3.0–4.0	Qbt 3	—	—	—	—	—	—	—	—	—
RE73-06-67567	73-25539	5.0–6.0	Qbt 3	—	—	—	—	—	—	—	—	—
RE73-06-67568	73-25539	7.0–8.0	Qbt 3	—	—	—	—	—	—	—	—	—
RE73-07-74530	73-27233	3.0–4.0	Soil	—	—	—	2.84 (U)	—	—	—	—	—

Table 7.3.2-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Arsenic	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron
Soil/Fill BV[a]				**29200**	**8.17**	**295**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**21500**
Qbt 2,3,4 BV[a]				**7340**	**2.79**	**46**	**1.63**	**2200**	**7.4**	**3.14**	**4.66**	**14500**
Residential Soil Screening Levels[b]				**77800**	**3.9**	**15600**	**39**	**na**[c]	**2100**[d]	**1520**	**3130**	**23500**
RE73-07-74531	73-27233	4.0–5.0	Qbt 3	11400	4.54	61.4	2.96 (U)	3390	—	—	—	—
RE73-07-74563	73-27233	6.0–7.0	Qbt 3	—	2.86	—	3.07 (U)	—	—	—	—	—
RE73-07-74532	73-27234	2.0–3.0	Soil	—	—	—	2.85 (U)	—	—	9.67	—	—
RE73-07-74533	73-27234	4.0–5.0	Qbt 3	—	3.29	—	—	—	—	—	—	—
RE73-07-74564	73-27234	6.0–7.0	Qbt 3	12000	6.22	105	—	2910	7.96	—	—	—

Table 7.3.2-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Lead	Magnesium	Manganese	Nickel	Nitrate	Perchlorate	Selenium	Vanadium	Zinc
Soil/Fill BV[a]				**22.3**	**4610**	**671**	**15.4**	**na**	**na**	**1.52**	**39.6**	**48.8**
Qbt 2,3,4 BV[a]				**11.2**	**1690**	**482**	**6.58**	**na**	**na**	**0.3**	**17**	**63.5**
Residential Soil Screening Levels[b]				**400**	**na**	**3590**	**1560**	**100000**	**55[d]**	**391**	**78.2**	**23500**
RE73-99-0097	73-10104	2.8–3.3	Fill	130	—	—	—	NA[f]	NA	—	—	—
RE73-99-0098	73-10104	5.5–6.0	Fill	—	—	—	—	NA	NA	—	—	50
RE73-99-0100	73-10105	5.0–5.5	Soil	88	—	—	—	NA	NA	—	—	—
RE73-99-0102	73-10106	4.8–5.3	Fill	32	—	—	—	NA	NA	—	—	—
RE73-99-0103	73-10106	6.0–6.4	Qbt 3	—	3100	—	6.7	NA	NA	0.57 (J-)	18	—
RE73-06-67551	73-25534	3.0–4.0	Fill	—	—	—	—	4.43 (J-)	0.00061 (J)	33.2	—	—
RE73-06-67552	73-25534	5.0–6.0	Fill	—	—	—	—	9.08 (J-)	—	17.2	—	—
RE73-06-67553	73-25534	7.0–8.0	Qbt 3	11.7	—	—	—	4.96 (J-)	—	12.3	—	—
RE73-06-67554	73-25535	3.0–4.0	Fill	—	—	—	—	2.77 (J-)	—	18.3	—	—
RE73-06-67555	73-25535	5.0–6.0	Fill	—	—	—	—	6.04 (J-)	—	23.9	—	—
RE73-06-67556	73-25535	7.0–8.0	Qbt 3	—	—	—	—	7.35 (J-)	—	12.6	—	—
RE73-06-67558	73-25536	5.0–6.0	Fill	—	—	—	—	2.89 (J-)	—	13.9	—	—
RE73-06-67559	73-25536	7.0–8.0	Qbt 3	—	—	—	—	9.03 (J-)	—	12.5	—	—
RE73-06-67562	73-25537	7.0–8.0	Qbt 3	23.4	2690	971	—	2.84 (J-)	—	23.3	—	79.7
RE73-06-67564	73-25538	2.0–3.0	Fill	—	—	—	—	14.7 (J-)	—	27.5	—	—
RE73-06-67565	73-25538	4.5–6.5	Qbt 3	—	—	—	—	18 (J-)	—	11.5	—	—
RE73-06-67566	73-25539	3.0–4.0	Qbt 3	—	—	—	—	13.2 (J-)	—	13.7	—	—
RE73-06-67567	73-25539	5.0–6.0	Qbt 3	—	—	—	—	7.22 (J-)	—	12.6	—	—
RE73-06-67568	73-25539	7.0–8.0	Qbt 3	—	—	—	—	5.75 (J-)	—	12.9	—	—
RE73-07-74530	73-27233	3.0–4.0	Soil	—	—	—	—	3.31	—	5.66	—	—
RE73-07-74531	73-27233	4.0–5.0	Qbt 3	—	1850	—	—	4.12	—	3.93	—	—
RE73-07-74563	73-27233	6.0–7.0	Qbt 3	—	—	—	—	—	—	4.18	—	—

Table 7.3.2-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Lead	Magnesium	Manganese	Nickel	Nitrate	Perchlorate	Selenium	Vanadium	Zinc
Soil/Fill BV[a]				**22.3**	**4610**	**671**	**15.4**	**na**	**na**	**1.52**	**39.6**	**48.8**
Qbt 2,3,4 BV[a]				**11.2**	**1690**	**482**	**6.58**	**na**	**na**	**0.3**	**17**	**63.5**
Residential Soil Screening Levels[b]				**400**	**na**	**3590**	**1560**	**100000**	**55**[d]	**391**	**78.2**	**23500**
RE73-07-74532	73-27234	2.0–3.0	Soil	—	—	1050	—	—	—	6.79	—	—
RE73-07-74533	73-27234	4.0–5.0	Qbt 3	—	—	—	—	2.42	—	1.59 (J)	—	—
RE73-07-74564	73-27234	6.0–7.0	Qbt 3	—	1770	—	—	1.93	—	3.41	—	—

Note: Units are mg/kg.

[a] BVs from LANL 1998, 059730.

[b] SSLs from NMED 2006, 092513, unless otherwise noted.

[c] na = Not available.

[d] SSLs from EPA Region 6 2006, 094321

[e] — Result was not detected or was detected below the BV.

[f] NA = Not analyzed.

Table 7.3.2-3
Detected Organic Chemicals at AOC 73-003

Sample ID	Location ID	Depth (ft)	Media	Aroclor-1254	Benzo(b)fluoranthene	DDD[4,4'-]	DDE[4,4'-]	DDT[4,4'-]
Residential Soil Screening Levels[a]				**1.12**	**6.21**	**24.4**	**17.2**	**17.2**
RE73-99-0100	73-10105	5.0–5.5	Soil	—[b]	—	—	—	—
RE73-99-0102	73-10106	4.8–5.3	Fill	—	—	0.006	—	0.19
RE73-99-0104	73-10107	6.0–6.5	Fill	—	—	—	0.0046	0.03
RE73-99-0105	73-10107	8.0–8.5	Qbt 3	—	—	—	—	0.0049 (J-)
RE73-06-67564	73-25538	2.0–3.0	Fill	—	0.0152 (J)	—	—	0.000655 (J)
RE73-06-67566	73-25539	3.0–4.0	Qbt 3	—	—	—	0.00702	0.00431 (J)
RE73-06-67568	73-25539	7.0–8.0	Qbt 3	0.0123	—	—	—	—
RE73-07-74530	73-27233	3.0–4.0	Soil	—	—	—	—	—
RE73-07-74531	73-27233	4.0–5.0	Qbt 3	—	—	—	—	—
RE73-07-74563	73-27233	6.0–7.0	Qbt 3	—	—	—	—	—
RE73-07-74532	73-27234	2.0–3.0	Soil	—	—	—	—	—
RE73-07-74564	73-27234	6.0–7.0	Qbt 3	—	—	—	0.000509 (J)	—

Table 7.3.2-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dichloroethene[1,1-]	Di-n-butylphthalate	Fluoranthene	Pyrene	Toluene
Residential Soil Screening Levels[a]				**2290**	**2290**	**252**[c]	**206**	**6110**
RE73-99-0100	73-10105	5.0–5.5	Soil	—	—	0.56	0.45	—
RE73-99-0102	73-10106	4.8–5.3	Fill	—	—	—	—	—
RE73-99-0104	73-10107	6.0–6.5	Fill	—	—	—	—	—
RE73-99-0105	73-10107	8.0–8.5	Qbt 3	—	—	—	—	—
RE73-06-67564	73-25538	2.0–3.0	Fill	—	—	0.0178 (J)	0.0139 (J)	—
RE73-06-67566	73-25539	3.0–4.0	Qbt 3	—	—	—	—	—
RE73-06-67568	73-25539	7.0–8.0	Qbt 3	—	—	—	—	—
RE73-07-74530	73-27233	3.0–4.0	Soil	—	—	—	—	0.00258
RE73-07-74531	73-27233	4.0–5.0	Qbt 3	0.00138	—	—	—	—
RE73-07-74563	73-27233	6.0–7.0	Qbt 3	—	0.081 (J)	—	—	—
RE73-07-74532	73-27234	2.0–3.0	Soil	0.00041 (J)	—	—	—	—
RE73-07-74564	73-27234	6.0–7.0	Qbt 3	—	0.0466 (J)	—	—	—

Note: Units are mg/kg.

[a] SSLs from NMED 2006, 092513.

[b] — = Result was not detected.

[c] SSL is saturation limit, not risk-based.

Table 7.3.3-1
Summary of COPCs at SWMU 73-004(a)

Inorganic COPCs	Organic COPCs
Antimony	Anthracene
Barium	alpha-Chlordane
Cadmium	gamma-Chlordane
Copper	4,4'-DDD
Lead	4,4'-DDE
Mercury	4,4'-DDT
Nitrate	Fluoranthene
Perchlorate	1,2,3,4,6,7,8-Heptachlorodibenzodioxin
Selenium	1,2,3,4,6,7,8-Heptachlorodibenzofuran
Silver	1,2,3,4,7,8,9-Heptachlorodibenzofuran
Thallium	1,2,3,4,7,8-Hexachlorodibenzodioxin
Zinc	1,2,3,6,7,8-Hexachlorodibenzodioxin
	1,2,3,7,8,9-Hexachlorodibenzodioxin
	1,2,3,4,7,8-Hexachlorodibenzofuran
	1,2,3,6,7,8-Hexachlorodibenzofuran
	2,3,4,6,7,8-Hexachlorodibenzofuran
	2-Methylnaphthalene
	Naphthalene
	1,2,3,4,6,7,8,9-Octachlorodibenzodioxin
	1,2,3,4,6,7,8,9-Octachlorodibenzofuran
	1,2,3,7,8-Pentachlorodibenzodioxin
	1,2,3,7,8-Pentachlorodibenzofuran
	2,3,4,7,8-Pentachlorodibenzofuran
	Phenanthrene
	Pyrene
	2,3,7,8-Tetrachlorodibenzofuran
	Toluene
	Trichlorofluoromethane

Table 7.3.3-2
Inorganic Chemicals above BVs at SWMU 73-004(a)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Cadmium	Calcium	Copper	Iron	Lead
Soil/Fill BV[a]				**29200**	**0.83**	**8.17**	**295**	**0.4**	**6120**	**14.7**	**21500**	**22.3**
Qbt 2,3,4 BV[a]				**7340**	**0.5**	**2.79**	**46**	**1.63**	**2200**	**4.66**	**14500**	**11.2**
Residential Soil Screening Levels[b]				**77800**	**31.3**	**3.9**	**15600**	**39**	**na[c]**	**3130**	**23500**	**400**
0173-96-0231	73-02207	3.5–3.8	Soil	—[d]	12 (U)	—	—	0.61 (U)	—	—	—	—
RE73-99-0094	73-02207	5.5–6.0	Qbt 3	—	—	3.2	80	—	17000	—	—	—
0173-96-0503	73-02328	9.0–10.0	Fill	—	12 (U)	—	—	0.62 (U)	—	—	—	—
RE73-99-0096	73-10095	3.5–4.0	Soil	—	—	—	—	—	—	—	—	—
RE73-99-0134	73-10121	3.0–4.0	Soil	—	2.1 (J-)	—	962	—	—	73.7	—	113
RE73-06-67593	73-25548	0.0–1.0	Fill	—	—	—	—	—	—	—	—	23.1
RE73-06-67594	73-25548	6.0–7.0	Fill	—	—	—	—	—	—	—	—	—
RE73-06-67595	73-25548	10.5–11.5	Qbt 3	—	—	—	—	—	—	—	—	—
RE73-06-67597	73-25549	0.5–1.0	Fill	—	—	—	—	0.535 (U)	—	—	—	—
RE73-06-67598	73-25549	3.0–4.0	Qbt 3	—	—	—	—	—	—	—	—	—
RE73-06-67620	73-25557	0.0–1.0	Fill	—	—	—	—	0.53 (U)	—	—	—	363 (J-)
RE73-06-67621	73-25557	2.0–3.0	Fill	33300 (J+)	—	—	299	2.77 (U)	8050 (J)	—	26200 (J)	—

Table 7.3.3-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Magnesium	Mnaganese	Mercury	Nitrate	Perchlorate	Selenium	Silver	Thallium	Zinc
Soil/Fill BV[a]				**4610**	**671**	**0.1**	**na**	**na**	**1.52**	**1**	**0.73**	**48.8**
Qbt 2,3,4 BV[a]				**1690**	**482**	**0.1**	**na**	**na**	**0.3**	**1**	**1.1**	**63.5**
Residential Soil Screening Levels[b]				**na**	**3590**	**23**[e]	**100000**	**55**[e]	**391**	**391**	**5.16**	**23500**
0173-96-0231	73-02207	3.5–3.8	Soil	—	—	0.12 (U)	NA[f]	NA	—	2.4	1.5 (U)	—
RE73-99-0094	73-02207	5.5–6.0	Qbt 3	—	—	—	NA	NA	—	—	—	—
0173-96-0503	73-02328	9.0–10.0	Fill	—	—	0.12 (U)	NA	NA	—	2.5 (U)	1.2 (U)	—
RE73-99-0096	73-10095	3.5–4.0	Soil	—	—	—	NA	NA	—	1.7	—	74
RE73-99-0134	73-10121	3.0–4.0	Soil	—	—	—	NA	NA	—	31.9	—	215
RE73-06-67593	73-25548	0.0–1.0	Fill	—	—	—	1.44	—	1.71 (U)	2.69 (J)	—	96.7
RE73-06-67594	73-25548	6.0–7.0	Fill	—	—	—	1.1	0.0021 (J)	1.58 (U)	1.26 (J)	—	56.9
RE73-06-67595	73-25548	10.5–11.5	Qbt 3	—	—	—	—	—	1.52 (U)	—	—	—
RE73-06-67597	73-25549	0.5–1.0	Fill	—	—	—	0.776 (J)	0.000639 (J)	1.6 (U)	—	—	—
RE73-06-67598	73-25549	3.0–4.0	Qbt 3	—	501	—	—	—	1.61 (U)	—	—	—
RE73-06-67620	73-25557	0.0–1.0	Fill	—	—	—	0.842 (J)	—	1.59 (U)	—	—	—
RE73-06-67621	73-25557	2.0–3.0	Fill	6410	—	—	0.815 (J)	0.0023	8.32 (U)	—	—	50

Note: Units are mg/kg.

[a] BVs from LANL 1998, 059730, unless otherwise noted.

[b] SSLs from NMED 2006, 092513, unless otherwise noted.

[c] na = Not available.

[d] — Result was not detected or was detected below the BV.

[e] SSLs from EPA Region 6 2006, 094321.

[f] NA = Not analyzed.

Table 7.3.3-3
Detected Organic Chemicals at SWMU 73-004(a)

Sample ID	Location ID	Depth (ft)	Media	Anthracene	Chlordane[alpha-]	Chlordane[gamma-]	DDD[4,4'-]	DDE[4,4'-]	DDT[4,4'-]	Fluoranthene
Residential Soil Screening Levels[a]				**22000**	**16.2**[b]	**16.2**[b]	**24.4**	**17.2**	**17.2**	**2290**
0173-96-0231	73-02207	3.5–3.8	Soil	—[c]	—	—	0.173	0.14	0.5	—
RE73-99-0094	73-02207	5.5–6.0	Qbt 3	—	—	—	—	—	0.0076	—
RE73-99-0096	73-10095	3.5–4.0	Soil	—	—	—	—	0.058	0.12	—
RE73-99-0134	73-10121	3.0–4.0	Soil	NA[d]	0.0021 (J+)	0.0034 (J+)	0.0043 (J+)	0.016 (J+)	0.37 (J+)	NA
RE73-06-67593	73-25548	0–1.0	Fill	0.00874 (J)	—	—	—	0.00405 (J-)	0.00715 (J-)	0.0125 (J)
RE73-06-67594	73-25548	6.0–7.0	Fill	—	—	—	0.0166 (J-)	0.0118 (J-)	0.355 (J-)	—
RE73-06-67595	73-25548	10.5–11.5	Qbt 3	—	—	—	—	—	—	—
RE73-06-67597	73-25549	0.5–1.0	Fill	—	—	—	—	—	—	—
RE73-06-67598	73-25549	3.0–4.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67620	73-25557	0–1.0	Fill	—	—	—	—	—	—	0.0373

Table 7.3.3-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Heptachlorodibenzodioxin[1,2,3,4,6,7,8-]	Heptachlorodibenzodioxins (Total)	Heptachlorodibenzofuran[1,2,3,4,6,7,8-]	Heptachlorodibenzofuran[1,2,3,4,7,8,9-]	Heptachlorodibenzofurans (Total)	Hexachlorodibenzodioxin[1,2,3,4,7,8-]	Hexachlorodibenzodioxin[1,2,3,6,7,8-]
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
0173-96-0231	73-02207	3.5–3.8	Soil	NA[d]	NA	NA	NA	NA	NA	NA
RE73-99-0094	73-02207	5.5–6.0	Qbt 3	NA	NA	NA	NA	NA	NA	NA
RE73-99-0096	73-10095	3.5–4.0	Soil	NA	NA	NA	NA	NA	NA	NA
RE73-99-0134	73-10121	3.0–4.0	Soil	NA	NA	NA	NA	NA	NA	NA
RE73-06-67593	73-25548	0–1.0	Fill	0.000137	0.000224	6.98E-06 (J)	3.42E-07 (J)	0.000023 (J)	3.31E-07 (J)	1.9E-06 (J)
RE73-06-67594	73-25548	6.0–7.0	Fill	0.0000332	0.0000541	9.35E-06 (J)	3.52E-07 (J)	2.25 E-05(J)	—	2.05E-06 (J)
RE73-06-67595	73-25548	10.5–11.5	Qbt 3	0.00004	0.0000654	3.93E-06 (J)	1.68E-07 (J)	1.08E-05 (J)	—	1.02E-06 (J)
RE73-06-67597	73-25549	0.5–1.0	Fill	1.55E-06 (J)	2.71E-06	4.43E-07 (J)	—	4.43E-07	—	—
RE73-06-67598	73-25549	3.0–4.0	Qbt 3	3.5E-07 (J)	5.75E-07	—	—	—	—	—
RE73-06-67620	73-25557	0.0–1.0	Fill	0.0000125	0.000021	—	—	0.0000041	—	7.53E-07 (J)

Table 7.3.3-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Hexachlorodibenzodioxin[1,2,3,7,8,9-]	Hexachlorodibenzodioxins (Total)	Hexachlorodibenzofuran[1,2,3,4,7,8-]	Hexachlorodibenzofuran[1,2,3,6,7,8-]	Hexachlorodibenzofuran[2,3,4,6,7,8-]	Hexachlorodibenzofurans (Total)	Methylnaphthalene[2-]
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						**79.5[e]**
0173-96-0231	73-02207	3.5–3.8	Soil	NA	NA	NA	NA	NA	NA	0.22 (J)
RE73-99-0094	73-02207	5.5–6.0	Qbt 3	NA	NA	NA	NA	NA	NA	—
RE73-99-0096	73-10095	3.5–4.0	Soil	NA	NA	NA	NA	NA	NA	—
RE73-99-0134	73-10121	3.0–4.0	Soil	NA	NA	NA	NA	NA	NA	NA
RE73-06-67593	73-25548	0–1.0	Fill	8.71E-07 (J)	0.0000176	2.65E-07(J)	2.39E-07 (J)	4.92E-07 (J)	6.04E-06 (J)	—
RE73-06-67594	73-25548	6.0–7.0	Fill	1.37E-06 (J)	0.0000158	5.26E-07(J)	4.86E-07 (J)	7.01E-07 (J)	9.9E-06 (J)	—
RE73-06-67595	73-25548	10.5–11.5	Qbt 3	4.66E-07 (J)	8.62E-06	2.08E-07(J)	2.22E-07 (J)	3.39E-07 (J)	3.91E-06 (J)	—
RE73-06-67597	73-25549	0.5–1.0	Fill	—	6.54E-07	—	—	—	2.41E-07	—
RE73-06-67598	73-25549	3.0–4.0	Qbt 3	1.05E-07 (J)	1.96E-07	—	—	—	—	—
RE73-06-67620	73-25557	0.0–1.0	Fill	7.59E-07 (J)	5.51E-06	—	—	2.23E-07 (J)	0.0000029	—

Table 7.3.3-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Naphthalene	Octachlorodibenzodioxin[1,2,3,4,6,7,8,9-]	Octachlorodibenzofuran[1,2,3,4,6,7,8,9-]	Pentachlorodibenzodioxin[1,2,3,7,8-]	Pentachlorodibenzodioxins (Total)	Pentachlorodibenzofuran[1,2,3,7,8-]	Pentachlorodibenzofuran[2,3,4,7,8-]
Residential Soil Screening Levels[a]				**79.5**	**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**					
0173-96-0231	73-02207	3.5–3.8	Soil	0.16 (J)	NA	NA	NA	NA	NA	NA
RE73-99-0094	73-02207	5.5–6.0	Qbt 3	—	NA	NA	NA	NA	NA	NA
RE73-99-0096	73-10095	3.5–4.0	Soil	—	NA	NA	NA	NA	NA	NA
RE73-99-0134	73-10121	3.0–4.0	Soil	NA	NA	NA	NA	NA	NA	NA
RE73-06-67593	73-25548	0–1.0	Fill	—	0.000678	0.0000311	1.63E-07 (J)	9.36E-07	1.51E-07 (J)	2.6E-07 (J)
RE73-06-67594	73-25548	6.0–7.0	Fill	—	0.000156	0.0000208	4.04E-07 (J)	3.24E-06	2.82E-07 (J)	5.37E-07 (J)
RE73-06-67595	73-25548	10.5–11.5	Qbt 3	—	0.000194	0.0000115	1.37E-07 (J)	6.66E-07	1.19E-07 (J)	2.01E-07 (J)
RE73-06-67597	73-25549	0.5–1.0	Fill	—	9.67E-06 (J)	7.55E-07 (J)	—	—	—	—
RE73-06-67598	73-25549	3.0–4.0	Qbt 3	—	2.77E-06 (J)	—	—	—	—	—
RE73-06-67620	73-25557	0–1.0	Fill	—	0.0000904 (J)	6.49E-06	2.69E-07 (J)	4.96E-07	—	—

Table 7.3.3-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Phenanthrene	Pyrene	Pentachlorodibenzofurans (Totals)	Tetrachlorodibenzodioxins (Total)	Tetrachlorodibenzofuran[2,3,7,8-]	Tetrachlorodibenzofurans (Total)	Toluene	Trichlorofluoromethane
Residential Soil Screening Levels[a]				**1830**	**2290**	**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**				**252[f]**	**588**
0173-96-0231	73-02207	3.5–3.8	Soil	0.1 (J)	—	NA	NA	NA	NA	—	0.007
RE73-99-0094	73-02207	5.5–6.0	Qbt 3	—	—	NA	NA	NA	NA	0.00026 (J)	—
RE73-99-0096	73-10095	3.5–4.0	Soil	—	—	NA	NA	NA	NA	—	—
RE73-99-0134	73-10121	3.0–4.0	Soil	NA	NA	NA	NA	NA	NA	NA	NA
RE73-06-67593	73-25548	0–1.0	Fill	—	0.0142 (J)	2.36E-06	5.28E-07	—	1.36E-06	—	—
RE73-06-67594	73-25548	6.0–7.0	Fill	—	—	5.86E-06	1.33E-06	3.18E-07 (J)	6.18E-06	—	—
RE73-06-67595	73-25548	10.5–11.5	Qbt 3	—	—	2.06E-06	3.01E-07	1.76E-07 (J)	2.06E-06	—	—
RE73-06-67597	73-25549	0.5–1.0	Fill	—	—	—	—	—	—	—	—
RE73-06-67598	73-25549	3.0–4.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67620	73-25557	0–1.0	Fill	0.0293 (J)	0.0411	6.89E-07	—	—	2.18E-07	—	—

Note: Units are mg/kg.

[a] SSLs from NMED 2006, 092513.

[b] Chlordane used as a surrogate based on structural similarity.

[c] — = Result was not detected.

[d] NA = Not analyzed.

[e] Napthalene used as surrogate based on structural similarity.

[f] SSL is saturation limit, not risk-based.

Table 7.3.4-1
Summary of COPCs at SWMU 73-004(b)

Inorganic COPCs	Organic COPCs	Radionuclide COPCs
Aluminum	Acenaphthene	Tritium
Antimony	Acetone	
Arsenic	Anthracene	
Barium	Aroclor-1254	
Cadmium	Aroclor-1260	
Chromium	Benzo(a)anthracene	
Cobalt	Benzo(a)pyrene	
Copper	Benzo(b)fluoranthene	
Lead	Benzo(g,h,i)perylene	
Mercury	Benzo(k)fluoranthene	
Nickel	Benzoic acid	
Nitrate	Bis(2-ethylhexyl)phthalate	
Perchlorate	Butylbenzylphthalate	
Selenium	Alpha-Chlordane	
Silver	Gamma-Chlordane	
Thallium	Chrysene	
Vanadium	4,4'-DDD	
Zinc	4,4'-DDE	
	4,4'-DDT	
	Di-n-butylphthalate	
	Di-n-octylphthalate	
	Endrin aldehyde	
	Fluoranthene	
	Fluorene	
	Indeno(1,2,3-cd)pyrene	
	2-Methylnaphthalene	
	Naphthalene	
	Phenanthrene	
	Pyrene	

Table 7.3.4-2
Inorganic Chemicals above BVs at SWMU 73-004(b)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium
Soil/Fill BV[a]				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**
Qbt 2,3,4 BV[a]				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**
Residential Soil Screening Levels[b]				**77800**	**31.3**	**3.9**	**15600**	**156**	**39**	**na**[c]	**2100**[e]
0173-96-0243	73-02211	7.2–7.4	Qbt 3	—[d]	11 (UJ)	3.2	100	—	—	4800	—
RE73-99-0088	73-02211	11.5–12.5	Qbt 3	13000	—	4.1	130	—	—	2500	11
0173-96-0249	73-02213	4.2–4.5	Soil	—	11 (UJ)	—	—	—	0.55 (U)	—	—
0173-96-0246	73-02216	2.2–2.5	Soil	—	14 (UJ)	13 (J-)	—	—	0.68 (U)	—	36
0173-96-0501	73-02326	14.0–15.0	Fill	—	12 (U)	—	—	—	0.59 (U)	6500	—
0173-96-0502	73-02327	14.0–15.0	Fill	—	12 (U)	—	—	—	0.59 (U)	—	—
RE73-99-0089	73-10099	7.5–8.5	Fill	35000	—	—	—	1.9	—	—	—
RE73-99-0090	73-10099	10.0–10.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67569	73-25540	8.0–9.0	Fill	—	—	—	—	—	0.541 (U)	—	—
RE73-06-67570	73-25540	13.0–14.0	Fill	—	—	—	—	—	0.534 (U)	—	—
RE73-06-67571	73-25540	17.0–18.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67572	73-25541	2.0–3.0	Fill	—	—	—	—	—	0.541 (U)	—	—
RE73-06-67573	73-25541	4.0–5.0	Fill	—	—	—	—	—	0.538 (U)	—	—
RE73-06-67574	73-25541	7.0–8.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67575	73-25542	2.0–3.0	Fill	—	—	—	—	—	0.592 (U)	—	—
RE73-06-67576	73-25542	3.5–4.5	Fill	—	—	—	—	—	0.548 (U)	—	—
RE73-06-67577	73-25542	6.0–8.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67578	73-25543	2.0–3.0	Fill	—	—	—	—	—	0.564 (U)	—	—
RE73-06-67579	73-25543	4.0–5.0	Fill	—	—	—	—	—	0.555 (U)	—	—
RE73-06-67580	73-25543	7.0–8.0	Qbt 3	—	—	2.92	—	—	—	—	—

Table 7.3.4-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium
Soil/Fill BV[a]				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**
Qbt 2,3,4 BV[a]				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**
Residential Soil Screening Levels[b]				**77800**	**31.3**	**3.9**	**15600**	**156**	**39**	**na[c]**	**2100[e]**
RE73-06-67581	73-25544	3.0–4.0	Fill	—	—	—	—	—	0.551 (U)	—	—
RE73-06-67582	73-25544	6.5–7.5	Fill	30600	—	—	664	—	0.604 (U)	—	—
RE73-06-67583	73-25544	9.0–10.0	Qbt 3	8580	—	5.45	104	—	—	—	8.83
RE73-06-67600	73-25550	1.5–2.5	Fill	33400	—	—	—	—	—	—	20.2
RE73-06-67601	73-25550	6.5–7.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67603	73-25551	0.5–2.5	Fill	—	—	—	—	—	—	—	—
RE73-06-67604	73-25551	5.5–7.5	Qbt 3	18700	—	4.06	72.3 (J+)	—	—	2300	11.2
RE73-06-67606	73-25552	1.5–2.5	Fill	44600	—	—	—	2.18	2.94 (U)	—	26.7
RE73-06-67607	73-25552	6.5–7.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67608	73-25553	0.0–1.0	Soil	—	—	—	—	—	—	—	—
RE73-06-67609	73-25553	3.0–4.0	Soil	—	—	—	—	—	—	—	—
RE73-06-67614	73-25555	0.0–1.0	Soil	—	—	—	—	—	—	—	—
RE73-06-67615	73-25555	2.0–3.0	Soil	—	—	—	—	—	0.599 (U)	—	—
RE73-06-67617	73-25556	0.0–1.0	Soil	—	—	—	—	—	—	—	—
RE73-06-67618	73-25556	1.5–2.5	Soil	—	—	—	—	—	0.52 (U)	—	—
RE73-06-67629	73-25560	0.0–1.0	Soil	—	—	—	—	—	0.529 (U)	—	—
RE73-06-67630	73-25560	1.5–2.0	Soil	—	—	—	—	—	0.521 (U)	—	—
RE73-06-67631	73-25560	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	8.23
RE73-07-74566	73-25554	2.5–3.5	Qbt 3	10700 (J+)	—	—	—	—	—	—	12.4
RE73-07-74540	73-25555	3.5–4.5	Qbt 3	8660 (J+)	—	—	—	—	—	—	24.6
RE73-07-74535	73-27235	2.0–3.0	Qbt 3	—	—	—	—	—	—	—	12.1
RE73-07-74538	73-27236	1.0–2.0	Soil	—	—	—	—	—	0.541 (U)	—	—

Table 7.3.4-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium
Soil/Fill BV[a]				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**
Qbt 2,3,4 BV[a]				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**
Residential Soil Screening Levels[b]				**77800**	**31.3**	**3.9**	**15600**	**156**	**39**	**na**[c]	**2100**[e]
RE73-07-74539	73-27236	3.0–4.0	Qbt 3	—	—	—	—	—	—	—	8.14
RE73-07-74541	73-27237	3.0–3.5	Soil	—	—	—	—	—	2.76 (U)	—	—
RE73-07-74542	73-27237	4.0–5.0	Qbt 3	—	—	3.09	55.5	—	2.7 (U)	—	—
RE73-07-74543	73-27237	6.0–7.0	Qbt 3	—	—	—	—	—	2.57 (U)	—	—
RE73-07-74544	73-27238	3.0–4.0	Soil	—	—	—	—	—	0.606 (U)	—	—
RE73-07-74545	73-27238	4.5–5.0	Qbt 3	—	—	—	—	—	2.83 (U)	—	—
RE73-07-74546	73-27238	6.5–7.0	Qbt 3	—	—	3.03	—	—	2.67 (U)	—	—

Table 7.3.4-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel
Soil/Fill BV[a]				**8.64**	**14.7**	**21500**	**22.3**	**4610**	**671**	**0.1**	**15.4**
Qbt 2,3,4 BV[a]				**3.14**	**4.66**	**14500**	**11.2**	**1690**	**482**	**0.1**	**6.58**
Residential Soil Screening Levels[b]				**1520**	**3130**	**23500**	**400**	**na**	**3590**	**23**[e]	**1560**
0173-96-0243	73-02211	7.2–7.4	Qbt 3	3.4	—	—	13	—	—	0.11 (U)	—
RE73-99-0088	73-02211	11.5–12.5	Qbt 3	5.8	9.4	15000	14	2200	—	0.23	6.8
0173-96-0249	73-02213	4.2–4.5	Soil	—	—	—	—	—	—	0.11 (U)	—
0173-96-0246	73-02216	2.2–2.5	Soil	—	23 (J+)	—	190	—	—	0.93	—
0173-96-0501	73-02326	14.0–15.0	Fill	—	—	—	—	—	—	0.12 (U)	—
0173-96-0502	73-02327	14.0–15.0	Fill	—	—	—	—	—	—	0.12 (U)	—
RE73-99-0089	73-10099	7.5–8.5	Fill	—	—	25000	—	5500	—	0.14	—
RE73-99-0090	73-10099	10.0–10.5	Qbt 3	—	—	—	—	—	—	0.11 (U)	—
RE73-06-67569	73-25540	8.0–9.0	Fill	—	—	—	—	—	—	—	—
RE73-06-67570	73-25540	13.0–14.0	Fill	—	—	—	—	—	—	—	—
RE73-06-67571	73-25540	17.0–18.0	Qbt 3	—	—	—	16.4	—	—	—	—
RE73-06-67572	73-25541	2.0–3.0	Fill	—	—	—	—	—	—	—	—
RE73-06-67573	73-25541	4.0–5.0	Fill	—	—	—	—	—	—	—	—
RE73-06-67574	73-25541	7.0–8.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67575	73-25542	2.0–3.0	Fill	—	—	—	—	—	—	—	—
RE73-06-67576	73-25542	3.5–4.5	Fill	—	—	—	—	—	—	0.147	—
RE73-06-67577	73-25542	6.0–8.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67578	73-25543	2.0–3.0	Fill	—	15.8	—	—	—	—	0.115	—
RE73-06-67579	73-25543	4.0–5.0	Fill	—	—	—	—	—	—	—	—
RE73-06-67580	73-25543	7.0–8.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67581	73-25544	3.0–4.0	Fill	—	—	—	—	—	—	—	—
RE73-06-67582	73-25544	6.5–7.5	Fill	—	—	—	—	5100	—	—	—

Table 7.3.4-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel
Soil/Fill BV[a]				**8.64**	**14.7**	**21500**	**22.3**	**4610**	**671**	**0.1**	**15.4**
Qbt 2,3,4 BV[a]				**3.14**	**4.66**	**14500**	**11.2**	**1690**	**482**	**0.1**	**6.58**
Residential Soil Screening Levels[b]				**1520**	**3130**	**23500**	**400**	**na**	**3590**	**23[e]**	**1560**
RE73-06-67583	73-25544	9.0–10.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67600	73-25550	1.5–2.5	Fill	—	—	—	—	5380 (J+)	—	—	—
RE73-06-67601	73-25550	6.5–7.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67603	73-25551	0.5–2.5	Fill	—	—	—	—	—	—	—	—
RE73-06-67604	73-25551	5.5–7.5	Qbt 3	3.27	6.6	—	12	3110 (J+)	—	—	7.81
RE73-06-67606	73-25552	1.5–2.5	Fill	15.9	—	26800	26.8	7380 (J+)	699	—	21.4
RE73-06-67607	73-25552	6.5–7.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-06-67608	73-25553	0.0–1.00	Soil	—	—	—	—	—	—	—	—
RE73-06-67609	73-25553	3.0–4.0	Soil	—	—	—	—	—	—	—	—
RE73-06-67614	73-25555	0.0–1.0	Soil	—	14.9	—	31.7	—	—	—	—
RE73-06-67615	73-25555	2.0–3.0	Soil	247	47.7	—	—	—	—	—	—
RE73-06-67617	73-25556	0.0–1.0	Soil	—	—	—	—	—	—	—	—
RE73-06-67618	73-25556	1.5–2.5	Soil	—	—	—	—	—	—	—	—
RE73-06-67629	73-25560	0.0–1.0	Soil	—	—	—	—	—	—	—	—
RE73-06-67630	73-25560	1.5–2.0	Soil	—	—	—	—	—	—	—	—
RE73-06-67631	73-25560	2.0–2.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74566	73-25554	2.5–3.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74540	73-25555	3.5–4.5	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74535	73-27235	2.0–3.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74538	73-27236	1.0–2.0	Soil	—	—	—	—	—	—	—	—
RE73-07-74539	73-27236	3.0–4.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74541	73-27237	3.0–3.5	Soil	—	—	—	—	—	—	—	—

Table 7.3.4-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel
Soil/Fill BV[a]				**8.64**	**14.7**	**21500**	**22.3**	**4610**	**671**	**0.1**	**15.4**
Qbt 2,3,4 BV[a]				**3.14**	**4.66**	**14500**	**11.2**	**1690**	**482**	**0.1**	**6.58**
Residential Soil Screening Levels[b]				**1520**	**3130**	**23500**	**400**	**na**	**3590**	**23**[e]	**1560**
RE73-07-74542	73-27237	4.0–5.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74543	73-27237	6.0–7.0	Qbt 3	—	—	—	—	—	—	—	—
RE73-07-74544	73-27238	3.0–4.0	Soil	—	—	—	—	—	—	—	—
RE73-07-74545	73-27238	4.5–5.0	Qbt 3	—	—	—	30.2	—	—	—	—
RE73-07-74546	73-27238	6.5–7.0	Qbt 3	—	—	—	16.2	—	—	—	—

Table 7.3.4-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Nitrate	Perchlorate	Potassium	Selenium	Silver	Thallium	Vanadium	Zinc
Soil/Fill BV[a]				**na**	**na**	**3460**	**1.52**	**1**	**0.73**	**39.6**	**48.8**
Qbt 2,3,4 BV[a]				**na**	**na**	**3500**	**0.3**	**1**	**1.1**	**17**	**63.5**
Residential Soil Screening Levels[b]				**100000**	**55**[e]	**na**	**391**	**391**	**5.16**	**78.2**	**23500**
0173-96-0243	73-02211	7.2–7.4	Qbt 3	NA[e]	NA	—	—	2.2 (U)	1.4 (UJ)	—	80
RE73-99-0088	73-02211	11.5–12.5	Qbt 3	NA	NA	—	—	—	—	22	—
0173-96-0249	73-02213	4.2–4.5	Soil	NA	NA	—	—	2.2 (U)	1.4 (UJ)	—	—
0173-96-0246	73-02216	2.2–2.5	Soil	NA	NA	—	—	2.7 (U)	1.7 (U)	42	150
0173-96-0501	73-02326	14.0–15.0	Fill	NA	NA	—	—	2.4 (U)	1.2 (U)	—	260
0173-96-0502	73-02327	14.0–15.0	Fill	NA	NA	—	—	2.4 (U)	1.2 (U)	—	61
RE73-99-0089	73-10099	7.5–8.5	Fill	NA	NA	—	—	—	—	—	62
RE73-99-0090	73-10099	10.0–10.5	Qbt 3	NA	NA	—	—	—	—	—	—
RE73-06-67569	73-25540	8.0–9.0	Fill	13.6 (J-)	0.000791 (J)	—	17.7	—	—	—	—
RE73-06-67570	73-25540	13.0–14.0	Fill	13.6	0.00289	—	14.9	—	—	—	—
RE73-06-67571	73-25540	17.0–18.0	Qbt 3	5	—	—	8.15	—	—	—	—
RE73-06-67572	73-25541	2.0–3.0	Fill	—	—	—	8.8	—	—	—	—
RE73-06-67573	73-25541	4.0–5.0	Fill	9.37	—	—	19.5	—	—	—	—
RE73-06-67574	73-25541	7.0–8.0	Qbt 3	41	—	—	8.5	—	—	—	—
RE73-06-67575	73-25542	2.0–3.0	Fill	2.18	—	—	18.2	—	—	—	—
RE73-06-67576	73-25542	3.5–4.5	Fill	6.21	—	—	24.5	—	—	—	—
RE73-06-67577	73-25542	6.0–8.0	Qbt 3	5.67	—	—	8.45	—	—	—	—
RE73-06-67578	73-25543	2.0–3.0	Fill	—	—	—	19.6	—	—	—	—
RE73-06-67579	73-25543	4.0–5.0	Fill	11	0.00181 (J)	—	29.9	—	—	—	—
RE73-06-67580	73-25543	7.0–8.0	Qbt 3	1.09	—	—	9.66	—	—	—	—
RE73-06-67581	73-25544	3.0–4.0	Fill	72.8	0.00216 (J)	—	28.6	—	—	—	—
RE73-06-67582	73-25544	6.5–7.5	Fill	104	0.00249	—	27.7	—	—	—	—

Table 7.3.4-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Nitrate	Perchlorate	Potassium	Selenium	Silver	Thallium	Vanadium	Zinc
Soil/Fill BV[a]				**na**	**na**	**3460**	**1.52**	**1**	**0.73**	**39.6**	**48.8**
Qbt 2,3,4 BV[a]				**na**	**na**	**3500**	**0.3**	**1**	**1.1**	**17**	**63.5**
Residential Soil Screening Levels[b]				**100000**	**55**[e]	**na**	**391**	**391**	**5.16**	**78.2**	**23500**
RE73-06-67583	73-25544	9.0–10.0	Qbt 3	6.19	0.00117 (J)	—	13.5	—	—	—	—
RE73-06-67600	73-25550	1.5–2.5	Fill	1.22	0.00592	—	1.68 (U)	—	—	—	52.4
RE73-06-67601	73-25550	6.5–7.5	Qbt 3	—	0.00145 (J)	—	1.52 (U)	—	—	—	—
RE73-06-67603	73-25551	0.5–2.5	Fill	1.31	0.00358	—	1.71 (U)	—	—	—	—
RE73-06-67604	73-25551	5.5–7.5	Qbt 3	—	0.000589 (J)	—	1.52 (U)	—	—	21.5	—
RE73-06-67606	73-25552	1.5–2.5	Fill	1.3	0.00702	4140 (J+)	8.82 (U)	—	—	52	66.5
RE73-06-67607	73-25552	6.5–7.5	Qbt 3	—	0.00222	—	1.55 (U)	—	—	—	—
RE73-06-67608	73-25553	0.0–1.0	Soil	6.07	0.00158 (J)	—	1.57 (U)	—	—	—	—
RE73-06-67609	73-25553	3.0–4.0	Soil	7.12	0.00229	—	—	—	—	—	50.6
RE73-06-67614	73-25555	0.0–1.0	Soil	4.51	0.000824 (J)	—	1.79 (U)	3.95	—	—	61.9
RE73-06-67615	73-25555	2.0–3.0	Soil	—	—	—	1.8 (U)	44.3	—	—	65.2
RE73-06-67617	73-25556	0.0–1.0	Soil	3.04	—	—	1.74 (U)	—	—	—	—
RE73-06-67618	73-25556	1.5–2.5	Soil	1.08	0.000532 (J)	—	1.56 (U)	—	—	—	—
RE73-06-67629	73-25560	0.0–1.0	Soil	0.765 (J)	—	—	—	—	—	—	—
RE73-06-67630	73-25560	1.5–2.0	Soil	0.813 (J)	—	—	—	—	—	—	—
RE73-06-67631	73-25560	2.0–2.5	Qbt 3	0.753 (J)	—	—	1.49 (U)	—	—	—	—
RE73-07-74566	73-25554	2.5–3.5	Qbt 3	—	—	—	0.63 (U)	—	—	17.7	—
RE73-07-74540	73-25555	3.5–4.5	Qbt 3	—	—	—	0.626 (U)	—	—	—	—
RE73-07-74535	73-27235	2.0–3.0	Qbt 3	—	—	—	0.585 (U)	—	—	—	—
RE73-07-74538	73-27236	1.0–2.0	Soil	—	—	—	—	—	—	—	—
RE73-07-74539	73-27236	3.0–4.0	Qbt 3	—	—	—	0.607 (U)	—	—	—	—
RE73-07-74541	73-27237	3.0–3.5	Soil	—	—	—	4.17	—	—	—	—

Table 7.3.4-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Nitrate	Perchlorate	Potassium	Selenium	Silver	Thallium	Vanadium	Zinc
Soil/Fill BV[a]				**na**	**na**	**3460**	**1.52**	**1**	**0.73**	**39.6**	**48.8**
Qbt 2,3,4 BV[a]				**na**	**na**	**3500**	**0.3**	**1**	**1.1**	**17**	**63.5**
Residential Soil Screening Levels[b]				**100000**	**55**[e]	**na**	**391**	**391**	**5.16**	**78.2**	**23500**
RE73-07-74542	73-27237	4.0–5.0	Qbt 3	—	—	—	2.97	—	—	—	—
RE73-07-74543	73-27237	6.0–7.0	Qbt 3	—	—	—	2.78	—	—	—	—
RE73-07-74544	73-27238	3.0–4.0	Soil	—	—	—	2.97	—	—	—	—
RE73-07-74545	73-27238	4.5–5.0	Qbt 3	—	—	—	2.95	—	—	—	—
RE73-07-74546	73-27238	6.5–7.0	Qbt 3	—	—	—	2.87	—	—	—	—

Note: Units are mg/kg.

[a] BVs from LANL 1998, 059730.

[b] SSLs from NMED 2006, 092513, unless otherwise noted.

[c] na = Not available.

[d] — Result was not detected or was detected below the BV.

[e] SSLs from EPA Region 2006, 094321.

Table 7.3.4-3
Radionuclides Detected or Detected above FVs at SWMU 73-004(b)

Sample ID	Location ID	Depth (ft)	Media	Tritium
Soil/Fill BV[a]				**n/a**[b]
Qbt 2,3,4 BV[a]				**na**
Residential Screening Action Levels[d]				**750**
0173-96-0243	73-02211	7.2–7.4	Qbt 3	0.29
0173-96-0249	73-02213	4.2–4.5	Soil	0.1

Note: Units are pCi/g.

[a] BVs from LANL 1998, 059730.

[b] n/a = Not applicable

[c] na = Not available.

[d] SALs from LANL 2005, 088439.

Table 7.3.4-4
Detected Organic Chemicals at SWMU 73-004(b)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acetone	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene
Residential Soil Screening Levels[a]				**3730**	**28100**	**22000**	**1.12**	**1.12**	**6.21**	**0.621**	**6.21**
0173-96-0243	73-02211	7.2–7.4	Qbt 3	—[b]	—	—	—	—	0.14 (J)	0.13 (J)	0.27 (J)
0173-96-0249	73-02213	4.2–4.5	Soil	—	—	—	—	—	0.28 (J)	0.32 (J)	0.56
0173-96-0246	73-02216	2.2–2.5	Soil	—	—	—	—	—	0.39	0.35	0.37
0173-96-0501	73-02326	14.0–15.0	Fill	—	0.025 (J-)	—	—	—	—	—	—
0173-96-0502	73-02327	14.0–15.0	Fill	—	—	—	—	—	—	—	—
RE73-99-0093	73-10098	7.5–7.75	Fill	—	NA[c]	—	—	—	—	—	—
RE73-99-0087	73-10098	12.5–13.5	Fill	—	NA	—	—	—	—	—	—
RE73-06-67573	73-25541	4.0–5.0	Fill	—	—	—	4.55	1.96	0.0131 (J)	—	0.0146 (J)
RE73-06-67574	73-25541	7.0–8.0	Qbt 3	—	—	—	0.0018 (J)	—	—	—	—
RE73-06-67575	73-25542	2.0–3.0	Fill	—	—	0.0171 (J)	—	—	0.1	0.0848	0.164
RE73-06-67576	73-25542	3.5–4.5	Fill	—	—	—	—	—	0.0227 (J)	0.0201 (J)	0.0342 (J)
RE73-06-67578	73-25543	2.0–3.0	Fill	0.172	—	0.267	—	0.0142 (J-)	0.462	0.467	0.783
RE73-06-67603	73-25551	0.5–2.5	Fill	—	—	—	0.201	0.138	—	—	—
RE73-06-67604	73-25551	5.5–7.5	Qbt 3	—	—	—	0.0036 (J)	—	—	—	—
RE73-06-67609	73-25553	3.0–4.0	Soil	—	—	0.00971 (J)	—	—	—	—	—
RE73-06-67614	73-25555	0.0–1.0	Soil	—	—	—	—	—	—	—	0.051
RE73-06-67615	73-25555	2.0–3.0	Soil	—	—	—	—	—	—	—	—
RE73-06-67617	73-25556	0.0–1.0	Soil	—	—	0.00954 (J)	—	—	—	—	—
RE73-06-67618	73-25556	1.5–2.5	Soil	—	—	—	—	—	—	—	—
RE73-06-67629	73-25560	0.0–1.0	Soil	—	—	—	—	—	—	—	—
RE73-07-74566	73-25554	2.5–3.5	Qbt 3	—	—	—	0.0317	0.0114	—	—	—
RE73-07-74534	73-27235	0.0–1.0	Soil	—	—	—	0.00157 (J)	—	—	—	—
RE73-07-74542	73-27237	4.0–5.0	Qbt 3	—	—	—	—	0.0014 (J)	—	—	—

Table 7.3.4-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Butylbenzylphthalate	Chlordane[alpha-]	Chlordane[gamma-]
Residential Soil Screening Levels[a]				**2290**[d]	**62.1**	**100000**[e]	**347**	**240**[e,f]	**16.2**[g]	**16.2**[g]
0173-96-0243	73-02211	7.2–7.4	Qbt 3	0.089 (J)	—	—	0.64	—	—	—
0173-96-0249	73-02213	4.2–4.5	Soil	0.17 (J)	—	—	0.34 (J)	—	0.066 (J)	0.069 (J)
0173-96-0246	73-02216	2.2–2.5	Soil	—	0.29	—	—	—	0.46	0.52
0173-96-0501	73-02326	14.0–15.0	Fill	—	—	—	—	—	0.028	0.038
0173-96-0502	73-02327	14.0–15.0	Fill	—	—	—	—	—	—	—
RE73-99-0093	73-10098	7.5–7.75	Fill	—	—	—	—	—	—	—
RE73-99-0087	73-10098	12.5–13.5	Fill	—	—	—	—	—	—	—
RE73-06-67573	73-25541	4.0–5.0	Fill	—	—	—	—	—	—	—
RE73-06-67574	73-25541	7.0–8.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67575	73-25542	2.0–3.0	Fill	—	—	—	—	—	—	—
RE73-06-67576	73-25542	3.5–4.5	Fill	—	—	—	—	—	—	—
RE73-06-67578	73-25543	2.0–3.0	Fill	0.148 (J)	—	—	—	—	—	—
RE73-06-67603	73-25551	0.5–2.5	Fill	—	—	—	—	—	—	—
RE73-06-67604	73-25551	5.5–7.5	Qbt 3	—	—	—	—	—	—	—
RE73-06-67609	73-25553	3.0–4.0	Soil	—	—	—	—	—	—	—
RE73-06-67614	73-25555	0.0–1.0	Soil	—	0.0183 (J)	0.668 (J)	—	—	0.0262	0.0176
RE73-06-67615	73-25555	2.0–3.0	Soil	—	—	—	—	—	0.00106	0.000658
RE73-06-67617	73-25556	0.0–1.0	Soil	—	—	—	—	—	—	—
RE73-06-67618	73-25556	1.5–2.5	Soil	—	—	—	—	0.139 (J)	—	—
RE73-06-67629	73-25560	0.0–1.0	Soil	—	—	—	—	—	—	—
RE73-07-74566	73-25554	2.5–3.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74534	73-27235	0.0–1.0	Soil	—	—	—	—	—	—	—
RE73-07-74542	73-27237	4.0–5.0	Qbt 3	—	—	—	—	—	—	—

Table 7.3.4-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chrysene	DDD[4,4'-]	DDE[4,4'-]	DDT[4,4'-]	Di-n-butylphthalate	Di-n-octylphthalate	Endrin Aldehyde
Residential Soil Screening Levels[a]				**615**	**24.4**	**17.2**	**17.2**	**6110**	**2400**[h]	**18.3**[i]
0173-96-0243	73-02211	7.2–7.4	Qbt 3	0.16 (J)	—	—	170	—	—	—
0173-96-0249	73-02213	4.2–4.5	Soil	0.29 (J)	4.7	—	0.13 (J)	—	—	—
0173-96-0246	73-02216	2.2–2.50	Soil	0.46	1.5	0.13	0.34	—	—	—
0173-96-0501	73-02326	14.0–15.0	Fill	—	0.31	0.089	0.11	—	—	—
0173-96-0502	73-02327	14.0–15.0	Fill	—	0.042	0.01	0.021	—	—	—
RE73-99-0093	73-10098	7.5–7.75	Fill	—	—	0.0043	—	—	—	—
RE73-99-0087	73-10098	12.5–13.5	Fill	—	—	0.0059	0.011	—	—	—
RE73-06-67573	73-25541	4.0–5.0	Fill	—	—	—	—	—	—	—
RE73-06-67574	73-25541	7.0–8.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67575	73-25542	2.0–3.0	Fill	0.112	—	—	—	—	—	—
RE73-06-67576	73-25542	3.5–4.5	Fill	0.0245 (J)	—	—	—	—	—	—
RE73-06-67578	73-25543	2.0–3.0	Fill	0.521	—	—	—	—	—	—
RE73-06-67603	73-25551	0.5–2.5	Fill	—	—	—	—	—	—	—
RE73-06-67604	73-25551	5.5–7.5	Qbt 3	—	—	—	—	—	—	—
RE73-06-67609	73-25553	3.0–4.0	Soil	—	—	—	—	—	—	—
RE73-06-67614	73-25555	0.0–1.0	Soil	0.0343 (J)	0.0139 (J)	0.017 (J)	0.0301	0.449	—	—
RE73-06-67615	73-25555	2.0–3.0	Soil	—	0.00057	0.000909 (J)	0.00133	—	0.122 (J)	—
RE73-06-67617	73-25556	0.0–1.0	Soil	—	—	—	—	—	—	—
RE73-06-67618	73-25556	1.5–2.5	Soil	—	—	—	—	—	—	0.00792
RE73-06-67629	73-25560	0.0–1.0	Soil	—	—	—	—	—	—	—
RE73-07-74566	73-25554	2.5–3.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74534	73-27235	0.0–1.0	Soil	—	—	—	—	—	—	—
RE73-07-74542	73-27237	4.0–5.0	Qbt 3	—	—	—	—	—	—	—

Table 7.3.4-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	MethylNaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene
Residential Soil Screening Levels[a]				**2290**	**2660**	**6.21**	**79.5**[j]	**79.5**	**1830**	**2290**
0173-96-0243	73-02211	7.2–7.4	Qbt 3	0.36 (J)	—	0.077 (J)	—	—	0.17 (J)	0.28 (J)
0173-96-0249	73-02213	4.2–4.5	Soil	0.27 (J)	—	0.17 (J)	—	—	—	0.25 (J)
0173-96-0246	73-02216	2.2–2.5	Soil	0.7	—	—	—	—	0.38	0.54
0173-96-0501	73-02326	14.0–15.0	Fill	—	—	—	—	—	—	—
0173-96-0502	73-02327	14.0–15.0	Fill	—	—	—	—	—	—	—
RE73-99-0093	73-10098	7.5–7.75	Fill	—	—	—	—	—	—	—
RE73-99-0087	73-10098	12.5–13.5	Fill	—	—	—	—	—	—	—
RE73-06-67573	73-25541	4.0–5.0	Fill	0.0162 (J)	—	—	—	—	0.0135 (J)	0.0125 (J)
RE73-06-67574	73-25541	7.0–8.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67575	73-25542	2.0–3.0	Fill	0.209	—	—	—	—	0.1	0.179
RE73-06-67576	73-25542	3.5–4.5	Fill	0.0447	—	—	—	—	0.0341 (J)	0.048
RE73-06-67578	73-25543	2.0–3.0	Fill	1.22	0.132	0.157 (J)	0.0167 (J)	0.0326 (J)	1.08	1.08
RE73-06-67603	73-25551	0.5–2.5	Fill	—	—	—	—	—	—	—
RE73-06-67604	73-25551	5.5–7.5	Qbt 3	—	—	—	—	—	—	—
RE73-06-67609	73-25553	3.0–4.0	Soil	0.019 (J)	—	—	—	—	—	0.02 (J)
RE73-06-67614	73-25555	0.0–1.0	Soil	0.0738	—	—	—	—	0.0439	0.0558
RE73-06-67615	73-25555	2.0–3.0	Soil	—	—	—	—	—	—	—
RE73-06-67617	73-25556	0.0–1.0	Soil	0.0172 (J)	—	—	—	—	—	—
RE73-06-67618	73-25556	1.5–2.5	Soil	—	—	—	—	—	—	—
RE73-06-67629	73-25560	0.0–1.0	Soil	0.0158 (J)	—	—	—	—	0.0112 (J)	0.0161 (J)
RE73-07-74566	73-25554	2.5–3.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.4-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	MethylNaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene
Residential Soil Screening Levels[a]				**2290**	**2660**	**6.21**	**79.5**[j]	**79.5**	**1830**	**2290**
RE73-07-74534	73-27235	0.0–1.0	Soil	—	—	—	—	—	—	—
RE73-07-74542	73-27237	4.0–5.0	Qbt 3	—	—	—	—	—	—	—

Note: Units are mg/kg.

[a] SSLs from NMED 2006, 092513, unless otherwise noted.

[b] — = Result was not detected.

[c] NA = Not analyzed.

[d] Pyrene used as a surrogate based on structural similarity.

[e] SSLs from EPA Region 6 2006, 094321.

[f] SSL is saturation limit, not risk-based.

[g] Chlordane used as a surrogate based on structural similarity.

[h] SSL from EPA Region 9 (http://www.epa.gov/region09/waste/sfund/prg/files/04prgtable.pdf).

[i] Endrin used as a surrogate because endrin aldehyde is a breakdown product.

[j] Napthalene used as a surrogate based on structural similarity.

Table 7.3.5-1
Summary of COPCs at SWMU 73-006

Inorganic COPCs	Organic COPCs	Radionuclide COPCs
Aluminum	Acenaphthene	Plutonium-239
Antimony	Anthracene	
Barium	Aroclor-1260	
Cadmium	Benzo(a)anthracene	
Copper	Benzo(a)pyrene	
Lead	Benzo(b)fluoranthene	
Mercury	Benzo(g,h,i)perylene	
Nickel	Benzo(k)fluoranthene	
Nitrate	Bis(2-ethylhexyl)phthalate	
Selenium	Chrysene	
Silver	4,4'-DDD	
Vanadium	4,4'-DDE	
Zinc	4,4'-DDT	
	Diethylphthalate	
	Fluoranthene	
	Fluorene	
	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	
	1,2,3,4,6,7,8-Heptachlorodibenzofuran	
	1,2,3,4,7,8,9-Heptachlorodibenzofuran	
	1,2,3,4,7,8-Hexachlorodibenzodioxin	
	1,2,3,6,7,8-Hexachlorodibenzodioxin	
	1,2,3,7,8,9-Hexachlorodibenzodioxin	
	1,2,3,4,7,8-Hexachlorodibenzofuran	
	1,2,3,6,7,8-Hexachlorodibenzofuran	
	1,2,3,7,8,9-Hexachlorodibenzofuran	
	2,3,4,6,7,8-Hexachlorodibenzofuran	
	Indeno(1,2,3-cd)pyrene	
	4-Isopropyltoluene	
	2-Methylnaphthalene	
	Naphthalene	
	1,2,3,4,6,7,8,9-Octachlorodibenzodioxin	
	1,2,3,4,6,7,8,9-Octachlorodibenzofuran	
	1,2,3,7,8-Pentachlorodibenzodioxin	
	1,2,3,7,8-Pentachlorodibenzofuran	
	2,3,4,7,8-Pentachlorodibenzofuran	
	Phenanthrene	
	Pyrene	
	2,3,7,8-Tetrachlorodibenzodioxin	
	2,3,7,8-Tetrachlorodibenzofuran	
	1,1,2-Trichloro-1,2,2-trifluoroethane	

Table 7.3.5-2
Inorganic Chemicals above BVs at SWMU 73-006

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Cadmium	Calcium	Chromium
Soil/Fill BV[a]				**29200**	**0.83**	**8.17**	**295**	**0.4**	**6120**	**19.3**
Qbt 2,3,4 BV[a]				**7340**	**0.5**	**2.79**	**46**	**1.63**	**2200**	**7.14**
Residential Soil Screening Levels[b]				**77800**	**31.3**	**3.9**	**15600**	**39**	**na**[c]	**2100**[d]
0173-97-0202	73-02442	2.8–3.0	Fill	—[e]	7.9 (UJ)	—	—	0.69 (UJ)	—	—
RE73-99-0108	73-02442	5.0–5.5	Qbt 3	—	—	—	55	—	2800	—
0173-97-0203	73-02443	3.2–3.4	Fill	—	8.5 (UJ)	—	—	1.6 (J-)	—	—
RE73-99-0107	73-02443	5.0–5.5	Qbt 3	—	—	—	50	—	3200	—
0173-97-0204	73-02444	3.0–3.2	Fill	—	8.6 (UJ)	—	—	3.4 (J-)	—	—
RE73-99-0109	73-10096	4.3–4.8	Qbt 3	—	—	—	—	—	—	—
RE73-99-0110	73-10097	5.0–5.5	Fill	—	—	—	—	0.84	27000	—
RE73-06-67585	73-25545	1.5–2.5	Fill	—	—	—	—	0.519 (U)	—	—
RE73-06-67586	73-25545	4.0–5.0	Qbt 3	—	—	—	138	—	46000	—
RE73-06-67588	73-25546	2.0–2.5	Fill	—	—	—	—	1.54	—	—
RE73-06-67589	73-25546	4.0–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67591	73-25547	3.0–5.0	Fill	—	—	—	—	0.417 (J)	—	—
RE73-06-67592	73-25547	5.5–7.5	Qbt 3	—	—	—	—	—	—	—
RE73-06-67626	73-25559	0.0–1.0	Fill	—	—	—	—	2.92	6450 (J)	—
RE73-07-74550	73-25558	0.0–0.5	Soil	37700	—	—	—	3.07 (U)	—	23.8
RE73-07-74551	73-25558	2.0–3.0	Qbt 3	20500	—	3.37	91.6	—	3760 (J+)	12.2
RE73-07-74552	73-27240	0.0–0.5	Soil	—	—	—	—	0.582 (U)	—	—
RE73-07-74553	73-27240	2.0–2.5	Qbt 3	—	—	—	—	—	—	9.84
RE73-07-74554	73-27241	0.0–0.5	Qbt 3	12700	—	—	71.8	—	2790 (J+)	7.86
RE73-07-74555	73-27241	1.75–2.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.5-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cobalt	Copper	Iron	Lead	Magnesium	Mercury	Nickel
Soil/Fill BV[a]				**0.83**	**8.17**	**21500**	**8.64**	**14.7**	**0.1**	**15.4**
Qbt 2,3,4 BV[a]				**0.5**	**2.79**	**14500**	**3.14**	**4.66**	**0.1**	**6.58**
Residential Soil Screening Levels[b]				**1520**	**3130**	**23500**	**400**	**na**	**23[d]**	**1560**
0173-97-0202	73-02442	2.8–3.0	Fill	—	16	—	—	—	0.82	—
RE73-99-0108	73-02442	5.0–5.5	Qbt 3	—	6.5	—	12	—	0.11 (U)	—
0173-97-0203	73-02443	3.2–3.4	Fill	—	46.1	—	38.3	—	1.5	—
RE73-99-0107	73-02443	5.0–5.5	Qbt 3	—	14	—	15	—	0.16	—
0173-97-0204	73-02444	3.0–3.2	Fill	9.2 (J)	83.1	—	22.9	—	7.9	30.3
RE73-99-0109	73-10096	4.3–4.8	Qbt 3	—	—	—	—	—	—	—
RE73-99-0110	73-10097	5.0–5.5	Fill	—	—	—	48	—	—	—
RE73-06-67585	73-25545	1.5–2.5	Fill	—	—	—	—	—	—	—
RE73-06-67586	73-25545	4.0–5.0	Qbt 3	—	—	—	—	2030	—	10.3
RE73-06-67588	73-25546	2.0–2.5	Fill	—	32.4	—	134 (J-)	—	—	—
RE73-06-67589	73-25546	4.0–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67591	73-25547	3.0–5.0	Fill	—	61.5	—	35.9	—	0.487	—
RE73-06-67592	73-25547	5.5–7.5	Qbt 3	—	—	—	—	—	—	—
RE73-06-67626	73-25559	0.0–1.0	Fill	—	56.4	—	99.3 (J-)	—	—	—
RE73-07-74550	73-25558	0.0–0.5	Soil	—	—	23900	75.4	6360 (J+)	—	—
RE73-07-74551	73-25558	2.0–3.0	Qbt 3	—	6.02	15500	173	3990 (J+)	—	—
RE73-07-74552	73-27240	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-74553	73-27240	2.0–2.5	Qbt 3	—	—	—	48.6	—	—	—
RE73-07-74554	73-27241	0.0–0.5	Qbt 3	—	6.89	—	12.5	1830 (J+)	—	—
RE73-07-74555	73-27241	1.75–2.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.5-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Nitrate	Selenium	Silver	Thallium	Vanadium	Zinc
Soil/Fill BV[a]				**na**	**1.52**	**1**	**0.73**	**39.6**	**48.8**
Qbt 2,3,4 BV[a]				**na**	**0.3**	**1**	**1.1**	**17**	**63.5**
Residential Soil Screening Levels[b]				**100000**	**391**	**391**	**5.16**	**78.2**	**23500**
0173-97-0202	73-02442	2.8–3.0	Fill	NA[f]	—	—	—	—	57.8
RE73-99-0108	73-02442	5.0–5.5	Qbt 3	NA	—	—	—	—	—
0173-97-0203	73-02443	3.2–3.4	Fill	NA	—	4.1	—	—	270
RE73-99-0107	73-02443	5.0–5.5	Qbt 3	NA	—	—	—	—	—
0173-97-0204	73-02444	3.0–3.2	Fill	NA	—	2.2 (J)	—	—	1250
RE73-99-0109	73-10096	4.3–4.8	Qbt 3	NA	0.41 (UJ)	—	—	—	—
RE73-99-0110	73-10097	5.0–5.5	Fill	NA	—	—	—	—	63
RE73-06-67585	73-25545	1.5–2.5	Fill	1.65	20.4	1.24	—	—	—
RE73-06-67586	73-25545	4.0–5.0	Qbt 3	1.77	79.8 (U)	—	—	—	—
RE73-06-67588	73-25546	2.0–2.5	Fill	0.826 (J)	1.66 (U)	2.24	—	—	110
RE73-06-67589	73-25546	4.0–5.0	Qbt 3	—	9.96	—	—	—	—
RE73-06-67591	73-25547	3.0–5.0	Fill	1.12	1.69 (U)	1.82 (J)	—	—	90.6
RE73-06-67592	73-25547	5.5–7.5	Qbt 3	—	1.61 (U)	—	—	—	—
RE73-06-67626	73-25559	0.0–1.0	Fill	0.824 (J)	—	9.08	—	—	303
RE73-07-74550	73-25558	0.0–0.5	Soil	—	3.69 (U)	—	0.85	40.7	84.2
RE73-07-74551	73-25558	2.0–3.0	Qbt 3	—	0.889 (J)	—	—	25.6	64.5
RE73-07-74552	73-27240	0.0–0.5	Soil	—	—	—	—	—	—
RE73-07-74553	73-27240	2.0–2.5	Qbt 3	—	0.689 (U)	—	—	—	—

Table 7.3.5-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Nitrate	Selenium	Silver	Thallium	Vanadium	Zinc
Soil/Fill BV[a]				**na**	**1.52**	**1**	**0.73**	**39.6**	**48.8**
Qbt 2,3,4 BV[a]				**na**	**0.3**	**1**	**1.1**	**17**	**63.5**
Residential Soil Screening Levels[b]				**100000**	**391**	**391**	**5.16**	**78.2**	**23500**
RE73-07-74554	73-27241	0.0–0.5	Qbt 3	—	0.692 (U)	—	—	—	—
RE73-07-74555	73-27241	1.75–2.5	Qbt 3	—	0.634 (U)	—	—	—	—

Note: Units are mg/kg.

[a] BVs from LANL 1998, 059730.

[b] SSLs from NMED 2006, 092513, unless otherwise noted.

[c] na = Not available.

[d] SSL from EPA Region 6 (EPA 2006, 094321)

[e] — The result was not detected or below the BV.

[f] NA = Not analyzed.

Table 7.3.5-3
Detected Organic Chemicals at SWMU 73-006

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene
Residential Soil Screening Levels[a]				**3730**	**22000**	**1.12**	**6.21**	**0.621**	**6.21**	**2290**[b]
0173-97-0202	73-02442	2.8–3.0	Fill	—[c]	—	—	—	—	—	—
RE73-99-0108	73-02442	5.0–5.5	Qbt 3	—	—	—	—	—	—	—
0173-97-0203	73-02443	3.2–3.4	Fill	—	—	—	—	0.052 (J)	0.046 (J)	0.12 (J)
0173-97-0204	73-02444	3.0–3.2	Fill	—	—	—	—	—	—	—
RE73-99-0109	73-10096	4.3–4.8	Qbt 3	—	—	—	—	—	—	—
RE73-06-67585	73-25545	1.5–2.5	Fill	0.0297 (J)	0.049	—	0.0899	—	—	—
RE73-06-67586	73-25545	4.0–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67588	73-25546	2.0–2.5	Fill	—	0.0149 (J)	—	0.114	0.113	0.175	0.14
RE73-06-67589	73-25546	4.0–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67591	73-25547	3.0–5.0	Fill	—	—	—	—	—	—	—
RE73-06-67592	73-25547	5.5–7.5	Qbt 3	—	—	—	—	—	—	—
RE73-06-67626	73-25559	0.0–1.0	Fill	—	0.0143 (J)	0.0414 (J)	0.076	0.0744	0.107	0.13
RE73-07-74552	73-27240	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-74553	73-27240	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74554	73-27241	0.0–0.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.5-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Benzo(k)fluoranthene	Bis(2-ethylhexyl)phthalate	Chrysene	DDD[4,4'-]	DDE[4,4'-]	DDT[4,4'-]	Diethylphthalate
Residential Soil Screening Levels[a]				**62.1**	**347**	**615**	**24.4**	**17.2**	**17.2**	**48900**
0173-97-0202	73-02442	2.8–3.0	Fill	—	—	—	0.0048	0.035	0.23	0.067 (J)
RE73-99-0108	73-02442	5.0–5.5	Qbt 3	—	—	—	—	0.0044 (J-)	0.058 (J-)	—
0173-97-0203	73-02443	3.2–3.4	Fill	—	0.069 (J)	0.05 (J)	—	—	0.047	0.16 (J)
0173-97-0204	73-02444	3.0–3.2	Fill	—	—	—	0.022	—	0.22	0.16 (J)
RE73-99-0109	73-10096	4.3–4.8	Qbt 3	—	—	—	—	—	0.0041	—
RE73-06-67585	73-25545	1.5–2.5	Fill	—	—	0.127	—	—	—	—
RE73-06-67586	73-25545	4.0–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67588	73-25546	2.0–2.5	Fill	0.0559	—	0.127	—	—	—	—
RE73-06-67589	73-25546	4.0–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67591	73-25547	3.0–5.0	Fill	—	—	—	—	—	0.023 (J-)	—
RE73-06-67592	73-25547	5.5–7.5	Qbt 3	—	—	—	—	—	—	—
RE73-06-67626	73-25559	0.0–1.0	Fill	0.0567	—	0.084	—	—	—	—
RE73-07-74552	73-27240	0.0–0.5	Soil	—	—	—	—	—	—	—
RE73-07-74553	73-27240	2.0–2.5	Qbt 3	—	—	—	—	—	—	—
RE73-07-74554	73-27241	0.0–0.5	Qbt 3	—	—	—	—	—	—	—

Table 7.3.5-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Fluoranthene	Fluorene	Heptachlorodibenzodioxin[1,2,3,4,6,7,8-]	Heptachlorodibenzodioxins (Total)	Heptachlorodibenzofuran[1,2,3,4,6,7,8-]	Heptachlorodibenzofuran[1,2,3,4,7,8,9-]	Heptachlorodibenzofurans (Total)
Residential Soil Screening Levels[a]				**2290**	**2660**	**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**				
0173-97-0202	73-02442	2.8–3.0	Fill	—	—	—	—	—	—	—
RE73-99-0108	73-02442	5.0–5.5	Qbt 3	—	—	NA[d]	NA	NA	NA	NA
0173-97-0203	73-02443	3.2–3.4	Fill	0.077 (J)	—	—	0.00024 (J)	—	—	—
0173-97-0204	73-02444	3.0–3.2	Fill	—	—	—	—	—	—	—
RE73-99-0109	73-10096	4.3–4.8	Qbt 3	—	—	NA	NA	NA	NA	NA
RE73-06-67585	73-25545	1.5–2.5	Fill	0.161	0.0351 (J)	0.0000154	0.0000365	3.16E-06(J)	1.82E-07 (J)	9.66E-06 (J)
RE73-06-67586	73-25545	4.0–5.0	Qbt 3	—	—	2.53E-07(J)	2.53E-07	—	—	—
RE73-06-67588	73-25546	2.0–2.5	Fill	0.217	—	0.000109	0.000201	0.0000472	—	0.0000799
RE73-06-67589	73-25546	4.0–5.0	Qbt 3	—	—	3.48E-07(J)	0.0000007	—	—	—
RE73-06-67591	73-25547	3.0–5.0	Fill	0.335	—	0.0000355	0.0000595	0.0000199(J)	5.91E-07 (J)	0.0000369 (J)
RE73-06-67592	73-25547	5.5–7.5	Qbt 3	—	—	2.81E-07(J)	4.88E-07	—	—	—
RE73-06-67626	73-25559	0.0–1.0	Fill	0.186	—	0.000171	0.000275	0.0000401	2.67E-06	0.0000875
RE73-07-74552	73-27240	0.0–0.5	Soil	—	—	0.0000102	0.0000171	4.93E-06	—	8.81E-06
RE73-07-74553	73-27240	2.0–2.5	Qbt 3	—	—	2.86E-06	4.94E-06	1.37E-06 (J)	—	2.83E-06
RE73-07-74554	73-27241	0.0–0.5	Qbt 3	—	—	6.08E-06	0.0000109	2.09E-06 (J)	—	2.09E-06

Table 7.3.5-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Hexachlorodibenzodioxin[1,2,3,4,7,8-]	Hexachlorodibenzodioxin[1,2,3,6,7,8-]	Hexachlorodibenzodioxin[1,2,3,7,8,9-]	Hexachlorodibenzodioxins (Total)	Hexachlorodibenzofuran[1,2,3,4,7,8-]	Hexachlorodibenzofuran[1,2,3,6,7,8-]	Hexachlorodibenzofuran[1,2,3,7,8,9-]
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
0173-97-0202	73-02442	2.8–3.0	Fill	—	—	—	—	—	—	—
RE73-99-0108	73-02442	5.0–5.5	Qbt 3	NA	NA	NA	NA	NA	NA	NA
0173-97-0203	73-02443	3.2–3.4	Fill	—	—	—	—	—	—	—
0173-97-0204	73-02444	3.0–3.2	Fill	—	—	—	—	—	—	—
RE73-99-0109	73-10096	4.3–4.8	Qbt 3	NA	NA	NA	NA	NA	NA	NA
RE73-06-67585	73-25545	1.5–2.5	Fill	1.92E-07 (J)	5.07E-07 (J)	3.97E-07 (J)	4.01E-06	4.08E-07 (J)	2.37E-07 (J)	—
RE73-06-67586	73-25545	4.0–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67588	73-25546	2.0–2.5	Fill	6.27E-06	0.0000111	8.64E-06	0.000148	9.72E-06	9.82E-06	2.01E-06 (J)
RE73-06-67589	73-25546	4.0–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67591	73-25547	3.0–5.0	Fill	1.21E-06 (J)	4.43E-06	2.77E-06	0.0000393	0.0000013(J)	1.22E-06 (J)	3.02E-07 (J)
RE73-06-67592	73-25547	5.5–7.5	Qbt 3	—	—	—	8.52E-08	4.74E-08 (J)	—	—
RE73-06-67626	73-25559	0.0–1.0	Fill	5.03E-06	0.0000108	8.58E-06	0.000131	6.91E-06	7.07E-06	1.76E-06 (J)
RE73-07-74552	73-27240	0.0–0.5	Soil	4.4E-07 (J)	0.0000009 (J)	—	6.32E-06	4.9E-07 (J)	4.7E-07 (J)	—
RE73-07-74553	73-27240	2.0–2.5	Qbt 3	—	—	—	6.7E-07	—	—	—
RE73-07-74554	73-27241	0.0–0.5	Qbt 3	—	2.82E-06	1.26E-06 (J)	0.0000195	3.0E-07 (J)	3.0E-07 (J)	—

Table 7.3.5-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Hexachlorodibenzofuran[2,3,4,6,7,8-]	Hexachlorodibenzofurans (Total)	Indeno(1,2,3-cd)pyrene	Isopropyltoluene[4-]	Methylnaphthalene[2-]	Naphthalene
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD**		**6.21**	**271[e,f]**	**79.5[g]**	**79.5**
0173-97-0202	73-02442	2.8–3.0	Fill	—	—	—	—	—	—
RE73-99-0108	73-02442	5.0–5.5	Qbt 3	NA	NA	—	—	—	—
0173-97-0203	73-02443	3.2–3.4	Fill	—	—	0.051 (J)	—	—	—
0173-97-0204	73-02444	3.0–3.2	Fill	—	—	—	—	—	—
RE73-99-0109	73-10096	4.3–4.8	Qbt 3	NA	NA	—	0.00076 (J)	—	—
RE73-06-67585	73-25545	1.5–2.5	Fill	2.95E-07 (J)	4.86E-06 (J)	—	—	0.0537	0.0256 (J)
RE73-06-67586	73-25545	4.0–5.0	Qbt 3	—	—	—	—	—	—
RE73-06-67588	73-25546	2.0–2.5	Fill	0.0000129	0.000115	0.148	—	—	—
RE73-06-67589	73-25546	4.0–5.0	Qbt 3	—	—	—	—	—	—
RE73-06-67591	73-25547	3.0–5.0	Fill	1.76E-06 (J)	0.0000238 (J)	—	—	—	—
RE73-06-67592	73-25547	5.5–7.5	Qbt 3	4.5E-08 (J)	—	—	—	—	—
RE73-06-67626	73-25559	0.0–1.0	Fill	8.27E-06	0.0000791	0.139	—	—	—
RE73-07-74552	73-27240	0.0–0.5	Soil	6.4E-07 (J)	6.27E-06	—	—	—	—
RE73-07-74553	73-27240	2.0–2.5	Qbt 3	—	0.0000012	—	—	—	—
RE73-07-74554	73-27241	0.0–0.5	Qbt 3	2.7E-07 (J)	2.57E-06	—	—	—	—

Table 7.3.5-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Octachlorodibenzodioxin[1,2,3,4,6,7,8,9-]	Octachlorodibenzofuran[1,2,3,4,6,7,8,9-]	Pentachlorodibenzodioxin[1,2,3,7,8-]	Pentachlorodibenzodioxins (Total)	Pentachlorodibenzofuran[1,2,3,7,8-]	Pentachlorodibenzofuran[2,3,4,7,8-]	Pentachlorodibenzofurans (Totals)
Residential Soil Screening Levels[a]				**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**						
0173-97-0202	73-02442	2.8–3.0	Fill	—	—	—	—	—	—	—
RE73-99-0108	73-02442	5.0–5.5	Qbt 3	NA	NA	NA	NA	NA	NA	NA
0173-97-0203	73-02443	3.2–3.4	Fill	0.00078 (J)	—	—	—	—	—	—
0173-97-0204	73-02444	3.0–3.2	Fill	0.001 (J)	—	—	—	—	—	—
RE73-99-0109	73-10096	4.3–4.8	Qbt 3	NA	NA	NA	NA	NA	NA	NA
RE73-06-67585	73-25545	1.5–2.5	Fill	0.000185	9.98E-06	—	5.05E-07	2.52E-07 (J)	4.79E-07 (J)	5.06E-06
RE73-06-67586	73-25545	4.0–5.0	Qbt 3	1.09E-06 (J)	—	—	—	—	—	—
RE73-06-67588	73-25546	2.0–2.5	Fill	0.000471 (J)	0.0000435	6.49E-06	0.000115	5.73E-06	0.000013	0.000144
RE73-06-67589	73-25546	4.0–5.0	Qbt 3	2.63E-06 (J)	2.68E-07 (J)	—	—	—	—	—
RE73-06-67591	73-25547	3.0–5.0	Fill	0.000165	0.0000149	1.09E-06 (J)	0.0000107	7.18E-07 (J)	1.51E-06 (J)	0.0000154
RE73-06-67592	73-25547	5.5–7.5	Qbt 3	0.0000012 (J)	—	—	—	—	—	—
RE73-06-67626	73-25559	0.0–1.0	Fill	0.000971 (J)	0.0000709	4.88E-06	0.0000714	4.96E-06	9.28E-06	0.000096
RE73-07-74552	73-27240	0.0–0.5	Soil	0.0000484 (J)	5.82E-06	3.4E-07 (J)	2.42E-06	—	5.6E-07 (J)	3.06E-06
RE73-07-74553	73-27240	2.0–2.5	Qbt 3	0.0000141 (J)	2.06E-06 (J)	—	—	—	—	—
RE73-07-74554	73-27241	0.0–0.5	Qbt 3	0.0000257 (J)	2.45E-06 (J)	3.6E-07 (J)	9.7E-07	—	2.8E-07 (J)	0.0000009

Table 7.3.5-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Phenanthrene	Pyrene	Tetrachlorodibenzodioxin[2,3,7,8-]	Tetrachlorodibenzodioxins (Total)	Tetrachlorodibenzofuran[2,3,7,8-]	Tetrachlorodibenzofurans (Total)	Trichloro-1,2,2-trifluoroethane[1,1,2-]
Residential Soil Screening Levels[a]				**1830**	**2290**	**3.9E-05[h]**	**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**			**3280[f]**
0173-97-0202	73-02442	2.8–3.0	Fill	—	—	—	—	—	—	0.002 (J)
RE73-99-0108	73-02442	5.0–5.5	Qbt 3	—	—	—	NA	NA	NA	—
0173-97-0203	73-02443	3.2–3.4	Fill	—	0.072 (J)	—	—	—	—	0.002 (J)
0173-97-0204	73-02444	3.0–3.2	Fill	—	—	—	—	—	—	—
RE73-99-0109	73-10096	4.3–4.8	Qbt 3	—	—	—	NA	NA	NA	—
RE73-06-67585	73-25545	1.5–2.5	Fill	0.192	0.253	—	2.4E-07	2.41E-06	5.71E-06	—
RE73-06-67586	73-25545	4.0–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67588	73-25546	2.0–2.5	Fill	0.0818	0.227	1.31E-06	8.26E-05	4.7E-06	1.53E-04	—
RE73-06-67589	73-25546	4.0–5.0	Qbt 3	—	—	—	—	—	—	—
RE73-06-67591	73-25547	3.0–5.0	Fill	0.0728 (J)	0.328	—	5.44E-06	8.24E-07	1.6E-05	—
RE73-06-67592	73-25547	5.5–7.5	Qbt 3	—	—	—	—	—	—	—
RE73-06-67626	73-25559	0.0–1.0	Fill	0.086	0.151	9.75E-07	4.17E-05	4.82E-06	8.97E-05	—
RE73-07-74552	73-27240	0.0–0.5	Soil	—	—	—	—	—	9.2E-07	—

Table 7.3.5-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Phenanthrene	Pyrene	Tetrachlorodibenzodioxin[2,3,7,8-]	Tetrachlorodibenzodioxins (Total)	Tetrachlorodibenzofuran[2,3,7,8-]	Tetrachlorodibenzofurans (Total)	Trichloro-1,2,2-trifluoroethane[1,1,2-]
Residential Soil Screening Levels[a]				**1830**	**2290**	**3.9E-05**[h]	**SSLs are not available for the individual congeners or totals, only for 2,3,7,8-TCDD.**			**3280**[f]
RE73-07-74553	73-27240	2.0–2.5	Qbt 3	—	—	—	—	—	1.6E-07	—
RE73-07-74554	73-27241	0.0–0.5	Qbt 3	—	—	—	—	6.2E-07	0.0000019	—

Note: Units are mg/kg.

[a] SSLs from NMED 2006, 092513, unless otherwise noted.

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

[c] — = Result was not detected.

[d] NA = Not analyzed.

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

[f] SSL is saturation limit, not risk-based.

[g] Naphthalene used as a surrogate based on structural similarity.

[h] SSLs from EPA Region 6 2006, 094321.

Table 8.3.1-1
Summary of Screening-Level Comparisons for SWMU 73-002

COPC	Number of Samples	Residential Screening Level	Number of Detects Greater Than 10% of Screening Level	Number of Detects Greater Than Screening Level	Maximum Detected Concentration	Ratio of Maximum Detected Concentration / Screening Level
Noncarcinogens						
Aluminum	160	77800	28	0	21300	0.27
Antimony	151	31.3	3[a]	0	12[b]	0.38
Aroclor-1254	153	1.1	1	0	0.173	0.15
Lead	154	400	17	0	232	0.58
Thallium	167	5.16	10[c]	0	1.5[b]	0.29
Carcinogens						
Arsenic	167	3.9	146	7	13.2	**3.38**
Benzo(a)pyrene	154	0.621	5	0	0.276	0.44
Benzo(b)fluoranthene	154	6.21	1	0	0.693	0.11
Radionuclides						
Cesium-137	54	5.6	14	0	5.43	0.97
Plutonium-239	150	33	1	0	5.03	0.15

Note: All units in mg/kg, except radionuclides which are in pCi/g.

[a] Antimony was not detected above 10% of SSL, but the detection limit of three samples was greater than 10% of SSL.

[b] Maximum detection limit.

[c] Thallium was detected above 10% of SSL in two samples. Three additional samples had detection limits greater than 10% of the SSL.

Table 8.3.1-2
Determination of 95% UCLs for SWMU 73-002

COPC	Number of Samples	Number of Detects	Minimum Detect	Maximum Detect	Overall Mean	Standard Deviation	Distribution	95% UCL	UCL Method
Noncarcinogens									
Aluminum	160	160	366	21,300	4290	4080	Nonparametric	5700	Chebyshev
Antimony	151	63	0.061	0.60	0.30	0.75	Nonparametric	0.56	Chebyshev
Aroclor-1254	153	19	0.002	0.173	0.012	0.016	Nonparametric	0.017	Chebyshev
Lead	154	154	1.63	232	19.5	32.0	Nonparametric	30.7	Chebyshev
Thallium	167	132	0.0911	0.87	0.13	0.12	Normal	0.14	Student's t
Carcinogens									
Arsenic	167	159	0.27	13.2	1.72	1.46	Gamma	1.90	Approximate gamma
Benzo(a)pyrene	154	14	0.0269	0.276	0.080	0.078	Nonparametric	0.11	Chebyshev
Benzo(b)fluoranthene	154	16	0.0362	0.693	0.088	0.095	Nonparametric	0.12	Chebyshev
Radionuclides									
Cesium-137	54	29	0.0799	5.43	0.55	1.03	Nonparametric	1.16	Chebyshev
Plutonium-239	150	52	0.0206	5.03	0.11	0.44	Nonparametric	0.26	Chebyshev

Note: All units in mg/kg, except radionuclides which are in pCi/g.

Table 8.3.1-3
Calculation of Dioxin/Furan TEQ TCDD Concentration for SWMU 73-002

Congener	95% UCL (mg/kg)	TEF	Adjusted 95% UCL (mg/kg)
Heptachlorodibenzodioxin [1,2,3,4,6,7,8]	1.67×10^{-5}	0.01	1.67×10^{-7}
Heptachlorodibenzofuran [1,2,3,4,6,7,8]	3.49×10^{-6}	0.01	3.49×10^{-8}
Heptachlorodibenzofuran [1,2,3,4,7,8,9]	2.35×10^{-7}	0.01	2.35×10^{-9}
Hexachlorodibenzodioxin [1,2,3,4,7,8]	3.81×10^{-7}	0.1	3.81×10^{-8}
Hexachlorodibenzodioxin [1,2,3,6,7,8]	7.70×10^{-7}	0.1	7.70×10^{-8}
Hexachlorodibenzodioxin [1,2,3,7,8,9]	6.82×10^{-7}	0.1	6.82×10^{-8}
Hexachlorodibenzofuran [1,2,3,4,7,8]	5.02×10^{-7}	0.1	5.02×10^{-8}
Hexachlorodibenzofuran [1,2,3,6,7,8]	4.76×10^{-7}	0.1	4.76×10^{-8}
Hexachlorodibenzofuran [1,2,3,7,8,9]	1.47×10^{-7}	0.1	1.47×10^{-8}
Hexachlorodibenzofuran [2,3,4,6,7,8]	6.56×10^{-7}	0.1	6.56×10^{-8}
Octachlorodibenzodioxin [1,2,3,4,6,7,8,9]	9.19×10^{-5}	0.0003	2.76×10^{-8}
Octachlorodibenzofuran [1,2,3,4,6,7,8,9]	4.68×10^{-6}	0.0003	1.40×10^{-9}
Pentachlorodibenzodioxin [1,2,3,7,8]	3.20×10^{-7}	1.0	3.20×10^{-7}
Pentachlorodibenzofuran [1,2,3,7,8]	4.14×10^{-7}	0.03	1.24×10^{-8}
Pentachlorodibenzofuran [2,3,4,7,8]	8.51×10^{-7}	0.3	2.55×10^{-7}
Tetrachlorodibenzodioxin [2,3,7,8]	1.48×10^{-7}	1.0	1.48×10^{-7}
Tetrachlorodibenzofuran [2,3,7,8]	8.65×10^{-7}	0.1	8.65×10^{-8}
TEQ TCDD Concentration			**1.42×10^{-6}**

Table 8.3.1-4
Comparison of 95% UCLs and Residential SSLs/SALs for SWMU 73-002

COPC	95% UCL	Residential SSLs/SALs	Ratio
Noncarcinogens (mg/kg)			
Aluminum	5700	77800	0.07
Antimony	0.56	31.3	0.02
Aroclor-1254	0.017	2.2	0.008
Lead	30.7	400	0.08
Thallium	0.14	5.16	0.03
		HI	**0.2**
Carcinogens (mg/kg)			
Arsenic	1.90	3.9	0.49
Benzo(a)pyrene	0.11	0.621	0.18
Benzi(b)fluoranthene	0.12	6.21	0.02
TCDD TEQ	1.42×10^{-6}	3.9×10^{-5}	0.04
		Total Excess Cancer Risk	**7×10^{-6}**
Radionuclides (pCi/g)			
Cesium-137	1.16	5.6	0.21
Plutonium-239	0.26	33	0.01
		Total Dose	**3.3 mrem/yr**

Table 8.3.2-1
Summary of Screening Level Comparisons for AOC 73-003

COPC	Number of Samples	Residential Screening Level	Number of Detects Greater Than 10% of Screening Level	Number of Detects Greater Than Screening Level	Maximum Detected Concentration	Ratio of Maximum Detected Concentration / Screening Level
Noncarcinogens						
Aluminum	28	77,800	16	0	30,400	0.39
Lead	28	400	2	0	130	0.32
Manganese	28	3590	6	0	1050	0.29
Carcinogens						
Arsenic	28	3.9	14	8	7.9	**2.03**

Note: All units in mg/kg.

Table 8.3.2-2
Determination of 95% UCLs for AOC 73-003

COPC	Number of Samples	Number of Detects	Minimum Detect	Maximum Detect	Overall Mean	Standard Deviation	Distribution	95% UCL	UCL Method
Noncarcinogens									
Aluminum	28	28	528	30400	9867	7957	Gamma	14000	Approximate gamma
Lead	28	28	2.09	130	17.4	27.1	Nonparametric	40	Chebyshev
Manganese	28	28	49.7	1050	299	230	Lognormal	380	Land's H
Carcinogens									
Arsenic	28	14	2.2	7.9	4.0	1.48	Normal	4.3	Student's t

Note: All units in mg/kg.

Table 8.3.2-3
Comparison of 95% UCLs and Residential SSLs for AOC 73-003

COPC	95% UCL (mg/kg)	Residential SSLs (mg/kg)	Ratio
Noncarcinogens			
Aluminum	14,000	77,800	0.18
Lead	40	400	0.10
Manganese	380	3590	0.11
		HI	**0.4**
Carcinogens			
Arsenic	4.3	3.9	1.1
		Total Excess Cancer Risk	**1×10^{-5}**

Table 8.3.3-1
Summary of Screening Level Comparisons for SWMU 73-004(a)

COPC	Number of Samples	Residential Screening Level	Number of Detects Greater Than 10% of Screening Level	Number of Detects Greater Than Screening Level	Maximum Detected Concentration	Maximum Detected Concentration / Screening Level
Antimony	13	31.3	2[a]	0	12[b]	0.38
Lead	13	400	2	0	363	0.91
Thallium	13	5.16	2[c]	0	1.5[b]	0.29

Note: All units in mg/kg.

[a] Antimony was not detected above 10% of SSL, but the detection limit of two samples was greater than 10% of SSL.

[b] Maximum detection limit.

[c] Thallium was not detected above 10% of SSL, but the detection limit of two samples was greater than 10% of SSL.

Table 8.3.3-2
Determination of 95% UCLs for SWMU 73-004(a)

COPC	Number of Samples	Number of Detects	Minimum Detect	Maximum Detect	Overall Mean	Standard Deviation	Distribution	95% UCL	UCL Method
Noncarcinogens									
Antimony	13	3	0.11	2.1	1.23	2.18	Nonparametric	3.9	Chebyshev
Lead	13	13	4.13	363	46.6	99	Nonparametric	170	Chebyshev
Thallium	13	7	0.097	0.36	0.24	0.21	Gamma	0.37	Approximate gamma

Note: All units in mg/kg.

Table 8.3.3-3
Comparison of 95% UCLs and Residential SSLs for SWMU 73-004(a)

COPC	95% UCL (mg/kg)	Residential SSLs (mg/kg)	HQ
Noncarcinogens			
Antimony	3.9	31.3	0.12
Lead	170	400	0.43
Thallium	0.37	5.16	0.07
		HI	**0.6**

Table 8.3.4-1
Summary of Screening Level Comparisons for SWMU 73-004(b)

COPC	Number of Samples	Residential Screening Level	Number of Detects Greater Than 10% of Screening Level	Number of Detects Greater Than Screening Level	Maximum Detected Concentration	Maximum Detected Concentration / Screening Level
Noncarcinogens						
Aluminum	50	77,800	23	0	44,600	0.57
Antimony	43	31.3	3[a]	0	14[b]	0.45
Aroclor-1254	52	1.12	2	1	4.55	**4.06**
Aroclor-1260	52	1.12	2	1	1.96	**1.75**
Cobalt	50	1520	1	0	247	0.16
Lead	50	400	1	0	190	0.48
Silver	50	391	1	0	44.3	0.11
Thallium	50	5.16	3[c]	0	1.7[b]	0.33
Vanadium	50	78.2	30	0	52	0.66
Carcinogens						
Aroclor-1254	52	2.2	1	0	4.55	**2.07**
Aroclor-1260	52	2.2	1	0	1.96	**0.89**
Arsenic	50	3.9	50	14	13	**3.33**
Benzo(a)pyrene	37	0.621	5	0	0.467	0.74
Benzo(b)fluoranthene	37	6.21	1	0	0.783	0.13
DDD[4,4'-]	39	24.4	1	0	4.7	0.19
DDT[4,4']	39	17.2	1	1	170	**9.88**

Note: All units in mg/kg.

[a] Antimony was not detected above 10% of SSL but detection limit of three samples was greater than 10% of SSL.

[b] Maximum detection limit.

[c] Thallium was not detected above 10% of SSL but detection limit of three samples was greater than 10% of SSL.

Table 8.3.4-2
Determination of 95% UCLs for SWMU 73-004(b)

Analyte	Number of Samples	Number of Detects	Minimum Detect	Maximum Detect	Overall Mean	Standard Deviation	Distribution	UCL	UCL Method
Noncarcinogens									
Aluminum	50	56	553	44600	10180	10010	Gamma	13030	Approximate gamma
Antimony	43	10	0.05	0.425	0.62	1.50	Nonparametric	1.62	Chebyshev
Aroclor-1254	52	11	0.00157	4.55	3.73	25.6	Nonparametric	19.2	Chebyshev
Aroclor-1260	52	5	0.0014	1.96	3.70	24.325.6	Nonparametric	19.2	Chebyshev
Cobalt	50	54	0.274	247	7.43	34.7	Nonparametric	28.8	Chebyshev
Lead	50	56	3.07	190	14.0	26.3	Nonparametric	30.2	Chebyshev
Silver	50	35	0.0425	44.3	1.18	6.25	Nonparametric	5.03	Chebyshev
Thallium	50	38	0.0868	0.462	0.20	0.13	Nonparametric	0.30	Chebyshev
Vanadium	50	56	1.09	52	14.2	11.5	Gamma	17.5	Approximate gamma
Carcinogens									
Aroclor-1254	52	11	0.00157	4.55	3.73	25.6	Nonparametric	19.2	Chebyshev
Aroclor-1260	52	5	0.0014	1.96	3.70	24.325.6	Nonparametric	19.2	Chebyshev
Arsenic	50	55	0.642	13	3.29	2.10	Gamma	3.77	Approximate gamma
Benzo(a)pyrene	37	6	0.0201	0.467	0.080	0.11	Nonparametric	0.16	Chebyshev
Benzo(b)fluoranthene	37	8	0.0146	0.783	0.10	0.16	Nonparametric	0.22	Chebyshev
DDD[4,4'-]	39	9	0.00057	4.7	0.64	3.04	Nonparametric	2.76	Chebyshev
DDT[4,4'-]	39	11	0.00133	170	4.38	27.2	Nonparametric	23.4	Chebyshev

Note: All units in mg/kg.

Table 8.3.4-3
Comparison of 95% UCLs and Residential SSLs for SWMU 73-004(b)

COPC	95% UCL	Residential SSLs	Ratio
Noncarcinogens (mg/kg)			
Aluminum	13030	77800	0.17
Antimony	1.62	31.3	0.05
Aroclor-1254	19.2	1.12	17.1
Aroclor-1260	19.2	1.12	17.1
Cobalt	28.8	1520	0.02
Lead	30.2	400	0.08
Silver	5.03	391	0.01
Thallium	0.30	5.16	0.06
Vanadium	17.5	78.2	0.22
		HI	**35**
Carcinogens (mg/kg)			
Aroclor-1254	19.2	2.2	8.7
Aroclor-1260	19.2	2.2	8.7
Arsenic	3.77	3.9	0.97
Benzo(a)pyrene	0.16	0.621	0.26
Benzo(b)fluoranthene	0.22	6.21	0.04
DDD[4,4'-]	2.43	24.4	0.10
DDT[4,4'-]	20.3	17.2	1.18
		Total Excess Cancer Risk	**2×10^{-4}**

Table 8.3.4-4
Revised Comparison of 95% UCLs and Residential SSLs for SWMU 73-004(b)

COPC	95% UCL	Residential SSLs	Ratio
Noncarcinogens (mg/kg)			
Aluminum	13030	77800	0.17
Antimony	1.62	31.3	0.05
Aroclor-1254	0.67	1.12	0.60
Aroclor-1260	0.46	1.12	0.41
Cobalt	28.8	1520	0.02
Lead	30.2	400	0.08
Silver	5.03	391	0.01
Thallium	0.30	5.16	0.06
Vanadium	17.5	78.2	0.22
		HI	**2**
Carcinogens (mg/kg)			
Aroclor-1254	0.67	2.2	0.30
Aroclor-1260	0.46	2.2	0.21
Arsenic	3.77	3.9	0.97
Benzo(a)pyrene	0.16	0.621	0.26
Benzo(b)fluoranthene	0.22	6.21	0.04
DDD[4,4'-]	0.73	24.4	0.03
DDT[4,4'-]	0.060	17.2	0.003
		Total Excess Cancer Risk	**2×10^{-5}**

Table 8.3.5-1
Summary of Screening Level Comparisons for SWMU 73-006

COPC	Number of Samples	Residential Screening Level	Number of Detects Greater Than 10% of Screening Level	Number of Detects Greater Than Screening Level	Maximum Detected Concentration	Maximum Detected Concentration / Screening Level
Noncarcinogens						
Aluminum	21	77800	11	0	37700	0.48
Antimony	16	31.3	3[a]	0	8.6[b]	0.27
Lead	22	400	6	0	173	0.43
Mercury	20	23	1	0	7.9	0.35
Selenium	21	391	1[c]	0	79.8[b]	0.20
Vanadium	21	78.2	13	0	40.7	0.52
Carcinogens						
Benzo(a)pyrene	15	0.621	3	0	0.113	0.18

Note: All units in mg/kg

[a] Antimony was not detected above 10% of SSL but detection limit of three samples was greater than 10% of SSL.

[b] Maximum detection limit.

[c] Selenium was not detected above 10% of SSL but detection limit of one sample was greater than 10% of SSL.

Table 8.3.5-2
Determination of 95% UCLs for SWMU 73-006

COPC	Number of Samples	Number of Detects	Minimum Detect	Maximum Detect	Overall Mean	Standard Deviation	Distribution	95% UCL	UCL Method
Noncarcinogens									
Aluminum	21	21	396	37700	9580	8590	Gamma	14000	Approximate gamma
Antimony	16	3	0.164	0.505	0.98	1.59	Nonparametric	2.7	Chebyshev
Lead	22	22	4.78	173	36.7	45.5	Lognormal	77	Chebyshev
Mercury	20	17	0.0033	7.9	0.57	1.76	Lognormal	1.2	Chebyshev
Selenium	21	8	0.11	20.4	3.81	9.52	Nonparametric	13	Chebyshev
Vanadium	21	21	1.6	40.7	12.4	9.92	Gamma	17	Approximate gamma
Carcinogens									
Benzo(a)pyrene	15	2	0.0744	0.113	0.11	0.075	Nonparametric	0.20	Chebyshev

Note: All units in mg/kg.

Table 8.3.5-3
Calculation of Dioxin/Furan TEQ TCDD Concentration for SWMU 73-006 Using 95% UCLs

Analyte	95% UCL (mg/kg)	TEF	Adjusted 95% UCL (mgkg)
Heptachlorodibenzodioxin [1,2,3,4,6,7,8]	1.0×10^{-4}	0.01	1.0×10^{-6}
Heptachlorodibenzofuran [1,2,3,4,6,7,8]	3.4×10^{-5}	0.01	3.4×10^{-7}
Heptachlorodibenzofuran [1,2,3,4,7,8,9]	1.0×10^{-6}	0.01	1.0×10^{-8}
Hexachlorodibenzodioxin [1,2,3,4,7,8]	$2.8\ 10^{-6}$	0.1	$2.8\ 10^{-7}$
Hexachlorodibenzodioxin [1,2,3,6,7,8]	7.4×10^{-6}	0.1	7.4×10^{-7}
Hexachlorodibenzodioxin [1,2,3,7,8,9]	5.6×10^{-6}	0.1	5.6×10^{-7}
Hexachlorodibenzofuran [1,2,3,4,7,8]	5.5×10^{-6}	0.1	5.5×10^{-7}
Hexachlorodibenzofuran [1,2,3,6,7,8]	5.6×10^{-6}	0.1	5.6×10^{-7}
Hexachlorodibenzofuran [1,2,3,7,8,9]	2.6×10^{-6}	0.1	2.6×10^{-7}
Hexachlorodibenzofuran [2,3,4,6,7,8]	7.0×10^{-6}	0.1	7.0×10^{-7}
Octachlorodibenzodioxin [1,2,3,4,6,7,8,9]	7.2×10^{-4}	0.0003	2.2×10^{-7}
Octachlorodibenzofuran [1,2,3,4,6,7,8,9]	2.0×10^{-4}	0.0003	6.0×10^{-8}
Pentachlorodibenzodioxin [1,2,3,7,8]	3.6×10^{-6}	1.0	3.6×10^{-6}
Pentachlorodibenzofuran [1,2,3,7,8]	3.3×10^{-6}	0.03	9.9×10^{-8}
Pentachlorodibenzofuran [2,3,4,7,8]	7.0×10^{-6}	0.3	2.1×10^{-6}
Tetrachlorodibenzodioxin [2,3,7,8]	2.5×10^{-5}	1.0	2.5×10^{-5}
Tetrachlorodibenzofuran [2,3,7,8]	2.1×10^{-5}	0.1	2.1×10^{-6}
TEQ TCDD Concentration			**3.8×10^{-5}**

Table 8.3.5-4
Comparison of 95% UCLs and Residential SSLs for SWMU 73-006

COPC	95% UCL (mg/kg)	Residential SSLs (mg/kg)	Ratio
Noncarcinogens			
Aluminum	14000	77800	0.18
Antimony	2.7	31.3	0.09
Lead	77	400	0.19
Mercury	1.2	23	0.05
Selenium	13	391	0.03
Vanadium	17	78.2	0.22
HI			**0.8**
Carcinogens			
Benzo(a)pyrene	0.19	0.621	0.31
TCDD TEQ	3×10^{-5}	3.9×10^{-5}	0.77
Total Excess Cancer Risk			**1×10^{-5}**

Appendix A

Acronyms, Glossary,
Metric Conversion Table, and Data Qualifier Definitions

A-1.0 ABBREVIATIONS AND ACRONYMS

ACM	asbestos-containing material
amsl	above mean sea level
AOC	area of concern
AUF	area use factor
BCG	bioconcentration guide
bgs	below ground surface
BMP	best management practice
BV	background value
CCV	continuing calibration verification
COPC	chemical of potential concern
COPEC	chemical of potential ecological concern
CST	Chemical Science and Technology Division
DDD	dichlorodiphenyldichloroethane
DDE	dichlorophenyltrichloroethylene
DDT	dichlorodiphenyltrichloroethane
DOE	Department of Energy (U.S.)
EP	Environmental Programs
EPA	Environmental Protection Agency (U.S.)
EPC	exposure point concentration
EQL	estimated quantitation limit
ER Project	Environmental Restoration Project
ESL	ecological screening level
FFCA	Federal Facility Compliance Agreement
FV	fallout value
HI	hazard index
HpCDD	heptachlorodibenzodioxin
HpCDF	heptachlorodibenzofuran
HQ	hazard quotient
HR	home range
HSA	hollow-stem auger
H-UCL	H-statistic
HWA	Hazardous Waste Act (New Mexico)
HxCDD	hexachlorodibenzodioxin

HxCDF	hexachlorodibenzofuran
ICP-MS	inductively coupled plasma-mass spectrometry
ICV	initial calibration verification
IDW	investigation-derived waste
IS	internal standard
LAL	lower acceptance limit
LANL	Los Alamos National Laboratory
LANS	Los Alamos National Security, LLC
LCS	laboratory control sample
LLW	low-level waste
LOAEL	lowest observed adverse effect level
MDL	method detection limit
MEC	munitions and explosives of concern
MS	matrix spike
na	not available
n/a	not applicable
NAD	North American Datum
NFA	no further action
NMED	New Mexico Environment Department
NMSA	New Mexico Statutes Annotated
NOAEL	no observed adverse effect level
NOD	notice of disapproval
OCDD	octachlorodibenzodioxin
OCDF	octoachlorodibenzofuran
OSHA	Occupational Health and Safety Administration
PAH	polyaromatic hydrocarbon
PAUF	population area use factor
PCB	polychlorinated biphenyl
PCDD	pentachlorodibenzodioxin
PCDF	pentachlorodibenzofuran
PCE	tetrachloroethene
%D	percent difference
PIP	photoionization detector
PPE	personnel protective equipment

QA	quality assurance
QC	quality control
QP	quality procedure
RCRA	Resource Conservation and Recovery Act
RCRA RFI	Resource Conservation and Recovery Act facility investigation
RPD	relative percent difference
RRF	relative response factor
SAL	screening action levels
SMO	Sample Management Office
SOP	standard operating procedure
SOW	statement of work
SSHASP	site-specific health and safety plan
SSL	soil screening level
SVOC	volatile organic compounds
SWMU	solid waste management unit
TA	technical area
TAL	target analyte list
T&E	threatened and endangered
TCDD	tetrachlorodibenzodioxin
TCDF	tetrachlorodibenzofuran
TEF	toxicity equivalency factor
TEQ	toxicity equivalent
TRV	toxicity reference value
UCL	upper confidence limit
UXO	unexploded ordnance
VCA	voluntary corrective action
VCP	vitrified clay pipe
VOC	volatile organic compound
XRF	x-ray fluorescence

A-2.0 GLOSSARY

abandonment—The plugging of a well or borehole in a manner that precludes the migration of surface runoff or groundwater along the length of the well or borehole.

absorption—The uptake of water, other fluids, or dissolved chemicals by a cell or organism (e.g., tree roots absorb dissolved nutrients in soil).

accelerated corrective action—A cleanup process used to implement presumptive remedies at small-scale and relatively simple sites where groundwater contamination is not a component of the accelerated cleanup, where the remedy is considered to be the final remedy for the site, and where the fieldwork will be accomplished within 180 days of the start of field activities. Accelerated corrective actions may be implemented before the approval of the accelerated corrective action work plan by the New Mexico Environment Department.

accelerated corrective measure—A cleanup process meeting the same criteria as an accelerated corrective action, except that an accelerated corrective measure cannot be implemented before New Mexico Environment Department approval of the accelerated corrective measure work plan.

accuracy—A measure of the closeness of measurements to the true value of the parameter being measured.

action level—(1) A numerical value that has been established by statistical analysis or has been set according to regulatory limits and is used as a criterion for action. Contamination found in a particular medium below an appropriate action level is not generally subject to remediation or further study. (2) A health- and environment-based concentration derived using chemical-specific toxicity information and standardized exposure assumptions. An action level can be developed on a facility-specific basis or can be taken from standardized lists.

administrative authority—For Los Alamos National Laboratory, one or more regulatory agencies, such as the New Mexico Environment Department, the U.S. Environmental Protection Agency, or the U.S. Department of Energy, as appropriate.

administrative controls—Nonphysical or nonengineered mechanisms for managing risks to human health and the environment.

administrative order on consent—A legal agreement signed by the U.S. Environmental Protection Agency and an individual, business, or other entity through which a violator agrees to pay for the correction of violations, take the required corrective or cleanup actions, or refrain from an activity. It describes the actions to be taken, may be subject to a comment period, applies to civil actions, and can be enforced in court.

administrative record—All documents that the administrative authority considered, or relied on, when selecting the response action at a site, culminating in the record of decision for remedial action or an action memorandum for removal actions.

adsorption—The surface retention of solid, liquid, or gas molecules, atoms, or ions by a solid.

adverse condition—An all-inclusive term used to reference failures, malfunctions, defective items, and nonconformances.

aggregate—At the Los Alamos National Laboratory, an area within a *watershed* containing solid waste management units (SWMUs) and/or areas of concern (AOCs), and the media affected or potentially affected by releases from those SWMUs and/or AOCs. Aggregates are designated to promote efficient and effective corrective action activities.

aliquot—A measured portion of a sample taken for analysis.

alkalinity—In water analysis, the presence of carbonates, bicarbonates, and/or hydroxides, and occasionally borates, chlorates, silicates, or phosphates.

alluvial—Pertaining to geologic deposits or features formed by running water.

alluvial fan—A fan-shaped piedmont accumulation of alluvium.

alluvium—Soil deposited by a river or other running water.

alpha radiation—A form of particle radiation that is highly ionizing and has low penetration. Alpha radiation consists of two protons and two neutrons bound together into a particle that is identical to a helium nucleus and can be written as He^{2+}.

analysis—A critical evaluation, usually made by breaking a subject (either material or intellectual) down into its constituent parts, then describing the parts and their relationship to the whole. Analyses may include physical analysis, chemical analysis, toxicological analysis, and knowledge-of-process determinations.

analyte—The element, nuclide, or ion a chemical analysis seeks to identify and/or quantify; the chemical constituent of interest.

analytical method—A procedure or technique for systematically performing an activity.

andesite—Fine-grained intermediate volcanic rock, made up chiefly of plagioclase and pyroxene.

annular seal—The material (usually cement grout or bentonite) placed in the space between a borehole wall and a well casing for zone isolation. Annular seals are most often used to prevent surface contamination from entering a borehole.

annular space (annulus)—The space between a borehole wall and a well casing, or the space between a casing pipe and a liner pipe.

anthropogenic—Of, relating to, or resulting from, the influence of human beings.

Appendix F, performance measures—The measures that define Los Alamos National Laboratory's contractual requirements as established with the U.S. Department of Energy and the University of California (specifically in Section B, Performance Objectives, Criteria, and Measures for Operations and Administration, Parts II-1 and II-2).

applicable or relevant and appropriate requirements (ARARs)—(1) Those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental, state environmental, or facility siting laws that specifically address a hazardous substance, pollutant, contamination, remedial action, location, or other circumstance found at a site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be applicable (see National Contingency Plan, section 300.5). (2) Requirements promulgated under federal or state law that specifically address the circumstances at a site. (3) Requirements and environmental laws that may be either "applicable" or "relevant and appropriate," but not both. The identification of ARARs must take place on a site-specific basis.

Approved Supplier List—A roster of suppliers who are approved and qualified to provide items or services to the Environmental Remediation and Surveillance Program.

aquifer—An underground geological formation (or group of formations) containing water that is the source of groundwater for wells and springs.

aquitard—Geological formation that may contain groundwater but is not capable of transmitting significant quantities of it under normal hydraulic gradients.

area of concern—(1) A release that may warrant investigation or remediation and is not a solid waste management unit (SWMU). (2) An area at Los Alamos National Laboratory that may have had a release of a hazardous waste or a hazardous constituent but is not a SWMU.

area of contamination—As defined by the U.S. Environmental Protection Agency, certain areas of generally dispersed contamination that could be equated to a Resource Conservation and Recovery Act (RCRA) landfill. The movement of hazardous wastes within those areas would not be considered land disposal and would not trigger RCRA land-disposal restrictions. An area of contamination may be designated by the Environmental Remediation and Surveillance Program as part of a corrective action for waste management purposes, subject to approval by the administrative authority.

area use factor—The ratio of an organism's home range, breeding range, or feeding/foraging range to the area of the site under investigation.

artificial fill—A material that has been imported and typically consists of disturbed *soils* mixed with crushed Bandelier Tuff or other rock types.

ash-flow tuff—A tuff deposited by a hot, dense volcanic current. Ash-flow tuff can be either welded tuff or nonwelded tuff.

as low as reasonably achievable (ALARA)—(1) An approach to radiation protection for controlling or managing exposure (both individual and collective) to the work force and the general public. (2) An approach for controlling or managing releases of radioactive material to the environment at levels as low as social, technical, economic, practical, and public-policy considerations permit. ALARA is not a dose limit.

assessment—(1) The act of reviewing, inspecting, testing, checking, conducting surveillance, auditing, or otherwise determining and documenting whether items, processes, or services meet specified requirements. (2) An evaluation process used to measure the performance or effectiveness of a system and its elements. In this glossary, assessment is an all-inclusive term used to denote any one of the following: audit, performance evaluation, management system review, peer review, inspection, or surveillance.

assessment endpoint—In an ecological risk assessment, the expression of an environmental value to be protected (e.g., fish biomass or reproduction of avian populations).

audit (quality)—An independent, systematic examination to determine whether quality activities and related results comply with planned arrangements, whether these arrangements are implemented effectively, and whether they are suitable for achieving objectives.

background concentration—Naturally occurring concentrations of an inorganic chemical or radionuclide in soil, sediment, or tuff.

background data—Data that represent naturally occurring concentrations of inorganic and radionuclide constituents in a geologic medium. Los Alamos National Laboratory's (the Laboratory's) background data are derived from samples collected at locations that are either within, or adjacent to, the Laboratory. These locations (1) are representative of geological media found within Laboratory boundaries, and (2) have not been affected by Laboratory operations.

background level—(1) The concentration of a substance in an environmental medium (air, water, or soil) that occurs naturally or is not the result of human activities. (2) In exposure assessment, the concentration of a substance in a defined control area over a fixed period of time before, during, or after a data-gathering operation.

background radiation—The amount of radioactivity naturally present in the environment, including cosmic rays from space and natural radiation from soils and rock.

background sample—A sample collected from an area or site that is similar to the one being studied but known, or thought, to be free from constituents of concern.

background value (BV)—A statistically derived concentration (i.e., the upper tolerance limit [UTL]) of a chemical used to represent the background data set. If a UTL cannot be derived, either the detection limit or maximum reported value in the background data set is used.

barrier—Any material or structure that prevents, or substantially delays, the movement of solid-, liquid-, or gaseous-phase chemicals in environmental media.

basalt—A fine-grained, dark volcanic rock composed chiefly of plagioclase, augite, olivine, and magnetite.

baseline contaminant level—Anthropogenic soil concentrations of a given chemical associated with Los Alamos National Laboratory and/or with commercial activities or processes that may not be related to source material(s) or release(s) from within a solid waste management unit or area of concern.

baseline data—Data that result from samples not directly associated with, or attributed to, a site. Baseline data must be identified during planning as originating from baseline samples. They are not equivalent to Los Alamos National Laboratory background data, usually are specific to an industrial area (such as a technical area), and are not applicable to another site without approval by the administrative authority.

baseline risk assessment—A site-specific analysis of the potential adverse effects of hazardous constituents that have been released from a site in the absence of any controls or mitigating actions. A baseline risk assessment consists of the following four steps: data collection and analysis, exposure assessment, toxicity assessment, and risk characterization.

bench-scale tests—Small-scale tests of materials, methods, chemical processes, or biological processes, such as on a laboratory work table.

bentonite—An absorbent aluminum silicate clay formed from volcanic ash and used in various adhesives, cements, and ceramic fillers. Because bentonite can absorb large quantities of water and expand to several times its normal volume, it is a common drilling mud additive.

best management practices—Methods that have been determined to be the most effective, practical means of preventing or reducing pollution from nonpoint sources.

beta radiation—High-energy electrons emitted by certain types of radioactive nuclei, such as potassium-40. The beta particles emitted are a form of ionizing radiation also known as beta rays.

bias—The systematic deviation from a true value that remains constant over replicated measurements within the statistical precision of the measurement process.

biomass—The dry weight of living matter (including stored food) that is present in a species population. Biomass is expressed in terms of a habitat's given area or volume.

bioremediation—(1) The use of living organisms to clean up oil spills or to remove other pollutants from soil, water, or wastewater. (2) The use of organisms, such as harmless insects, to remove agricultural pests or to counteract diseases of trees, plants, and garden soil.

blank—A sample that is expected to have a negligible or unmeasurable amount of an analyte. Results of blank sample analyses indicate whether field samples might have been contaminated during the sample collection, transport, storage, preparation, or analysis processes.

blind sample—See single blind sample and double blind sample.

borehole—(1) A hole drilled or bored into the ground, usually for exploratory or economic purposes. (2) A hole into which casing, screen, and other materials may be installed to construct a well.

borehole logging—The process of making remote measurements of physical, chemical, or other parameters at multiple depths in a borehole.

breccia—A coarse-grained rock that consists of angular fragments cemented together or embedded in a fine-grained matrix.

brownfields—Abandoned, idle, or underused industrial and commercial facilities or sites where expansion or redevelopment is complicated by real or perceived environmental contamination. Brownfields can be in urban, suburban, or rural areas. The U.S. Environmental Protection Agency brownfields initiative helps communities mitigate potential health risks and restore the economic viability of such areas or properties.

calcrete—See pedogenic calcite or caliche.

caldera—A large crater formed by a volcanic explosion or by the collapse of a volcanic cone.

calibration—A process used to identify the relationship between the true analyte concentration or other variable and the response of a measurement instrument, chemical analysis method, or other measurement system.

calibration blank—A calibration standard prepared to contain negligible or unmeasurable amounts of analytes. A calibration blank is used to establish the zero concentration point for analytical measurement calibrations.

calibration standard—A sample prepared to contain known amounts of analytes of interest and other constituents required for an analysis.

caliche (properly called pedogenic calcite, also known as calcrete)—A layer of hard subsoil encrusted with calcium carbonate that occurs in arid or semiarid regions or precipitates out of groundwater (groundwater caliche). Typically found in near-surface soil.

canopy—The cover formed by the leafy upper branches of surrounding trees and shrubs.

canyon—A stream-cut chasm or gorge, the sides of which are composed of cliffs or a series of cliffs rising from the chasm's bed. Canyons are characteristic of arid or semiarid regions where downcutting by streams greatly exceeds weathering.

cap—A modern engineered landfill cover that is designed and constructed to minimize or eliminate the release of constituents into the environment.

casing—A solid piece of pipe, typically steel, stainless steel, or polyvinyl chloride plastic, used to keep a well open in either unconsolidated material or unstable rock and as a means to contain zone-isolation materials, such as cement grout.

catchment—(1) A structure, such as a basin or reservoir, used for collecting or draining water. (2) The amount of water collected in such a structure. (3) A catching or collecting of water, especially rainwater.

certificate of completion—A document to be issued by the New Mexico Environment Department (NMED) under the March 1, 2005, Compliance Order on Consent (Consent Order) once NMED determines that the requirements of the Consent Order have been satisfied for a particular solid waste management unit or area of concern.

certification—A signed statement required by permits, or certain enforcement documents (e.g., a compliance order), that is submitted with reports and other information requested by the

administrative authority. Certification ensures that a document and all of its attachments were prepared under the direction or supervision of an authorized person in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Known violations of certification carry significant penalties.

chain of custody—An unbroken, documented trail of accountability that is designed to ensure the uncompromised physical integrity of samples, data, and records.

chemical—Any naturally occurring or human-made substance characterized by a definite molecular composition.

chemical analysis—A process used to measure one or more attributes of a sample in a clearly defined, controlled, and systematic manner. Chemical analysis often requires treating a sample chemically or physically before measurement.

chemical interference—A chemical or physical entity whose influence results in a decrease or increase in the response of an analytical method or other measurement system relative to the response obtained in the absence of the entity.

chemical of concern—A chemical identified in human-health or ecological risk assessments as posing a risk.

chemical of potential concern (COPC)—A detected chemical compound or element that has the potential to adversely affect human receptors as a result of its concentration, distribution, and toxicity.

chemical of potential ecological concern—A detected chemical compound or element that has the potential to adversely affect ecological receptors as a result of its concentration, distribution, and toxicity.

cleanup—A series of actions taken to deal with the release, or threat of a release, of a hazardous substance that could affect humans and/or the environment. The term cleanup is sometimes used interchangeably with the terms remedial action, removal action, or corrective action.

cleanup levels—Media-specific contaminant concentration levels that must be met by a selected corrective action. Cleanup levels are established by using criteria such as the protection of human health and the environment; compliance with regulatory requirements; reduction of toxicity, mobility, or volume through treatment; long- and short-term effectiveness; implementability; and cost.

Code of Federal Regulations (CFR)—A document that codifies all rules of the executive departments and agencies of the federal government. The code is divided into 50 volumes, known as titles. Title 40 of the CFR (referenced as 40 CFR) covers environmental regulations.

cold vapor atomic absorption—An analytical technique used for measuring mercury that is described in U.S. Environmental Protection Agency Methods 7470A (“Mercury in Liquid Waste”) and 7471A (“Mercury in Solid or Semisolid Waste”). The technique is based on the absorption of nonionizing radiation at 253.7 nanometers (nm) by mercury vapor. The mercury is reduced to the elemental state and aerated from solution in a closed system. The mercury vapor passes through a cell positioned in the light path of an atomic absorption spectrophotometer. Absorbance (peak height) is measured as a function of mercury concentration.

collocated sample—One of two or more samples collected within close proximity of each other and meant to represent the same immediate area.

colluvium—A loose deposit of rock debris accumulated through the action of gravity at the base of a cliff or slope.

combined percent breakdown (% breakdown)—The sum of the breakdown percentage of 4,4'-DDT (dichlorodiphenyltrichloroethane) and Endrin. The breakdown of 4,4'-DDT is calculated through the amount of DDD (2,2-bis[para-chlorophenyl]-1,1-dichloroethane) and DDE (dichlorodiphenylethylene) detected in a performance evaluation mixture (PEM). The breakdown of Endrin is calculated through the amount of Endrin aldehyde and Endrin ketone in the PEM. The sum of these percentage breakdown values is the combined percent breakdown.

comment period—The time provided for the public to review and comment on a regulation action or rule-making after it has been published.

communication tracker (CT) number—A unique number assigned by the Environmental Remediation and Surveillance Program office to all incoming correspondence that needs a response (e.g., a notice of disapproval or request for supplemental information).

community—In ecology, an assemblage of populations of different species within a specified location in space and time. Sometimes, a particular subgrouping may be specified, such as the fish community in a lake or the soil arthropod community in a forest.

comparability—A qualitative measure of the degree to which one item or data set can be compared with another.

Compliance Order on Consent (Consent Order)—For the Environmental Remediation and Surveillance Program, an enforcement document signed by the New Mexico Environment Department, the U.S. Department of Energy, and the Regents of the University of California on March 1, 2005, which prescribes the requirements for corrective action at Los Alamos National Laboratory. The purposes of the Consent Order are (1) to define the nature and extent of releases of contaminants at, or from, the facility; (2) to identify and evaluate, where needed, alternatives for corrective measures to clean up contaminants in the environment and prevent or mitigate the migration of contaminants at, or from, the facility; and (3) to implement such corrective measures. The Consent Order supersedes the corrective action requirements previously specified in Module VIII of the Laboratory's Hazardous Waste Facility Permit.

composite sample—A sample collected over a temporal or spatial range that typically consists of a series of discrete equal samples that have been combined.

conceptual hydrogeologic model—An approximation of the occurrence, movement, and quality of groundwater in a given area and the relationship of that groundwater to the surface water, soil water, and geologic framework in that area.

conceptual model—See site conceptual model.

confined—Pertaining to groundwater in an artesian aquifer.

confluence—A place where two or more streams or canyons meet; the point where a tributary meets the main stream.

Consent Order—See Compliance Order on Consent.

consolidated unit—A group of solid waste management units (SWMUs), or SWMUs and areas of concern, which generally are geographically proximate and have been combined for the purposes of investigation, reporting, or remediation.

construction worker scenario—A land-use condition that evaluates exposures to a human receptor throughout a construction project. The activities typically involve substantial short-term on-site exposures.

contaminant—(1) Chemicals and radionuclides present in environmental media or on debris above background levels. (2) According to the March 1, 2005, Compliance Order on Consent (Consent Order), any hazardous waste listed or identified as characteristic in 40 Code of Federal Regulations (CFR) 261 (incorporated by 20.4.1.200 New Mexico Administrative Code [NMAC]); any hazardous constituent listed in 40 CFR 261 Appendix VIII (incorporated by 20.4.1.200 NMAC) or 40 CFR 264 Appendix IX (incorporated by 20.4.1.500 NMAC); any groundwater contaminant listed in the Water Quality Control Commission (WQCC) Regulations at 20.6.3.3103 NMAC; any toxic pollutant listed in the WQCC Regulations at 20.6.2.7 NMAC; explosive compounds; nitrate; and perchlorate. (Note: Under the Consent Order, the term "contaminant" does not include radionuclides or the radioactive portion of mixed waste.)

continuing calibration—A combination of calibration blank and check standards used to determine if an instrument's response to an analyte concentration is within acceptable bounds relative to its initial calibration. A continuing calibration is performed every 12 h of operation or every 10 injections, depending on the analytical test method, thus verifying the satisfactory performance of an instrument on a day-to-day basis. The continuing-calibration 12-h period assumes that the instrument has not been shut down since the initial calibration.

contract analytical laboratory—An analytical laboratory under contract to the University of California to analyze samples from work performed at Los Alamos National Laboratory.

contractor-specific logging procedures (CSLPs)—The documents supplied by a logging contractor and approved by a project leader for borehole geophysics before a contract is awarded. CSLPs define the detailed procedures by which a given logging system will be calibrated and operated to achieve the objectives for the data type and quality given in the borehole logging technical specifications.

contract-required detection limit (CRDL)—The minimum reporting limits required under a contract between Los Alamos National Laboratory and a contract laboratory. The CRDLs are not necessarily intrinsically tied to instrument sensitivity; rather they are reporting limits.

controlled area—An indoor or outdoor Los Alamos National Laboratory area to which access is controlled for security reasons or for the protection of individuals from exposure to radiation and/or hazardous materials.

corrective action—(1) In the Resource Conservation and Recovery Act, an action taken to rectify conditions potentially adverse to human health or the environment. (2) In the quality assurance field, the process of rectifying and preventing nonconformances.

corrective measure—An action taken at a solid waste management unit or area of concern to protect human health or the environment in the event of a release of contaminants into the environment, or to prevent a release of contaminants into the environment.

corrective measure evaluation—An evaluation of potential remedial alternatives undertaken to identify a preferred remedy that will be protective of human health and the environment and that will attain appropriate cleanup goals.

corrective measures implementation plan—A detailed plan and specifications to implement an approved remedy at a facility. The corrective measures implementation plan is the third step in the corrective action process and includes the design, construction, maintenance, and monitoring of the chosen remedy.

corrective measures study—A formal process for identifying and evaluating alternative remedies for releases at a facility.

cumulative risk—The evaluation of a simultaneous exposure of a receptor to multiple media, pathways, and contaminants in order to estimate the resulting health and environmental effects.

Curie—A unit of radioactivity defined as the quantity of any radioactive nuclide that has an activity of 3.7×10^{10} disintegrations per second (dps).

cutter head—An auger bit that is attached to the leading auger flight section and cuts a hole for the auger to follow. The bit may be either a coring head or a full-face bit.

daily calibration—The combination of a calibration blank and calibration standard used to determine if the instrument response to an analyte concentration is within acceptable bounds relative to the initial calibration. A daily calibration establishes the instrument response factors on which quantitations are based, thus verifying the satisfactory performance of an instrument on a day-to-day basis.

data package—The hard copy deliverable for each sample delivery group produced by a contract analytical laboratory in accordance with the statement of work for analytical services.

data-quality assessment—The statistical and/or scientific evaluation of a data set that establishes whether the data set is adequate for its intended use.

data-quality objectives—Qualitative and quantitative statements of the overall level of uncertainty that a decision maker will accept regarding results or decisions based on environmental data. The objectives provide the statistical framework for planning and managing environmental data operations that will meet user needs.

data validation—A systematic process that applies a defined set of performance-based criteria to a body of data and that may result in the qualification of the data. The data-validation process is performed independently of the analytical laboratory that generates the data set and occurs before conclusions are drawn from the data. The process may include a standardized data review (routine data validation) and/or a problem-specific data review (focused data validation).

data verification—The process of evaluating the completeness, correctness, consistency, and compliance of a laboratory data package against a specified standard or contract.

- Completeness: All required information is present—in both hard copy and electronic forms.
- Correctness: The reported results are based on properly documented and correctly applied algorithms.
- Consistency: The values are the same when they appear in different reports or are transcribed from one report to another.
- Compliance: The data pass numerical quality-control tests based on parameters or limits specified in a contract or in an auxiliary document.

decision-level concentration—The concentration at which a 5% probability exists of reporting a false positive for a sample that contains no analytes.

decision peer review—A technical (subject-matter-expert) review that occurs before document writing has begun. The focus of the decision peer review is on the appropriateness of the stated objectives for the identified problem, on the adequacy of the proposed approach to address the objectives, and on the identification of concerns and necessary contingencies. Any decision that is expected to lead to the writing of a peer-reviewed document is subject to a decision peer review and falls under Quality Procedure 3.5, Peer Review Process.

decommissioning—The permanent removal of facilities and their components from service after the discontinued use of structures or buildings that are deemed no longer useful. Decommissioning must take place in accordance with regulatory requirements and applicable environmental policies.

decontamination—The removal of unwanted material from the surface of, or from within, another material.

deferred action—The postponement of the selection and implementation of a corrective measure.

desk instruction—A document that describes the process for performing administrative activities (except those governed by the Environmental Remediation and Surveillance Program's Quality Management Plan).

detect (detection)—An analytical result, as reported by an analytical laboratory, that denotes a chemical or radionuclide to be present in a sample at a given concentration.

detection limit—The minimum concentration that can be determined by a single measurement of an instrument. A detection limit implies a specified statistical confidence that the analytical concentration is greater than zero.

detector background—The ambient signal response recorded by radioactivity-measuring instruments that is independent of radioactivity contributed by the radionuclides being measured in the sample.

dilution attenuation factor—The ratio of contaminant concentration in soil leachate to the concentration in groundwater at a receptor point. The factor is used to account for the dilution of soil leachate in an aquifer.

discharge—The accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of hazardous waste into, or on, any land or water.

disposal—The discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into, or on, any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including groundwaters.

dissolved oxygen—The amount of oxygen dissolved in water, in parts per million (ppm) by weight or in milligrams per liter (mg/L) by volume.

document catalog number—A unique document identifier designed to track every document generated by the Environmental Remediation and Surveillance Program. (This number is automatically assigned when an online document signature form is obtained.)

document control—The process of ensuring that documents are reviewed for adequacy, approved for release by authorized personnel, and distributed to, and used at, the location where the prescribed activity is to be performed.

document peer review—A technical, regulatory, and legal review of a final, professionally edited document. Before the peer review, the document should receive a Level 3 (full) edit as defined by Los Alamos National Laboratory's Communication Arts and Services (IM-1) Group. Because this review follows the decision peer review, the approach should already have been agreed upon. Thus, the primary focus of a document peer review is on content (and to a lesser extent on approach; the clarity of presentation; and a consistent, appropriate format). The document peer review may be either a panel review or a read review. Quality Procedure 4.9 (Document Development and Approval Process) lists the types of Environmental Remediation and Surveillance Program documents that require a formal peer review.

dose (dosage)—(1) The actual quantity of a chemical that is administered to an organism or to which it is exposed. (2) The amount of a substance that reaches a specific tissue (e.g., the liver). (3) The amount of a substance that is available for interaction with metabolic processes after it has crossed an organism's outer boundary.

dose equivalent—The product of the absorbed dose from ionizing radiation and factors that account for biological differences as a result of the radiation type and its distribution in the body.

double-blind sample—A performance-evaluation sample whose analyte concentrations and sample identity are unknown to the analyst (i.e., the analyst is not informed that the sample is a performance-evaluation sample).

drill bit—The cutting tool attached to the bottom of a drill stem.

drilling fluid—The fluid used to lubricate a bit and to convey drill cuttings to the surface with rotary drilling equipment. Usually composed of bentonite slurry or muddy water. The fluid can become contaminated, lead to cross-contamination, and may require special disposal.

drilling package—A document package that includes a detailed drilling plan, curation plan, sampling and analysis plan (SAP), and geophysical logging plan, as necessary, to meet the sampling requirements defined in the site-specific SAP for a given operable unit.

drilling string—The string of pipe (extending from the bit to the driving mechanism) that serves to carry mud down a borehole and to rotate a bit.

drill rod (drill pipe)—Special pipe used to transmit rotation and energy from the drill rig to the bit. This conduit conveys circulation fluids such as air, water, or other mixtures to cool the bit and evacuate the borehole cuttings.

duplicate analysis—An analysis performed on one member of a pair of identically prepared subsamples taken from the same sample.

duplicate measurement—An additional measurement performed on a prepared sample under identical conditions to evaluate any variance in measurement.

ecological screening levels—Soil, sediment, or water concentrations that are used to screen for potential ecological effects. The concentrations are based on a chemical's no-observed-adverse-effect level for a receptor, below which no risk is indicated.

effluent—Wastewater (treated or untreated) that flows out of a treatment plant, sewer, or industrial outfall. Generally refers to wastes discharged into surface waters.

end state—The physical state of a site after agreed-upon remediation activities have been completed.

environmental assessment—An environmental analysis that is prepared, pursuant to the National Environmental Policy Act, to determine whether a particular federal action would significantly affect the environment and thus require a more detailed environmental impact statement.

environmental impact statement (EIS)—A document required of federal agencies by the National Environmental Policy Act when those agencies are considering major projects or legislative proposals that could significantly affect the environment. Designed as a decision-making tool, an EIS describes the positive and negative effects of an undertaking and cites alternative actions.

Environmental Restoration (ER) Project—A Los Alamos National Laboratory project established in 1989 as part of a U.S. Department of Energy nationwide program, and precursor of today's Environmental Remediation and Surveillance (ERS) Program. This program is designed (1) to investigate hazardous and/or radioactive materials that may be present in the environment as a result of past Laboratory operations, (2) to determine if the materials currently pose an unacceptable risk to human health or the environment, and (3) to remediate (clean up, stabilize, or restore) those sites where unacceptable risk is still present.

environmental samples—Air, soil, water, or other media samples that have been collected from streams, wells, and soils, or other locations, and that are not expected to exhibit properties classified as hazardous by the U.S. Department of Transportation.

environmental surveillance—The collection and analysis of samples from air, water, soil, foodstuffs, biota, and other media to determine the environmental quality of an industry or community. Environmental surveillance is performed commonly at sites that contain nuclear facilities.

eolian—Pertaining to the geological products of wind action and especially said of sediment deposition by the wind (e.g., eolian sand and eolian dunes).

ephemeral—Pertaining to a stream or spring that flows only during, and immediately after, periods of rainfall or snowmelt.

equipment blank (rinsate blank)—A sample used to rinse sample-collection equipment and expected to have negligible or unmeasurable amounts of analytes. The equipment blank is collected after the equipment decontamination is completed but before the collection of another field sample.

ER data—Data derived from samples that have been collected and paid for through Environmental Remediation and Surveillance Program funding.

ER database (ERDB)—A database housing analytical and other programmatic information for the Environmental Remediation and Surveillance Program. The ERDB currently contains about 3 million analyses in 300 tables.

ER identification (ER ID) number—A unique identifier assigned by the Environmental Remediation and Surveillance Program's Records Processing Facility to each document when it is submitted as a final record.

error—The quantifiable difference between an observed value and the true value of a parameter being measured.

estimated detection limit—A reporting limit required by a Los Alamos National Laboratory statement of work for analytical services.

estimated quantitation limit (EQL)—The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine analytical-laboratory operating conditions. The low point on a calibration curve should reflect this quantitation limit. The EQL is not used to establish detection status. Sample EQLs are highly matrix dependent, and the specified EQLs might not always be achievable.

evapotranspiration—(1) The discharge of water from the earth's surface to the atmosphere by evaporation from lakes, streams, and soil surfaces and by transpiration from plants. (2) The loss of water from the soil by evaporation and/or by transpiration from the plants growing in the soil.

exposure pathway—Any path from the sources of contaminants to humans and other species or settings through air, soil, water, or food.

exposure unit—The bounded area or volume within which a person or other receptor could be exposed to contaminants that have been released into the environment.

external standard calibration—A comparison of instrument responses from a sample to the responses from target compounds in the calibration standards. The sample's peak areas (or peak heights) are compared to the standards' peak areas (or peak heights).

facility—All contiguous land (and structures, other appurtenances, and improvements on the land) used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment,

storage, or disposal operational units. For the purpose of implementing a corrective action, a facility is all the contiguous property that is under the control of the owner or operator seeking a permit under Subtitle C of the Resource Conservation and Recovery Act.

fallout radionuclides—Radionuclides that are present at globally elevated levels in the environment as a result of fallout from world-wide atomic weapons tests. The Los Alamos National Laboratory (the Laboratory) background data sets consist of environmental surveillance samples taken from marginal and regional locations for the following radionuclides associated with fallout: tritium, cesium-137, americium-241, plutonium-238, plutonium-239/240, and strontium-90. Samples were collected from regional and marginal locations in the Laboratory's vicinity that were (1) representative of geological media found within Laboratory boundaries, and (2) were not impacted by Laboratory operations.

fault—A fracture, or zone of fractures, in rock along which vertical or horizontal movement has taken place and adjacent rock layers or bodies have been displaced.

Federal Register—The official daily publication for Rules, Proposed Rules, and Notices from federal agencies and organizations, as well as Executive Orders and other presidential documents.

field blank (field reagent blank)—A blank sample prepared in the field or carried to the sampling site, exposed to sampling conditions (e.g., by removing bottle caps), and returned to a laboratory to be analyzed in the same manner in which environmental samples are being analyzed. Field blanks are used to identify the presence of any contamination that may have been added during the sampling and analysis process.

field duplicate (replicate) samples—Two separate, independent samples taken from the same source, which are collected as collocated samples (i.e., equally representative of a sample matrix at a given location and time).

field matrix spike—A known amount of a field sample to which a known amount of a target analyte has been added and used to compute the proportion of the added analyte that is recovered upon analysis.

field notebook—A record of activities performed in the field or a compilation of field data.

field reagent blank—See field blank.

field sample—See sample.

field split sample—A field sample that has been homogenized and divided, in the field, into equally representative portions that are submitted for analysis.

filter pack—Sand, gravel, or glass beads that are uniform, clean, and well rounded and are placed in the annulus of a well, between the borehole wall and the well intake, to stabilize the formation and to prevent foreign material from entering through the well intake.

flood plain—The flat, or nearly flat, land along a river or stream, or in a tidal area, that is covered by water during a flood.

fluid invasion—The migration of a drilling fluid, or one or more components of a drilling fluid, into the pores, fractures, or other openings in a formation near a borehole.

focused data validation—A technically based analyte-, sample-, and data-use-specific process that extends the qualification of data beyond the method or contractual compliance and provides a higher level of confidence that an analyte is present or absent. If an analyte is present, the quality of the quantitation may be obtained through focused validation.

formal training—Training that is conducted by a qualified individual in settings such as a classroom or the field.

gamma radiation—A form of electromagnetic, high-energy ionizing radiation emitted from a nucleus. Gamma rays are essentially the same as x-rays (though at higher energy) and require heavy shielding, such as concrete or steel, to be blocked.

geohydrology—The science that applies hydrologic methods to the understanding of geologic phenomena.

grab sample—A specimen collected by a single application of a field sampling procedure to a target population (e.g., the surface soil from a single hole collected after the spade-and-scoop sampling procedure, or a single air filter left in the field for three months).

graded approach—A management tool used to evaluate the importance and relative risk of an item, activity, or service in the working process.

gravimetric moisture content—See water content.

ground cover—Natural or human-made materials (e.g., grasses, pine needles, asphalt, or concrete) which overlay soils.

groundwater—Interstitial water that occurs in saturated earth material and is capable of entering a well in sufficient amounts to be used as a water supply.

grout—Cement or bentonite mixtures used for sealing boreholes and wells and for zone isolation. Only Portland Type I or II cement is approved for use at investigative sites.

gully erosion—The erosion process whereby water accumulates in narrow channels and, over short periods, removes soil from these narrow areas to considerable depths (1 ft to 50 ft).

half-life—(1) The time required for a pollutant to lose one-half of its original concentration (for example, the biochemical half-life of DDT [dichlorodiphenyltrichloroethane] in the environment is 15 yr). (2) The time required for one half of the atoms in a radioactive element to undergo self-transmutation or decay (the half-life of radium is 1620 yr). (3) The time required for the elimination of one half of a total dose from the body.

hazard index—The sum of hazard quotients for multiple contaminants to which a receptor may have been exposed.

Hazardous and Solid Waste Amendments (HSWA)—Public Law No. 98-616, 98 Stat. 3221, enacted in 1984, which amended the Resource Conservation and Recovery Act of 1976 (42 United States Code § 6901 et seq).

hazardous constituent (hazardous waste constituent)—According to the March 1, 2005, Compliance Order of Consent (Consent Order), any constituent identified in Appendix VIII of Part 261, Title 40 Code of Federal Regulations (CFR) (incorporated by 20.4.1.200 New Mexico Administrative Code [NMAC]) or any constituent identified in 40 CFR 264, Appendix IX (incorporated by 20.4.1.500 NMAC).

hazardous samples—Samples of on-site air particulates, soil, or water and materials collected at waste sites that are known, or thought, to meet the definition of a hazard class per 49 Code of Federal Regulations 171.8. The term “hazardous samples” does not refer to Resource Conservation and Recovery Act hazardous wastes unless so stated.

hazardous waste—(1) Solid waste that is listed as a hazardous waste, or exhibits any of the characteristics of hazardous waste (i.e., ignitability, corrosivity, reactivity, or toxicity, as provided in

40 CFR, Subpart C). (2) According to the March 1, 2005, Compliance Order of Consent (Consent Order), any solid waste or combination of solid wastes that, because of its quantity, concentration, or physical, chemical, or infectious characteristics, meets the description set forth in New Mexico Statutes Annotated 1978, § 74-4-3(K) and is listed as a hazardous waste or exhibits a hazardous waste characteristic under 40 CFR 261 (incorporated by 20.4.1.200 New Mexico Administrative Code).

Hazardous Waste Bureau—The New Mexico Environment Department bureau charged with providing regulatory oversight and technical guidance to New Mexico hazardous waste generators and to treatment, storage, and disposal facilities, as required by the New Mexico Hazardous Waste Act.

Hazardous Waste Facility Permit—The authorization issued to Los Alamos National Laboratory (the Laboratory) by the New Mexico Environment Department that allows the Laboratory to operate as a hazardous waste treatment, storage, and disposal facility.

hazard quotient (HQ)—The ratio of the estimated site-specific exposure concentration of a single chemical from a site to the estimated daily exposure level at which no adverse health effects are likely to occur.

high-explosive wastes—Any waste-containing material having an amount of stored chemical energy that could start a violent reaction when initiated by impact, spark, or heat. This violent reaction would be accompanied by a strong shock wave and the potential for high-velocity particles to be propelled.

holding time—The maximum elapsed time a sample can be stored without unacceptable changes in analyte concentrations. Holding times apply under prescribed conditions, and deviations from these conditions may affect the holding times. Extraction holding time refers to the time lapsed between sample collection and sample preparation. Analytical holding time refers to the time lapsed between sample preparation and analysis.

HSWA module—See Module VIII.

hydraulic conductivity—(1) A coefficient of proportionality that describes the rate at which a fluid can move through a permeable medium. The rate is a function of both the medium and the fluid flowing through it. (2) The quantity of water that will flow through a unit of cross-sectional area of a porous material per unit time under a hydraulic gradient of 1.00 (measured at right angles to the direction of flow) at a specified temperature.

hydraulic gradient—The rate of change in hydraulic head per unit of distance in the direction of groundwater flow.

hydraulic head—The elevation of the water table or potentiometric surface as measured in a well.

hydrogen-ion activity (pH)—The effective concentration (activity) of dissociated hydrogen ions (H+); a measure of the acidity or alkalinity of a solution that is numerically equal to 7 for neutral solutions, increases with alkalinity, and decreases as acidity increases.

"Hydrogeologic Workplan"—The document that describes the activities planned by Los Alamos National Laboratory (the Laboratory) to characterize the hydrologic setting beneath the Laboratory and to enhance the Laboratory's groundwater monitoring program.

hydrogeology—The science dealing with the occurrence of surface water and groundwater, their uses, and their functions in modifying the earth, primarily by erosion and deposition.

hypothesis—A tentative explanation that accounts for a set of data and that can be tested by further investigation.

imminent danger—Conditions or practices in the workplace that could reasonably be expected to cause immediate death or serious physical harm if they are not eliminated.

independent quality assessment—A planned and documented activity performed by individuals outside the Environmental Remediation and Surveillance (ERS) Program to determine—by investigation, examination, or evaluation of objective evidence—the extent to which the ERS quality program is being implemented.

inductively coupled plasma emission spectroscopy—A method that detects trace elements (including metals) in solutions by measuring characteristic emission spectra through optical spectrometry. Samples are nebulized, and the resulting aerosol is transported to a plasma torch. Element-specific emission spectra are produced by a radio-frequency, inductively coupled plasma. The spectra are dispersed by a grating spectrometer, and photosensitive devices are used to monitor the emission lines' intensities.

inductively coupled plasma mass spectrometry—A method that detects sub-microgram/liter concentrations of a large number of elements in water samples and in waste extracts or digests. When dissolved constituents are required, samples must be filtered and acid-preserved before analysis. No digestion is required before analysis for dissolved elements in water samples. The method measures ions produced by a radio-frequency, inductively coupled plasma. Analyte species originating in a liquid are nebulized, and the resulting aerosol is transported by argon gas into a plasma torch. The ions produced in the plasma gas are introduced into a mass spectrometer by means of an interface. The ions produced in the plasma are sorted according to their mass-to-change ratios and quantified with a channel electron multiplier or Faraday cup.

industrial scenario—A land-use condition in which current Los Alamos National Laboratory operations or industrial/commercial operations within Los Alamos County are continued or planned. Any necessary remediation involves cleanup to standards designed to ensure a safe and healthy work environment for workers.

infiltration—(1) The penetration of water through the ground surface into subsurface soil. (2) The technique of applying large volumes of wastewater to land to penetrate the surface and percolate through the underlying soil.

initial calibration—The process used to establish the relationship between instrument response and analyte concentration at several analyte concentration values in order to demonstrate that an instrument is capable of acceptable analytical performance.

injection well—A well into which fluids are injected for purposes such as waste disposal, improving the recovery of crude oil, or solution mining.

innovative technologies—New or inventive methods for effectively treating hazardous waste and reducing risk to human health and the environment.

inspection—The critical examination or measurement of an item or activity to determine its conformance to applicable quality standards or specifications.

institutional controls—Controls that prohibit or limit access to contaminated media. Institutional controls may include use restrictions, permitting requirements, standard operating procedures, laboratory implementation requirements, laboratory implementation guidance, and laboratory performance requirements.

instrument detection limit (IDL)—A measure of instrument sensitivity without any consideration for contributions to the signal from reagents. The IDL is calculated as follows: Three times the average of the standard deviations obtained on three nonconsecutive days from the analysis of a standard

solution, with seven consecutive measurements of that solution per day. The standard solution must be prepared at a concentration of three to five times the instrument manufacturer's estimated IDL.

instrument drift—A systematic change in a given logging system's output as a result of causes inherent in the logging system, such as changing tool temperature or the deterioration of an electronic component.

instrument performance check—The analysis of a chemical of known relative mass abundances to indicate how well a mass spectrometer is performing over a specified mass range.

interflow—A runoff process that involves lateral subsurface flow within the soil zone.

interim measure—An action that can be implemented to minimize or prevent the migration of contaminants and to minimize or prevent actual or potential human or ecological exposure to contaminants, while long-term final corrective action remedies are evaluated and, if necessary, implemented.

intermittent stream—A stream that flows only in certain reaches as a result of the channel bed's losing and gaining characteristics.

internal standards—Compounds added to a sample after the sample has been prepared for qualitative and quantitative instrument analysis. The compounds serve as a standard of retention time and response that is invariant from run to run.

interrupted stream—A stream whose flow is discontinuous as a result of human-made structures.

investigation-derived waste—Solid waste or hazardous waste that was generated as a result of corrective action investigation or remediation field activities. Investigation-derived waste may include drilling muds, cuttings, and purge water from the installation of test pits or wells; purge water, soil, and other materials from the collection of samples; residues from the testing of treatment technologies and pump-and-treat systems; contaminated personal protective equipment; and solutions (aqueous or otherwise) used to decontaminate nondisposable protective clothing and equipment.

laboratory control sample (LCS)—A known matrix that has been spiked with compound(s) representative of target analytes. LCSs are used to document laboratory performance, and the acceptance criteria for LCSs are method-specific.

laboratory qualifier (laboratory flag)—Codes applied to data by a contract analytical laboratory to indicate, on a gross scale, a verifiable or potential data deficiency. These flags are applied according to the U.S. Environmental Protection Agency contract-laboratory program guidelines.

land disposal—Placement in or on the land, except in a corrective-action management unit or staging pile; this includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, or land treatment facility.

land-disposal restrictions—Requirements in Title 40 Code of Federal Regulations, Section 268 that specify treatment standards that protect human health and the environment when hazardous waste is land disposed. All hazardous waste, except under certain limited circumstances, must meet a specific treatment standard before it can be land disposed.

LANL (Los Alamos National Laboratory) data validation qualifiers—The Los Alamos National Laboratory data qualifiers which are defined by, and used, in the Environmental Remediation and Surveillance (ERS) Program validation process. The qualifiers describe the general usability (or quality) of data. For a complete list of data qualifiers applicable to any particular analytical suite, consult the appropriate ERS standard operating procedure.

LANL (Los Alamos National Laboratory) data validation reason codes—The Los Alamos National Laboratory designations applied to sample data by data validators who are independent of the contract laboratory that performed a given sample analysis. Reason codes provide an analysis-specific explanation for applying a qualifier, with some description of the qualifier's potential impact on data use. For a complete list of data qualifiers applicable to any particular analytical suite, consult the appropriate Environmental Remediation and Surveillance Program standard operating procedure.

leachate—Water that collects contaminants as it trickles through wastes, pesticides, or fertilizers. Leaching may occur in farming areas, feedlots, and landfills, and may result in hazardous substances entering surface water, groundwater, or soil.

leaching—The process by which soluble constituents are dissolved and filtered through the soil by a percolating fluid.

log book—A notebook used to record tabulated data (e.g., the history of calibrations, sample tracking, numerical data, or other technical data).

logging run—A single data-collecting pass with a logging tool as the tool moves up or down in the borehole or a portion of the borehole. A logging operation generally consists of a main run and one or more repeat runs with each logging tool.

logging tool—A device that is run in a borehole to make borehole logging measurements.

logging tool stack—Two or more logging tools attached together and run as a single unit to save time and to improve the depth correlation between logs.

log header—One or more pages of information included with each hard copy of borehole logging data and with logging data recorded digitally on magnetic tapes or disks. The minimum information required in the log header is specified in the borehole logging technical specifications and includes such information as name and location of the hole, the logging services performed, and the date and time of the log's beginning and end.

long-term environmental stewardship—All the activities required to maintain an adequate level of protection for human health and the environment from risks posed by nuclear and/or chemical materials, waste, and contamination that remain after cleanup is complete.

Los Alamos unlimited release (LA-UR) number—A unique identification number required for all documents or presentations prepared for distribution outside Los Alamos National Laboratory (the Laboratory). LA-UR numbers are obtained by filling out a technical information release form (http://enterprise.lanl.gov/alpha.htm) and submitting the form together with 2 copies of the document to the Laboratory's Classification Group (S-7) for review.

lower acceptance limit (LAL)—The lowest limit that is acceptable according to quality control (QC) criteria for a specific QC sample and for a specific method. Any results lower than the LAL are qualified following the routine validation procedure.

material disposal area (MDA)—A subset of the solid waste management units at Los Alamos National Laboratory (the Laboratory) that include disposal units such as trenches, pits, and shafts. Historically, various disposal areas (but not all) were designated by the Laboratory as MDAs.

matrix—Relatively fine material in which coarser fragments or crystals are embedded; also called "ground mass" in the case of igneous rocks.

matrix spike—An aliquot of a sample to which a known concentration of target analyte has been added. Matrix spike samples are used to measure the ability to recover prescribed analytes from a native sample matrix. The spiking typically occurs before sample preparation and analysis.

matrix spike duplicate—An intralaboratory duplicate sample to which a known amount of target analyte has been added. Spiking typically occurs before sample preparation and analysis.

maximum contaminant level (MCL)—Under the Safe Drinking Water Act, the maximum permissible level of a contaminant in water that is delivered to any user of a public water system serving 15 or more connections and 25 or more people. MCLs are enforceable standards and take into account the feasibility and cost of attaining the standards.

measuring and test equipment—Devices or systems used to calibrate, measure, gauge, test, or inspect entities to control or acquire data and verify conformance to specified requirements.

medium (environmental)—Any material capable of absorbing or transporting constituents. Examples of media include tuffs, soils and sediments derived from these tuffs, surface water, soil water, groundwater, air, structural surfaces, and debris.

medium (geological)—The solid part of the hydrogeological system; may be unsaturated or saturated.

method blank—An analyte-free matrix to which all reagents are added in the same volumes or proportions as those used in the environmental sample processing, and which is prepared and analyzed in the same manner as the corresponding environmental samples. The method blank is used to assess the potential for sample contamination during preparation and analysis.

method detection limit (MDL)—The minimum concentration of a substance that can be measured and reported with a known statistical confidence that the analyte concentration is greater than zero. After subjecting samples to the usual preparation, the MDL is determined by analyzing those samples of a given matrix type that contain the analyte. The MDL is used to establish detection status.

migration—The movement of inorganic and organic chemical species through unsaturated or saturated materials.

migration pathway—A route (e.g., a stream or subsurface flow path) for the potential movement of contaminants to environmental receptors (plants, humans, or other animals).

minimum detectable activity (MDA)—For the analysis of radionuclides, the lowest detectable radioactivity for a given analytical technique. The following equation is used to calculate the MDA unless otherwise noted or approved by Los Alamos National Laboratory. (Note: "MDA" here should not to be confused with material disposal area):

$$\mathrm{MDA} = \frac{4.65\left(\mathrm{BKG}\right)^{0.5} + 2.71}{2.22 \times \mathrm{EFF} \times \mathrm{V} \times \mathrm{T_s} \times \mathrm{Y}} \quad ,$$

where BKG = the total background counts,
EFF = the fraction detector efficiency,
V = the volume or unit weight,
T_s = the sample count duration, and
Y = the fractional chemical recovery obtained from the tracer recovery.

Depending on the type of analysis, other terms may also be required in the denominator (e.g., gamma abundance).

mitigation—(1) Minimizing environmental impacts by limiting the degree or magnitude of an action and its implementation, (2) Rectifying an environmental impact by repairing, rehabilitating, or restoring the affected environment, (3) Reducing or eliminating an environmental impact over time by preservation and maintenance operations during the life of the action, (4) Compensating for an environmental impact by replacing or providing substitute resources or environments.

mixed waste—Waste containing both hazardous and source, special nuclear, or byproduct materials subject to the Atomic Energy Act of 1954.

model—A schematic description of a physical, biological, or social system, theory, or phenomenon that accounts for its known or inferred properties and may be used for the further study of its characteristics.

Module VIII—Module VIII of the Los Alamos National Laboratory (the Laboratory) Hazardous Waste Facility Permit. This permit allows the Laboratory to operate as a hazardous-waste treatment, storage, and disposal facility. From 1990 to 2005, Module VIII included requirements from the Hazardous and Solid Waste Amendments. These requirements have been superceded by the March 1, 2005, Compliance Order on Consent (Consent Order).

monitoring well—(1) A well used to obtain water-quality samples or to measure groundwater levels, (2) A well drilled at a hazardous waste management facility or Superfund site to collect groundwater samples for the purpose of physical, chemical, or biological analysis and to determine the amounts, types, and distribution of contaminants in the groundwater beneath the site.

mudcake—A layer of mud that may be deposited on a borehole wall when a drilling fluid contains mud. When the liquid component of the mud invades a formation, the solid component may be left on the borehole wall.

National Pollutant Discharge Elimination System—The national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits to discharge wastewater or storm water, and for imposing and enforcing pretreatment requirements under the Clean Water Act.

neutralize—To render a toxic chemical agent harmless by chemical action.

no further action—Under the Resource Conservation and Recovery Act, a corrective-action determination whereby, based on evidence or risk, no further investigation or remediation is warranted.

nonconformance—Any deficiency in a physical characteristic, documentation, or procedure that renders the quality of an item or service unacceptable or indeterminate.

nonconformance code—A code that identifies the type of nonconformance and the associated process, activity, or application.

nonconsumable calibration standards—Standards that are not used up over a period of time and may require calibration (e.g., weight sets, thermocouples, and thermometers).

nondetect—A result that is less than the method detection limit.

non-ER data—Data derived from samples collected by, and paid for by, sources other than the Environmental Remediation and Surveillance Program.

notice of deficiency—A written notification from the administrative authority to a facility owner/operator following the review of a permit application or other permit-related plan or report. A notice of deficiency requests additional information before a decision can be made regarding the original plan or report.

notices of approval, of approval with modification, or of disapproval—Notices issued by the New Mexico Environment Department (NMED). Upon receipt of a work plan, schedule, report, or other deliverable document, NMED reviews the document and approves the document as submitted, modifies the document and approves it as modified, or disapproves the document. A notice of approval means that the document is approved as submitted. A notice of approval with modifications means that the document is approved but with modifications specified by NMED. A notice of disapproval means that the document is disapproved and it states the deficiencies and other reasons for disapproval.

operable units (OUs)—At Los Alamos National Laboratory, 24 areas originally established for administering the Environmental Remediation and Surveillance Program. Set up as groups of potential release sites, the OUs were aggregated according to geographic proximity for the purposes of planning and conducting Resource Conservation and Recovery Act (RCRA) facility assessments and RCRA facility investigations. As the project matured, it became apparent that there were too many areas to allow efficient communication and to ensure consistency in approach. In 1994, the 24 OUs were reduced to 6 administrative field units.

other regulated material (ORM)—Material, such as a consumer commodity, that, although otherwise subject to the regulations of Subchapter C of 49 Code of Federal Regulations (CFR) 100, presents a limited hazard during the material's transportation as a result of its form, quantity, or packaging. An ORM must be a material for which exceptions are provided in 49 CFR 172.101.

outfall—A place where effluent is discharged into receiving waters.

out of control—A condition in which a measured quality control parameter does not meet specified control or acceptance criteria.

overpumping—Pumping a well down as low as possible and then allowing it to refill.

panel review—A type of decision peer review or document peer review that includes a face-to-face meeting between authors and reviewers for a discussion of issues.

pedogenic calcite (calcrete)—An accumulation of calcium carbonate formed by the soil-forming process; typically found in the near surface.

peer review—See decision peer review and document peer review.

percent recovery (%R)—The amount of material detected in a sample (less any amount already in the sample) divided by the amount added to the sample, expressed as a percentage.

perched water—A zone of unpressurized water held above the water table by impermeable rock or sediment.

percolation—Gravity flow of soil water through the pore spaces in soil or rock below the ground surface.

percussion gun—A device run on a wireline to obtain samples from a borehole wall. On a single run, multiple sample tubes or hollow shells are driven into the borehole wall at various depths by explosives and are retrieved along with the samples.

perennial stream—Water in a channel or bed that flows continuously throughout the year.

performance criteria—Measurable criteria used to assess all or part of a process.

performance evaluation—A type of audit in which quantitative data generated by a measurement system are obtained independently and then compared with routinely obtained data to evaluate the proficiency of an analyst or laboratory.

performance-evaluation sample—A sample of known composition with respect to selected analytes, which, upon analysis, is expected to yield results that fall within a prescribed range. Performance-evaluation samples are selected to mimic, as closely as possible, matrices that are representative of environmental samples from a particular location.

permit—An authorization, license, or equivalent control document issued by the U.S. Environmental Protection Agency or an approved state agency to implement the requirements of an environmental regulation.

permit modification—A change to a condition in a facility's permit, initiated by either a request from the permittee or by the administrative authority's action.

piedmont—An area of land formed or lying at the foot of a mountain or mountain range.

piezometer—A nonpumping well (generally of small diameter) for measuring the elevation of a water table.

piezometric surface (potentiometric surface)—The surface that represents the static head in an aquifer; applies to both confined and unconfined aquifers.

polychlorinated biphenyls (PCBs)—Any chemical substance limited to the biphenyl molecule that has been chlorinated to varying degrees, or any combination that contains such substances. PCBs are colorless, odorless compounds that are chemically, electrically, and thermally stable and have proven to be toxic to both humans and other animals.

population—(1) A group of interbreeding organisms occupying a particular space. (2) The number of humans or other living creatures in a designated area.

porosity—The degree to which soil, gravel, sediment, or rock is permeated with pores or cavities through which water or air can move.

porphyritic—Pertaining to the texture of an igneous rock in which larger crystals (phenocrysts) are set in a finer ground mass or matrix**.**

potential release site—A term for a potentially contaminated site at Los Alamos National Laboratory that refers to solid waste management units and areas of concern.

potentiometer—An instrument that measures an unknown potential difference by comparison to a standard potential difference.

potentiometric surface—See piezometric surface.

Precambrian—All geologic time before the beginning of the Cambrian period's Paleozoic Era which began about 600 million years ago.

precision—The degree of mutual agreement among a series of individual measurements, values, or results.

preliminary remediation goals—Acceptable exposure levels (protective of human health and the environment) that are used as a risk-based tool for evaluating remedial alternatives.

preliminary risk assessment—A risk assessment that is conducted using conservative assumptions and scenarios and that assumes no mitigating or corrective measures beyond those already in place.

prepared sample—A sample that has been treated to render it amenable to analysis. The sample preparation may include additives or treatments such as digestate, distillate, electroplate, extract, filter retentate, filtrate, homogenate, precipitate, pulverized/sieved portion of sample, or residue.

privileged record—A record to which access is controlled as a result of statutory, legal, or security requirements.

qualifications—The requisites (e.g., education, training, skills, or experience) that equip an individual for a professional position, such as assessor or lead assessor.

quality assessment—A system of activities whose purpose is to provide assurance that overall quality control is being executed effectively. Quality assessment involves a continuing evaluation of a production system's products and performance.

quality-assessment sample—A sample submitted for analysis, the data from which are used to assess the performance quality of a sampling or analysis process. May include performance-evaluation samples, field duplicates, or field blanks.

quality-assurance project plan—A formal document that describes, in comprehensive detail, the necessary quality assurance, quality control, and other technical activities that must be implemented to ensure that results of work performed will satisfy stated performance criteria.

quality assurance/quality control—A system of procedures, checks, audits, and corrective actions set up to ensure that all U.S. Environmental Protection Agency research design and performance, environmental monitoring and sampling, and other technical and reporting activities are of the highest achievable quality.

quality control—See quality assurance/quality control.

quality-control sample—A specimen that, upon analysis, is intended to provide information that is useful for adjusting, controlling, or verifying the continuing acceptability of sampling and/or analysis activities in progress.

quality indicators—Quantitative statistics and qualitative descriptors for interpreting the degree of acceptability or utility of data to the user. Indicators of quality include precision, bias, representativeness, reproducibility, comparability, and statistical confidence.

quality level 1—The highest level assigned to a document or activity. At this level, documents and activities must meet applicable requirements of a quality management plan and/or a quality assurance project plan.

quality level 2—A level that is assigned to those documents or activities that require good management, engineering, or laboratory practices, and that may follow the requirements in U.S. Department of Energy orders or the Los Alamos National Laboratory's Laboratory implementation requirements.

quality management—The portion of an organization's overall management system that determines and implements the quality policy. Quality management includes strategic planning, allocation of resources, and other systematic activities (e.g., planning implementation and assessment) pertaining to an organization's quality standards.

quality management plan (QMP)—A document providing a framework for planning, implementing, and assessing work performed by an organization and for carrying out required quality assurance/quality control. A QMP is part of an organization's structured and documented management system that describes the policies, objectives, principles, organizational authority, responsibilities, accountability, and implementation plan for ensuring quality in work processes, products, and services.

quality procedure—A document that describes the process, method, and responsibilities for performing, controlling, and documenting any quality-affecting activity governed by a quality management plan.

Quaternary—The second period of the Cenozoic Era, following the Tertiary, and including the last two to three million years of earth history.

radiation—A stream of particles or electromagnetic waves emitted by atoms and molecules of a radioactive substance as a result of nuclear decay. The particles or waves emitted can consist of neutrons, positrons, alpha particles, beta particles, or gamma radiation.

radioactive material—For purposes of complying with U.S. Department of Transportation regulations, any material having a specific activity (activity per unit mass of the material) greater than 2 nanocuries per gram (nCi/g) and in which the radioactivity is evenly distributed.

radioactive tracer—A radionuclide added to, or induced in, a sample for the purpose of monitoring chemical or physical losses of target analytes. The tracer is assumed to behave in the same manner as the target analytes.

radioactive waste—Waste that, by either monitoring and analysis, or acceptable knowledge, or both, has been determined to contain added (or concentrated and naturally occurring) radioactive material or activation products, or that does not meet radiological release criteria.

radioactivity (radioactive decay; radioactive disintegration)—The spontaneous change in an atom by the emission of charged particles and/or gamma rays.

radionuclide—Radioactive particle (human-made or natural) with a distinct atomic weight number.

RCRA facility assessment (RFA)—Usually the first step in the Resource Conservation and Recovery Act (RCRA) corrective action process. The RFA includes the identification of potential and actual releases from solid waste management units and preliminary determinations about releases and the need for corrective action and stabilization measures.

RCRA facility investigation (RFI)—A Resource Conservation and Recovery Act (RCRA) investigation that determines if a release has occurred and characterizes the nature and extent of contamination at a hazardous waste facility. The RFI is generally equivalent to the remedial investigation portion of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process.

reach—A specific length of a canyon that is treated as a single unit for sampling and analysis. Reaches tend to be internally uniform with respect to geomorphic setting and land use.

read review—A review of a written document performed by a reviewer individually (without meeting as a group).

readiness planning—The process of identifying, sequencing, and scheduling the preparatory activities for fieldwork to ensure compliance with the applicable Los Alamos National Laboratory, local, state, and federal procedural requirements, standards, and regulations, including those regarding human health and safety and the environment.

readiness review—A process to ensure compliance to identified requirements, to document consensus that fieldwork may proceed, and to ensure that the associated activities are closed or scheduled appropriately.

readiness review checklist—An itemized guide for readiness planning and readiness review (Quality Procedure 5.3); this checklist is not designed to be comprehensive for all fieldwork.

reamer—A type of drill bit that is used specifically for enlarging a borehole.

receptor—A person, other animal, plant, or geographical location that is exposed to a chemical or physical agent released to the environment by human activities**.**

recharge—The process by which water is added to a zone of saturation, usually by percolation from the soil surface (e.g., the recharge of an aquifer).

record—Any book, paper, map, photograph, machine-readable material, or other documentary material, regardless of physical form or characteristics.

recreational scenario—A land-use condition under which individuals may be exposed to contaminants for a limited amount of time as a result of outdoor activities such as hiking, camping, hunting, or fishing.

redox potential (Eh)—Chemical reactions whereby a participating element changes its valence state by losing or gaining orbital electrons. This may also be referred to as oxidation-reduction potential.

reference set—A hard-copy compilation of reference items cited in Environmental Remediation and Surveillance Program documents.

regional aquifer—Geologic material(s) or unit(s) of regional extent whose saturated portion yields significant quantities of water to wells, contains the regional zone of saturation, and is characterized by the regional water table or potentiometric surface.

regulatory standard—Media-specific contaminant concentration levels of potential concern that are mandated by federal or state legislation or regulation (e.g., the Safe Drinking Water Act, New Mexico Water Quality Control Commission regulations).

relative percent difference (RPD)—The measure used to assess the precision between parent results and their associated duplicate results. The RPD is calculated as follows:

$$\left|RPD\right| = \frac{S - R}{\left(\frac{S + R}{2}\right)100} \quad ,$$

where RPD = relative percent difference,
S = parent sample result, and
R = duplicate sample result.

The Environmental Remediation and Surveillance Program criteria for the RPD are less than 20% for aqueous samples and less than 35% for soil samples when the sample concentrations are greater than, or equal to, five times the method detection limit (MDL). For samples with concentrations less than five times the MDL, but greater than the MDL, the control is +/-MDL. No precision criterion applies to samples with concentrations less than the MDL.

release—Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of hazardous waste or hazardous constituents into the environment.

remediation—(1) The process of reducing the concentration of a contaminant (or contaminants) in air, water, or soil media to a level that poses an acceptable risk to human health and the environment. (2) The act of restoring a contaminated area to a usable condition based on specified standards.

remediation waste—All solid wastes and hazardous wastes, and all media (including groundwater, surface water, soils, and sediments) and debris, that are managed for implementing cleanup.

repeat run—A logging run that may cover only a portion of the depth range of the main logging run and is used to help judge data repeatability, to check on instrument drift, and to detect other data quality problems. The repeat run may be performed before or after the main run.

replicate measurement—A reanalysis (remeasurement) of a prepared sample.

reporting limit (RL)—The numerical value that an analytical laboratory (in conjunction with its client) selects for determining if a target analyte has been detected. Results below the RL are considered to

be undetected, but results above the RL are considered to be detected. The RLs are not necessarily based on instrument sensitivity. RLs can be established at the instrument detection limit, method detection limit, estimated quantitation limit, or contract-required detection limit.

representativeness—The degree to which data accurately and precisely represent a characteristic of a population or an environmental condition.

request for supplemental information—A request issued by the administrative authority (AA) that states that some aspect(s) of a plan or report does not meet the AA's requirements and that additional information is needed.

request number—An identifying number assigned by the Environmental Remediation and Surveillance Program to a group of samples submitted for analysis.

residential scenario—The land use condition under which individuals may be exposed to contaminants as a result of living on or near contaminated sites.

Resource Conservation and Recovery Act—The Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (Public Law [PL] 94-580, as amended by PL 95-609 and PL 96-482, United States Code 6901 et seq.).

restricted area—Any area to which access is controlled by a licensee to protect individuals from exposure to radiation and radioactive materials. The "restricted area" shall not include areas used as residential quarters, although a separate room or rooms in a residential building may be set apart as a restricted area.

retardation—An act or process that reduces the rate of movement of a chemical substance in water relative to the average velocity of the water. The movement of chemical substances in water can be retarded by adsorption and precipitation reactions, and by diffusion into pore water in a given sedimentary or rock matrix.

retention time window criteria—The x-axis on a chromatogram represents retention time. A retention time window is a specified time range on this axis. If a target analyte is detected within its retention time window, it is considered detected. The retention time window criteria are the exact time windows on the chromatogram defining a given target analyte and are method-specific.

rill erosion—An erosion process in which numerous small channels several inches deep are formed by concentrated runoff that flows during and immediately after rain storms or snowmelt.

rinsate blank—See equipment blank.

risk—A measure of the probability that damage to life, health, property, and/or the environment will occur as a result of a given hazard.

risk analysis—In the quality assurance field, a qualitative evaluation of the probability and the potential consequences associated with noncompliant documents or work activities.

risk assessment—See baseline risk assessment.

risk-based end state—The post-remediation vision for the planned future land use of a specific U.S. Department of Energy property.

risk characterization—The last phase in the risk assessment process which estimates the potential for adverse health or ecological effects to occur as a result of exposure to a stressor, and which evaluates the uncertainty involved.

risk management—The process of evaluating and selecting alternative regulatory and nonregulatory responses to risk. The selection process necessarily requires the consideration of legal, economic, and behavioral factors.

root cause—The most basic causal factor(s) that, if corrected or removed, would prevent a situation's recurrence.

root-cause analysis—A structured process for identifying the most basic causal factor(s) of a situation.

routine analysis—The analysis categories of inorganic compounds, organic compounds, metals, radiochemistry, and high explosives, as defined in a contract laboratory's statement of work.

routine data—Data generated using analytical methods that are identified as routine methods in the current Environmental Remediation and Surveillance Program statement of work for analytical services.

routine data validation—The process of reviewing analytical data relative to quantitative routine acceptance criteria. The objective of routine data validation is two-fold—

- to estimate the technical quality of the data relative to minimum national standards adopted by the Environmental Remediation and Surveillance Program, and
- to indicate to data users the technical data quality at a gross level by assigning laboratory qualifiers to environmental data whose quality indicators do not meet acceptance criteria.

runoff—The portion of the precipitation on a drainage area that is discharged from the area.

run-on—Surface water that flows onto an area as a result of runoff occurring higher up on a slope.

sample—A portion of a material (e.g., rock, soil, water, or air), which, alone or in combination with other portions, is expected to be representative of the material or area from which it is taken. Samples are typically either sent to a laboratory for analysis or inspection or are analyzed in the field. When referring to samples of environmental media, the term field sample may be used.

sample matrix—In chemical analysis, that portion of a sample that is exclusive of the analytes of interest. Together, the matrix and the analytes of interest form the sample.

screening action level (SAL)—A radionuclide's medium-specific concentration level; it is calculated by using conservative criteria below which it is generally assumed that no potential exists for a dose that is unacceptable to human health. The derivation of a SAL is based on conservative exposure and on land-use assumptions. However, if an applicable regulatory standard exists that is less than the value derived, it is used in place of the SAL.

screening risk assessment—A risk assessment that is performed with few data and many assumptions in order to identify exposures that should be evaluated more carefully for potential risk.

sediment—(1) A mass of fragmented inorganic solid that comes from the weathering of rock and is carried or dropped by air, water, gravity, or ice. (2) A mass that is accumulated by any other natural agent and that forms in layers on the earth's surface (e.g., sand, gravel, silt, mud, fill, or loess). (3) A solid material that is not in solution and is either distributed through the liquid or has settled out of the liquid.

self-study training—Training that is done on an individual basis, such as reading for comprehension, listening to an audiotape, or viewing a videotape.

sensitivity—An indication of the lowest analyte concentration that can be measured with a specified degree of confidence.

serial dilution sample—A requirement of the U.S. Environmental Protection Agency (EPA) Method 6010B (Inductively Coupled Plasma-Atomic Emission Spectroscopy). Serial dilutions are made by performing a series of dilutions on an aliquot taken from a stock solution for a target analyte. The first dilution of the original stock solution serves as the stock solution for the second dilution, and the second dilution serves as the stock solution for the third dilution, and so on. To meet the requirement of EPA Method 6010B, one serial dilution analysis must be performed for each matrix in every sample batch, with a minimum of 1 serial dilution sample per 20 samples.

Shelby tube sampler—A thin-wall tube sampler that is latched onto a lead auger while hollow-stem augering or pushed/driven ahead of the auger.

significant condition—A condition that, if uncorrected, could have a serious effect on quality, project personnel, or public safety, or which could have a major impact on project costs or schedules.

simple random sample—A sampling design in which every possible sample (sample unit) has an equal probability of being selected.

single blind sample—A performance-evaluation sample submitted for analysis whose sample identity is known to the analyst, but whose composition is known to the submitter and not to the analyst.

site characterization—Defining the pathways and methods of migration of hazardous waste or constituents, including the media affected; the extent, direction and speed of the contaminants; complicating factors influencing movement; or concentration profiles.

site closeout inspection—An on-site inspection conducted after the completion of fieldwork. The closeout inspection verifies that all fieldwork has been completed and that all compliance issues have been resolved.

site closeout packet—Documentation related to fieldwork that includes field logs, waste-management documentation, best management practice (BMP) inspection records, and sample-management records.

site conceptual model—A qualitative or quantitative description of sources of contamination, environmental transport pathways for contamination, and receptors that may be impacted by contamination and whose relationships describe qualitatively or quantitatively the release of contamination from the sources, the movement of contamination along the pathways to the exposure points, and the uptake of contaminants by the receptors.

site-specific health and safety plan (SSHASP)—A health and safety plan that has been tailored to a site or to an Environmental Remediation and Surveillance (ERS) Program field activity and that has been approved by an ERS health and safety representative. A SSHASP contains information specific to the project, including the scope of work, relevant history, descriptions of hazards from activity associated with the project site(s), and techniques for exposure mitigation (e.g., personal protective equipment and hazard mitigation).

slope—A ratio of units of elevation change to units of horizontal change, usually expressed in degrees.

soil—(1) A material that overlies bedrock and has been subject to soil-forming processes. (2) A sample media group that includes naturally occurring and artificial fill materials.

soil gas—Gaseous elements and compounds in the small spaces between particles of the earth and soil. Such gases can be moved or driven out under pressure.

soil hygrometer—An instrument that measures soil moisture.

soil moisture—The water contained in the pore space of the unsaturated zone.

soil screening level (SSL)—The concentration of a chemical (inorganic or organic) below which no potential for unacceptable risk to human health exists. The derivation of an SSL is based on conservative exposure and land-use assumptions, and on target levels of either a hazard quotient of 1.0 for a noncarcinogenic chemical or a cancer risk of 10^{-5} for a carcinogenic chemical.

soil water—Water in the unsaturated zone, regardless of whether it occurs in soil or rock.

solid waste—Any garbage, refuse, or sludge from a waste treatment plant, water-supply treatment plant, or air-pollution control facility, and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities. Solid waste does not include solid or dissolved materials in domestic sewage; solid or dissolved materials in irrigation return flows; industrial discharges that are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended; or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended.

solid waste management unit (SWMU)—(1) Any discernible site at which solid wastes have been placed at any time, whether or not the site use was intended to be the management of solid or hazardous waste. SWMUs include any site at a facility at which solid wastes have been routinely and systematically released. This definition includes regulated sites (i.e., landfills, surface impoundments, waste piles, and land treatment sites), but does not include passive leakage or one-time spills from production areas and sites in which wastes have not been managed (e.g., product storage areas). (2) According to the March 1, 2005, Compliance Order on Consent (Consent Order), any discernible site at which solid waste has been placed at any time, and from which the New Mexico Environment Department determines there may be a risk of a release of hazardous waste or hazardous waste constituents (hazardous constituents), whether or not the site use was intended to be the management of solid or hazardous waste. Such sites include any area in Los Alamos National Laboratory at which solid wastes have been routinely and systematically released; they do not include one-time spills.

specific (electrical) conductance—A measure of the ease with which a conduction current flows through a substance under the influence of an applied electric field. Specific conductance is dependant upon the presence of ions (total and relative concentrations, valence, and mobility) and temperature. It is the reciprocal of resistivity and is measured in either siemens (S) or micro-ohms per centimeter (µohm/cm) at 25°C.

specific yield—The ratio of the volume of water that a given mass of saturated rock or soil will yield by gravity to the volume of the mass expressed as a percentage (dimensionless).

split sample—A sample that has been divided into two or more portions that are expected to be of the same composition; used to characterize within-sample heterogeneity, sample handling, and measurement variability.

split-spoon sampler—A hollow, tubular sampling device below a drill stem that is driven by a weight to retrieve soil samples. The core barrel can be opened to remove samples. This is a sampling method commonly used with auger drilling. The split-spoon sampler can be driven into the ground or can be advanced inside hollow-stem augers.

spring—Groundwater seeping out of the earth where the water table intersects the ground surface.

stakeholder—Any organization, governmental entity, or individual that has a stake in, or may be impacted by, a given approach to environmental regulation, pollution prevention, or energy conservation.

standard operating procedure—A document that details the officially approved method(s) for an operation, analysis, or action, with thoroughly prescribed techniques and steps.

stop work—A moment in a project's lifespan when all activities that relate to specific functions are discontinued until an unacceptable condition is resolved.

storage coefficient—The volume of water an aquifer releases from, or takes into, storage per unit surface area of the aquifer per unit change in head (dimensionless).

stratification—The process of separating into layers.

stratified sample—A sample that includes one or more specimens from each of several subpopulations within a target population. (Note: If the specimens are selected from within each subpopulation using a simple random sample, the sample is called a stratified random sample.)

stratigraphy—The study of the formation, composition, and sequence of sediments, whether consolidated or not.

subsample—See aliquot.

Superfund—Another term for the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The two terms are used interchangeably.

surface sample—A sample taken at a collection depth that is (or was) representative of the medium's surface during the period of investigative interest. A typical depth interval for a surface sample is 0 to 6 in. for mesa-top locations, but may be up to several feet in sediment-deposition areas within canyons.

surging—A well development technique wherein a surge block is alternately lifted and dropped within a borehole, above or adjacent to the screen, to create a strong inward and outward movement of water through the well intake.

surrogate (surrogate compound)—An organic compound used in the analyses of organic target analytes that is similar in composition and behavior to the target analytes but is not normally found in field samples. Surrogates are added to every blank and spike sample to evaluate the efficiency with which analytes are being recovered during extraction and analysis.

tag—A warning device approved by the Environmental Remediation and Surveillance Program that states

DANGER – UNSAFE – DO NOT USE

and has a means of attachment. The tag is employed to prohibit the use of equipment or materials.

target analyte—A chemical or parameter, the concentration, mass, or magnitude of which is designed to be quantified by a particular test method.

technical area (TA)—At Los Alamos National Laboratory, an administrative unit of operational organization (e.g., TA-21).

technical notebook—A record of the methodology, observations, and results of technical activity investigations.

tentatively identified compound (TIC)—A chemical compound detected in a sample that is not a target analyte, internal standard, or surrogate. Up to 30 chromatographic peaks may be subject to mass spectral matching for identification as TICs.

topography—The physical or natural features of an object or entity and their structural relationships.

total propagated uncertainty (TPU)—The range of concentrations (expressed as ± the measured concentration) that includes the theoretical or true concentration of an analyte with a specific degree of confidence. Radiochemical results are required to be accompanied by sample-specific uncertainty bounds that reflect the 67% confidence level (1-sigma TPU). The TPU includes not only the measurement or counting error but the technique-specific error term that includes uncertainty values for each contributing measurement process and a sample-specific contribution reflecting the specific chemical recoveries or detectors used. All radiochemical result uncertainties incorporate terms for technique-related and sample-specific measurement errors.

toxic pollutant—A water contaminant or combination of water contaminants in concentration(s) that, upon exposure, ingestion, or assimilation, either directly from the environment or indirectly by ingestion through food chains, will unreasonably threaten to injure the health of humans, or the health of other animals or plants that are commonly hatched, bred, cultivated, or protected for use by humans for food or economic benefit.

tracer—A substance, usually a radioactive isotope, that is added to, or induced in, a sample for the purpose of monitoring chemical or physical losses of the target analytes. The tracer is assumed to behave in the same manner as the target analytes.

transmission loss—The reduction in surface water flow by seepage into a channel bed.

transmissivity—The ability of an aquifer to transmit water.

transport (transportation)—(1) The movement of a hazardous waste by air, rail, highway, or water. (2) The movement of a contaminant from a source through a medium to a receptor.

treatment—Any method, technique, or process, including elementary neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, recover energy or material resources from the waste, or to render such waste nonhazardous or less hazardous; safer to transport, store, or dispose of; or amenable for recovery or storage; or reduced in volume.

treatment, storage, and disposal facility—An interim-status or permitted facility in which hazardous waste is treated, stored, or disposed.

tremie pipe—A small-diameter pipe used to carry sand pack, bentonite, or grouting materials to a borehole's bottom. Materials are pumped under pressure or poured to the hole bottom through the pipe. The pipe is retracted as the annular space is filled.

trend analysis—An analytical or graphical representation used to identify the changes in a variable as it is measured over a period of time.

trip blank—A sample of analyte-free medium taken from a sampling site and returned to an analytical laboratory unopened, along with samples taken in the field; used to monitor cross contamination of samples during handling and storage both in the field and in the analytical laboratory.

tuff—Consolidated volcanic ash, composed largely of fragments produced by volcanic eruptions.

turbidity (nephelometric)—A measure of the intensity of light scattered by sample particulates relative to a standard reference suspension. The range of water turbidity is measured between 0 and 40 nephelometric turbidity units (NTU).

unconfined aquifer—An aquifer containing water that is not under pressure; the water level in a well is the same as the water table outside the well.

underflow—Groundwater flow beneath the bed of a nonflowing stream. Such water is often perched in the channel alluvium atop the bedrock surface.

underground storage tank—A tank located at least partially underground and designed to hold gasoline or other petroleum products or chemicals.

unique identifier—A word or code that aids in the ability to trace the history, application, or location of an activity, item, datum, or sample using recorded documentation. For Environmental Remediation and Surveillance Program records, a unique identifier is an alphanumeric identifier assigned to a primary record.

unrestricted area—Any area, whose access is not controlled by a licensee for purposes of protecting individuals from exposure to radiation and radioactive materials, and any area used for residential quarters.

unsaturated hydraulic conductivity—A coefficient that describes the rate at which a fluid can potentially move through a permeable, unsaturated medium.

unsaturated zone—The area above the water table where soil pores are not fully saturated, although some water may be present.

upper acceptance limit (UAL)—The highest limit that is acceptable, based on the quality control (QC) criteria for a specific QC sample for a specific method. Any results greater than the UAL are qualified.

upper confidence limit—The statistic that represents the upper bound of the arithmetic mean (usually 95%) of the measured data and that is used in a risk assessment as the reasonable maximum exposure point concentration.

upper tolerance limit—A statistical measure of the upper end of a distribution. The 95th percentile upper tolerance limit, which is the 95% upper percentile of the 95th percentile of the data distribution, is the background value used to represent the background data distribution for an inorganic chemical or naturally occurring radionuclide.

U.S. Department of Energy—The federal agency that sponsors energy research and regulates nuclear materials for weapons production.

U.S. Environmental Protection Agency (EPA)—The federal agency responsible for enforcing environmental laws. Although state regulatory agencies may be authorized to administer some of this responsibility, EPA retains oversight authority to ensure the protection of human health and the environment.

vadose zone—The zone between the land surface and the water table within which the moisture content is less than saturation (except in the capillary fringe) and pressure is less than atmospheric. Soil pore space also typically contains air or other gases. The capillary fringe is included in the vadose zone.

verification—A test or tests, generally performed before and after logging in lieu of a calibration, to ascertain whether the logging system is operating properly. Verification differs from calibration in that it does not provide updated system-calibration values.

water balance—The relationship between water input (precipitation) and water output (runoff, evapotranspiration, and recharge) in a hydrological system.

water content—The amount of water in an unsaturated medium, expressed as the ratio of the weight of water in a sample to the weight of the oven-dried sample (often expressed as a percentage).

watercourse—Any river, creek, arroyo, canyon, draw, wash, or other channel that has definite banks and beds and provides visual evidence of the occasional flow of water.

watershed—A region or basin drained by, or contributing waters to, a river, stream, lake, or other body of water and separated from adjacent drainage areas by a divide, such as a mesa, ridge, or other geologic feature.

water table—The top of the regional saturated zone; the piezometric surface associated with an unconfined aquifer.

welded tuff—A volcanic deposit hardened by the action of heat, pressures from overlying material, and hot gases.

well casing—A solid piece of pipe, typically steel or polyvinyl chloride (PVC) plastic, used to keep a well open in either unconsolidated materials or unstable rock and as a means to contain zone-isolation materials such as cement grout or bentonite.

well screen—A perforated wire-wrapped casing that allows fluids, but not solid material, to enter a well.

wireline—A logging cable used to support a logging tool and carry electrical power and signals between the tool and surface instruments.

work-performance assessment—An evaluation that determines if Environmental Remediation and Surveillance Program work is being performed in accordance with quality program requirements and identifies areas for improving the quality of work processes.

work plan—A document that specifies the activities to be performed when implementing an investigation or remedy. At a minimum, the work plan should identify the scope of the work to be performed, specify the procedures to be used to perform the work, and present a schedule for performing the work. The work plan may also present the technical basis for performing the work

A-3.0 METRIC CONVERSION TABLE

Multiply SI (Metric) Unit	by	To Obtain US 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-4.0 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

Data Review

B-1.0 INTRODUCTION

The appendix presents the evaluation of the data from samples collected at Consolidated Unit 73-002-99 from historical investigations and the investigation and corrective actions implemented in 2005, 2006, and 2007. This introductory section presents an overview of the analytical data and describes the process used to identify chemicals of potential concern (COPCs). Sections B-2 through B-6 present an evaluation of the data to identify COPCs for each of the four solid waste management units (SWMUs) and the area of concern (AOC) comprising Consolidated Unit 73-002-99. Section B-7 discusses the nature and extent of contamination at each SWMU and AOC. Section B-8 presents references cited in this appendix.

Data evaluated in this section include historical data collected from 1996 to 1999 as part of the Resource Conservation and Recovery Act (RCRA) facility investigation (RFI) and voluntary corrective action (VCA) activities, as well as data collected during 2006 and 2007 as part of the recent investigation and corrective actions. In the Environmental Program (EP) Directorate's (formerly the Environmental Restoration [ER] Project's) database, all data records include a vintage code field denoting how and where samples were submitted for analyses. In the early years of the ER Project, the samples were submitted to the Los Alamos National Laboratory (the Laboratory) Chemical Science and Technology (CST) Division. They were either analyzed at a CST laboratory (on-site) or shipped to one of several off-site contract laboratories. Samples analyzed at a CST laboratory are identified by the vintage code "CST Onsite." Samples shipped by CST Division to off-site laboratories are identified by the vintage code "CST Offsite." From late 1995 until the present, samples have been shipped through the Sample Management Office (SMO) to off-site contract laboratories. These samples are identified by the vintage code "SMO." All historical data evaluated in this report are SMO data.

In some cases, individual analytical results are qualified as "rejected" because of various data-quality issues. Rejected analytical results are not included in the data review, the evaluation of nature and extent, and the risk screening assessments. Data-quality issues, including rejected analytical results, are discussed in Appendix D.

Some of the historical sampling locations were excavated during the corrective actions performed in 2006 and 2007. Data from excavated sampling locations were not included in any of the evaluations.

B-1.1 Overview of Analytical Data

The data for Consolidated Unit 73-002-99 are from samples collected in 1996, 1997, 1999, 2006, and 2007 and include the results from soil, fill, sediment, and tuff samples (unit Qbt 3). The analytical data for Consolidated Unit 73-002-99 are evaluated by the four individual SWMUs and one AOC comprising the consolidated unit. Sampling locations are shown in Plate 1 and Figures 3.2.1-1, 3.3.1-1, 3.4.1-1, and 3.5.1-1 for SMWU 73-002, AOC 73-003, and SWMUs 73-004(a), 73-004(b), and 73-006, respectively. The samples collected during historical and recent investigations, including analytical suites and sample request numbers, are summarized in Tables 3-1.1-1, 3.2.1-1, 3.3.1-1, 3.4.1-1 and 3.5.1-1 for SMWU 73-002, AOC 73-003, and SWMUs 73-004(a), 73-004(b), and 73-006, respectively.

B-1.2 Identification of Chemicals of Potential Concern

The purpose of the data review is to identify COPCs for Consolidated Unit 73-002-99. Inorganic chemical and radionuclide data were compared with media-specific background data (LANL 1998, 059730). For background comparisons, the first step is to compare the site data with a background value (BV). A BV may be a calculated value for the background data set (the upper tolerance limit [95, 95] or the 95% upper confidence bound on the 95th quantile), a detection limit (DL), a fallout value (FV), or it may be

calculated based on secular equilibrium or a total analysis. An FV for fallout radionuclides applies only to surface samples; the fallout radionuclides evaluated in this appendix are americium-241, cesium-137, plutonium-238, plutonium-239, tritium, and strontium-90. Although a tritium FV for soil is available (LANL 1998, 059730), the FV is in pCi/mL and requires calculating the pCi/g fallout concentration using the sample percent moisture. The tritium soil FV was not used, and tritium was evaluated based on detection status in soil and fill, even in the 0- to 0.5-ft below ground surface (bgs) interval, which is a more conservative approach. All fallout radionuclides in tuff are evaluated based on detection status. Naturally occurring radionuclides evaluated in this appendix and compared to BVs are uranium-234, uranium-235, and uranium-238. If a BV or FV is not available, the inorganic chemicals and radionuclides were evaluated according to detection status.

If a site-specific datum exceeds its BV, additional evaluation of the data may be performed by comparing the range of concentrations in the site data set for that inorganic chemical or radionuclide with the range of concentrations in the background data set. If the site concentrations are within the range of background concentrations, the analyte is eliminated as a COPC.

In summary, the criteria used to identify inorganic and radionuclide COPCs are as follows:

- If at least one detected concentration or a DL for an analyte is above the BV the analyte is retained as a COPC unless all concentrations are within the range of background concentrations.
- If the analyte is detected in at least one sample and has no BV associated with it, the analyte is retained as a COPC.
- If all of the detected concentrations and DLs for an analyte are less than the BV, the analyte is not retained as a COPC.

Background comparisons do not apply to organic chemicals, which were evaluated according to their detection status. All detected organic chemicals are retained as COPCs.

COPCs are determined for each individual SWMU or AOC.

B-2.0 SWMU 73-002

B-2.1 Results of Inorganic Chemicals in Samples Collected from SWMU 73-002

Historical samples collected at SMWU 73-002 were analyzed for target analyte list (TAL) metals. Samples from the recent investigation were analyzed for TAL metals, cyanide, nitrate, and perchlorate.

Table B-2.1-1 presents the frequency of inorganic chemicals above BVs at SWMU 73-002. Table 7-3.1-2 presents inorganic chemicals detected above BV or having detection limits above BV at SWMU 73-002. The locations and concentrations of inorganic chemicals detected above BVs at SWMU 73-002 are shown in Plate 2 of the investigation report.

Iron, magnesium, potassium, sodium, and uranium were detected above their respective BVs, or had detection limits above BVs, but are not retained as COPCs because their concentrations are within the range of concentrations in the background data set (LANL 1998, 059730). Iron was detected above the Qbt 3 BV in two samples at 15,600 and 19,300 mg/kg, which are less than the maximum Qbt 3 background of 19,500 mg/kg. Magnesium was detected above the Qbt 3 BV in one sample at 1790 mg/kg, which is less than the maximum Qbt 3 background concentration of 2820 mg/kg. Potassium was detected above the soil BV in one sample at 3670 mg/kg, which is less than the maximum soil background concentration of 6850 mg/kg. Sodium was detected in one soil sample at 969 mg/kg, which is

less than the maximum soil background concentration of 1800 mg/kg. Uranium was detected above the soil BV in one sample at 3.22 mg/kg, which is less than the maximum soil background concentration of 3.6 mg/kg.

Calcium was detected above the soil BV (6120 mg/kg) in one sample at 6140 mg/kg and above the Qbt 3 BV (2200 mg/kg) in three samples at 2370, 2940, and 6070 mg/kg. The concentration in the soil sample is below the maximum soil background concentration (14,000 mg/kg), while the concentrations in the tuff samples are less than 3 times the maximum Qbt 3 background concentration. Calcium is not retained as a COPC because it is an essential nutrient (EPA 1989, 008021) and was detected infrequently and slightly above background.

Aluminum, arsenic, barium, cadmium, chromium, copper, cyanide, lead, mercury, nickel, selenium, silver, and zinc were reported with at least one detected concentration above the soil and/or Qbt 3 BV and above the range of background concentrations. These inorganic chemicals are retained as COPCs.

Nitrate and perchlorate were detected in at least one sample but have no BVs. These inorganic chemicals are retained as COPCs.

Antimony was not detected in any samples but had at least one detection limit above the soil BV, and the range of soil background concentrations and is retained as a COPC.

Detected concentrations of thallium were within the range of concentrations in the background data set, but at least one detection limit was above the maximum background concentration. Therefore, thallium is retained as a COPC.

B-2.2 Results of Radionuclides in Samples Collected from SWMU 73-002

Some historical samples collected at SMWU 73-002 were analyzed for gamma-emitting radionuclides by gamma spectroscopy, isotopic uranium, tritium, and strontium-90. Samples from the recent investigation were analyzed for americium-241, gamma-emitting radionuclides by gamma spectroscopy, isotopic plutonium, isotopic uranium, and strontium-90.

Table B-2.2-1 presents the frequency of radionuclides detected or detected above BVs/FVs at SWMU 73-002. Table 7.3.1-3 presents the radionuclides detected or detected above BV/FV at SWMU 73-002. The locations and concentrations of radionuclides detected above BVs at SWMU 73-002 are shown in Plate 3 of the investigation report.

Americium-241, cesium-137, plutonium-238, plutonium-239, strontium-90, tritium, uranium-234, uranium-235, and uranium-238 were reported with at least one detected concentration above the BV/FV for soil. Americium-241, plutonium-239, and strontium-90 were also detected in at least one Qbt 3 sample and uranium-234 and uranium-235 were detected above Qbt 3 BV in at least one tuff sample. These radionuclides are retained as COPCs.

B-2.3 Results of Organic Chemicals in Samples Collected from SWMU 73-002

Historical samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), pesticides, and dioxins and furans, though not all historical samples were analyzed for this entire suite. Samples from the recent investigation were analyzed for VOCs, SVOCs, PCBs, pesticides, dioxins and furans, and explosive compounds.

Table B-2.3-1 presents the frequency of organic chemicals detected at SMWU 73-002. Identification of organic COPCs is based on detection status. Table 7.3.1-4 presents the detected organic chemicals. The

locations and concentrations of detected organic chemicals at SWMU 73-002 are shown in Plate 4 of the investigation report.

Forty-seven organic chemicals are detected and retained as COPCs: acenaphthene; anthracene; Aroclor-1242; Aroclor-1254; Aroclor-1260; benzo[a]anthracene; benzo[a]pyrene; benzo[b]fluoranthene; benzo[g,h,i]perylene; benzo[k]fluoranthene; benzoic acid; bis[2-ethylhexyl]phthalate; alpha-chlordane; gamma-chlordane; chloroform; chrysene; 4,4'-DDD (dichlorodiphenyldichloroethane); 4,4'-DDE (dichlorophenyltrichloroethylene); 4,4'-DDT (dichlorodiphenyltrichloroethane); dieldrin; di-n-butylphthalate; 4,6-dinitro-2-methylphenol; di-n-octylphthalate; fluoranthene; fluorene; 1,2,3,4,6,7,8-heptachlorodibenzodioxin (HpCDD); 1,2,3,4,6,7,8-heptachlorodibenzofuran (HpCDF); 1,2,3,4,7,8,9-HpCDF; 1,2,3,4,7,8-hexachlorodibenzodioxin (HxCDD); 1,2,3,6,7,8-HxCDD; 1,2,3,7,8,9-HxCDD; 1,2,3,4,7,8-hexachlorodibenzofuran (HxCDF); 1,2,3,6,7,8-HxCDF; 1,2,3,7,8,9-HxCDF; 2,3,4,6,7,8-HxCDF; indeno[1,2,3-cd]pyrene; 2-methylnaphthalene; naphthalene; 1,2,3,4,6,7,8,9-octachlorodibenzodioxin (OCDD); 1,2,3,4,6,7,8,9-octoachlorodibenzofuran (OCDF); 1,2,3,7,8-pentachlorodibenzodioxin (PCDD); 1,2,3,7,8-pentachlorodibenzofuran (PCDF); 2,3,4,7,8-PCDF; phenanthrene; pyrene; 2,3,7,8-tetrachlorodibenzodioxin (TCDD); and 2,3,7,8-tetrachlorodibenzofuran (TCDF).

B-2.4 Summary of COPCs at SWMU 73-002

Table 7.3.1-1 provides a summary of the COPCs at SWMU 73-002.

B-3.0 AOC 73-003

B-3.1 Results of Inorganic Chemicals in Samples Collected from AOC 73-003

Historical samples at AOC 73-003 were analyzed for TAL metals. Samples from the recent investigation were analyzed for TAL metals, cyanide, nitrate, and perchlorate.

Table B-3.1-1 presents the frequency of inorganic chemicals above BVs at AOC 73-003. Table 7.3.2-2 presents inorganic chemicals detected above BV or having detection limits above BV at AOC 73-003. The locations and concentrations of inorganic chemicals detected above BVs at AOC 73-003 are shown in Figure 7.3.2-1 of the investigation report.

Chromium, copper, iron, nickel, and vanadium were detected above their respective BVs but are not retained as COPCs because the concentrations are within the range of concentrations in the background data set (LANL 1998, 059730). Chromium was detected above the Qbt 3 BV in two samples at 7.96 and 10 mg/kg, which are below the maximum Qbt 3 background concentration of 13 mg/kg. Copper was detected above the Qbt 3 BV in one sample at 5.3 mg/kg, which is below the maximum Qbt 3 background concentration of 6.2 mg/kg. Iron was detected above the Qbt 3 BV in one sample at 17,000 mg/kg, which is below the maximum Qbt 3 background concentration of 19,500 mg/kg. Nickel was detected above the Qbt 3 BV in one sample at 6.7mg/kg, which is below the maximum Qbt 3 background concentration of 7 mg/kg. Vanadium was detected above the Qbt 3 BV in one sample at 18 mg/kg, which is below the maximum Qbt 3 background concentration of 21 mg/kg.

Calcium was detected above the soil BV (6120 mg/kg) in two samples (locations 73-25534 and 73-25536) and above the Qbt 3 BV (2200 mg/kg) in three samples (locations 73-27234, 73-27233, and 73-10106). Calcium soil concentrations were below the maximum soil background concentration (14,000 mg/kg) and the concentrations in tuff were less than twice the maximum Qbt 3 background concentration

(2230 mg/kg). Calcium is not retained as a COPC because it is an essential nutrient (EPA 1989, 008021) and was detected infrequently and only slightly above background.

Magnesium was detected above the Qbt 3 BV (1690 mg/kg) in four samples in four boreholes (locations 73-27234, 73-27233, 73-25537, and 73-10106). Magnesium was not detected above BV in the shallower samples in each borehole and concentrations were less than twice the maximum Qbt 3 background concentration (2820 mg/kg). Magnesium is not retained as a COPC because it is an essential nutrient (EPA 1989, 008021) and was detected infrequently and only slightly above background.

Aluminum, arsenic, barium, cobalt, lead, manganese, selenium, and zinc were reported with at least one detected concentration above the BV and the range of background concentrations. These inorganic chemicals are retained as COPCs.

Nitrate and perchlorate were detected in at least one sample but have no BVs. These inorganic chemicals are retained as COPCs.

Cadmium was not detected but had at least one detection limit above the range of background concentrations and is retained as a COPC.

B-3.2 Results of Radionuclides in Samples Collected from AOC 73-003

Historical samples at AOC 73-003 were not analyzed for radionuclides. Samples from the recent investigation were analyzed for gamma-emitting radionuclides by gamma spectroscopy, americium-241, isotopic plutonium, and isotopic uranium.

Table B-3.2-1 presents the frequency of radionuclides detected or detected above BVs/FVs at AOC 73-002. No radionuclides are detected or detected above BVs or FVs and there are no radionuclide COPCs at AOC 73-003.

B-3.3 Results of Organic Chemicals in Samples Collected from AOC 73-003

Historical samples at AOC 73-003 were analyzed for VOCs, SVOCs, PCBs, and pesticides. Samples from the recent investigation were also analyzed for VOCs, SVOCs, PCBs, and pesticides.

Table B-3.3-1 presents the frequency of organic chemicals detected at AOC 73-003. Identification of organic COPCs is based on detection status. Table 7.3.2-3 presents the detected organic chemicals. The locations and concentrations of organic chemicals detected at AOC 73-003 are shown in Figure 7.3.2-2 of the investigation report.

Ten organic chemicals are detected and retained as COPCs: Aroclor-1254, benzo[b]fluoranthene, DDD, DDE, DDT, 1,1-dichloroethene, di-n-butylphthalate, fluoranthene, pyrene, and toluene.

B-3.4 Summary of COPCs at AOC 73-003

Table 7.3.2-1 provides a summary of the COPCs at AOC 73-003.

B-4.0 SWMU 73-004(a)

B-4.1 Results of Inorganic Chemicals in Samples Collected from SWMU 73-004(a)

Historical samples at SWMU 73-004(a) were analyzed for TAL metals. Samples from the current investigation were analyzed for TAL metals, cyanide, nitrate, and perchlorate.

Table B-4.1-1 presents the frequency of inorganic chemicals above BVs at SWMU 73-004(a). Table 7.3.3-2 presents inorganic chemicals detected above BV or having detection limits above BV at SWMU 73-004(a). The locations and concentrations of inorganic chemicals detected above BVs at SWMU 73-004(a) are shown in Figure 7.3.3-1 of the investigation report.

Aluminum, arsenic, iron, magnesium, and manganese were detected above their respective BVs but are not retained as COPCs because their concentrations are within the range of concentrations in the background data set (LANL 1998, 059730). Aluminum was detected above the soil BV in one fill sample at 33,300 mg/kg, which is less than the maximum soil background concentration of 61,500 mg/kg. Arsenic was detected above the Qbt 3 BV in one sample at 3.2 mg/kg, which is less than the maximum Qbt 3 background concentration of 5 mg/kg. Iron was detected above the soil BV in one fill sample at 26,200 mg/kg, which is less than the maximum soil background concentration of 36,000 mg/kg. Magnesium was detected above the soil BV in one fill sample at 6410 mg/kg, which is less than the maximum soil background concentration of 10,000 mg/kg. Manganese was detected above the Qbt 3 BV in one sample at 501 mg/kg, which is less than the maximum Qbt 3 background concentration of 752 mg/kg.

Calcium was detected above BV in two samples from two locations (73-02207 and 73-25557). The soil concentration at location 73-25557 (8050 mg/kg) is less than the maximum soil background concentration (14,000 mg/kg). At location 73-02207 along the drainline, calcium was detected above the tuff BV (2200 mg/kg) at 5.5 to 6 ft bgs, but was not detected above the maximum background concentration. Calcium is not retained as a COPC because it is an essential nutrient (EPA 1989, 008021) and was not detected above background.

Antimony, barium, copper, lead, silver, and zinc were reported with at least one detected concentration above the BV and above the range of background concentrations. These inorganic chemicals are retained as COPCs.

Nitrate and perchlorate were detected in at least one sample but have no BVs. These inorganic chemicals are retained as COPCs.

Cadmium, mercury, selenium, and thallium were not detected but had at least one detection limit above the range of background concentrations and are retained as COPCs.

B-4.2 Results of Radionuclides in Samples Collected from SWMU 73-004(a)

One historical sample from SWMU 73-004(a) was analyzed for tritium. Samples from the recent investigation were analyzed for gamma-emitting radionuclides by gamma spectroscopy.

Table B-4.2-1 presents the frequency of radionuclides detected or detected above BVs/FVs at SWMU 73-004(a). Cesium-137 was detected in one fill sample collected over the depth interval of 0 to 1 ft at 0.0633 pCi/g. Because this sampling interval included the surface interval of 0 to 0.5 ft, the result is compared to the FV for cesium-137. Cesium-137 is not retained as a COPC because the detected value is less than the FV of 1.65 pCi/g. No other radionuclides are detected above BVs or FVs SWMU and there are no radionuclide COPCs at SWMU 73-004(a).

B-4.3 Results of Organic Chemicals in Samples Collected from SWMU 73-004(a)

Historical samples at SWMU 73-004(a) were analyzed for VOCs, SVOCs, PCBs, and pesticides. Samples from the recent investigation were analyzed for VOCs, SVOCs, PCBs, pesticides, dioxins and furans, and explosive compounds.

Table B-4.3-1 presents the frequency of organic chemicals detected at SWMU 73-004(a). Identification of organic COPCs is based on detection status. Table 7.3.3-3 presents the detected organic chemicals. The locations and concentrations of organic chemicals detected at SWMU 73-004(a) are shown in Figure 7.3.3-3 of the investigation report.

Twenty-eight organic chemicals were detected and retained as COPCs: anthracene; alpha-chlordane; gamma-chlordane; DDD; DDE; DDT; fluoranthene; 1,2,3,4,6,7,8-HpCDD; 1,2,3,4,6,7,8-HpCDF; 1,2,3,4,7,8,9-HpCDF; 1,2,3,4,7,8-HxCDD; 1,2,3,6,7,8-HxCDD; 1,2,3,7,8,9-HxCDD; 1,2,3,4,7,8-HxCDF; 1,2,3,6,7,8-HxCDF; 2,3,4,6,7,8-HxCDF; 2-methylnaphthalene; naphthalene; 1,2,3,4,6,7,8,9-OCDD; 1,2,3,4,6,7,8,9-OCDF; 1,2,3,7,8-PCDD; 1,2,3,7,8-PCDF; 2,3,4,7,8-PCDF; phenanthrene; pyrene; 2,3,7,8-TCDF; toluene; and trichlorofluoromethene.

B-4.4 Summary of COPCs at SWMU 73-004(a)

Table 7.3.3-1 provides a summary of the COPCs at SWMU 73-004(a).

B-5.0 SWMU 73-004(b)

B-5.1 Results of Inorganic Chemicals in Samples Collected from SWMU 73-004(b)

Historical samples at SWMU 73-004(b) were analyzed for TAL metals. Samples from the recent investigation were analyzed for TAL metals, cyanide, nitrate, and perchlorate.

Table B-5.1-1 presents the frequency of inorganic chemicals above BVs at SWMU 73-004(b). Table 7.3.4-2 presents inorganic chemicals detected above BV or having detection limits above BV at SWMU 73-004(b). The locations and concentrations of inorganic chemicals detected above BVs at SWMU 73-004(b) are shown in Figure 7.3.4-1 of the investigation report.

Beryllium, iron, manganese, and potassium were detected above their respective BVs but are not retained as COPCs because their concentrations are within the range of concentrations in the background data set (LANL 1998, 059730). Beryllium was detected above the soil BV in two fill samples at 1.9 and 2.18 mg/kg, which are less than the maximum soil background concentration of 3.95 mg/kg. Iron was detected above the soil BV in two fill samples at 25,000 and 26,800 mg/kg and above the Qbt 3 BV in one tuff sample at 15,000 mg/kg, which are less than the maximum background concentrations for soil (36,000 mg/kg) and for tuff (19,500 mg/kg). Manganese was detected above the soil BV in one fill sample at 699 mg/kg and one soil sample at 690 mg/kg, which are less than the maximum soil background concentration of 1100 mg/kg. Potassium was detected above the soil BV in one fill sample at 4140 mg/kg, which is less than the maximum soil background concentration of 6850 mg/kg.

Calcium was detected above the soil BV (6120 mg/kg) but below the maximum soil background concentration (14,000 mg/kg) in one sample at location 73-02326. Calcium was also detected above the Qbt 3 BV (2200 mg/kg) in three samples (locations 73-02211 and 73-25551). Calcium concentrations were less than or slightly more than twice the maximum Qbt 3 background concentration (2230 mg/kg). Calcium is not retained as a COPC because it is an essential nutrient (EPA 1989, 008021) and was detected infrequently and only slightly above background.

Magnesium was detected above the soil BV (4610 mg/kg) in four samples (locations 73-10099, 73-25544, 73-25550, and 73-25552) and above the Qbt 3 BV (1,690 mg/kg) in two samples (locations 73-02211 and 73-25551). Magnesium concentrations in soil were less than the maximum soil background concentration (10,000 mg/kg). The concentrations in tuff were either below the maximum Qbt 3 background concentration (2820 mg/kg) or slightly above the maximum at 3110 mg/kg. Magnesium is not retained as

a COPC because it is an essential nutrient (EPA 1989, 008021) and was detected infrequently and only slightly above background.

Aluminum, arsenic, barium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, vanadium, and zinc were reported with at least one detected concentration above the BV and above the range of background concentrations. These inorganic chemicals are retained as COPCs.

Nitrate and perchlorate were detected in at least one sample but have no BVs. These inorganic chemicals are retained as COPCs.

Antimony, cadmium, and thallium werenot detected above the BV but had at least one detection limit above BV or the range of background concentrations and are retained as COPCs.

B-5.2 Results of Radionuclides in Samples Collected from SWMU 73-004(b)

Some of historical samples from SWMU 73-004(b) were analyzed for tritium. Samples from the recent investigation were analyzed for gamma-emitting radionuclides by gamma spectroscopy.

Table B-5.2-1 presents the frequency of radionuclides detected or detected above BVs/FVs at SWMU 73-004(b). Table 7.3.4-3 presents the radionuclides detected or detected above BV/FV at SWMU 73-004(b). Cesium-137 and tritium were the only radionuclides detected in soil and tuff at SWMU 73-004(b). Cesium-137 was detected in four soil samples, all collected over the depth interval of 0 to 1 ft, at concentrations ranging from 0.166 to 1.05 pCi/g. Because these sample intervals included the surface interval of 0 to 0.5 ft, the results are compared to the FV for cesium-137. Cesium-137 is not retained as a COPC because the detected values are less than the FV of 1.65 pCi/g. Tritium has no BV/FV and is detected in one soil and one tuff sample and retained as the only radionuclide COPC. The location of the detected concentration of tritium is shown in Figure 7.3.4-2.

B-5.3 Results of Organic Chemicals in Samples Collected from SWMU 73-004(b)

Historical samples at SWMU 73-004(b) were analyzed for VOCs, SVOCs, PCBs, and pesticides. Samples from the recent investigation were analyzed for VOCs, SVOCs, PCBs, and pesticides and one sample was also analyzed for explosive compounds.

Table B-5.3-1 presents the frequency of organic chemicals detected at SWMU 73-004(b). Identification of organic COPCs is based on detection status. Table 7.3.4-4 presents the detected organic chemicals. The locations and concentrations of organic chemicals detected at SWMU 73-004(b) are shown in Figure 7.3.4-3 of the investigation report.

Twenty-nine organic chemicals were detected and retained as COPCs: acenaphthene; acetone; anthracene; Aroclor-1254; Aroclor-1260; benzo(a)anthracene, benzo(a)pyrene; benzo(b)fluoranthene; benzo(g,h,i)perylene; benzo(k)fluoranthene; benzoic acid; bis(2-ethylhxyl)phthalate; butylbenzylphthalate; alpha-chlordane; gamma-chlordane; chrysene; DDD; DDE; DDT; di-n-butylphthalate; di-n-octylphthalate; endrin aldehyde; fluoranthene; fluorene; indeno(1,2,3-cd)pyrene; 2-methylnaphthalene; naphthalene; phenanthrene; and pyrene.

B-5.4 Summary of COPCs at SWMU 73-004(b)

Table 7.3.4-1 provides a summary of the COPCs at SWMU 73-004(b).

B-6.0 SWMU 73-006

B-6.1 Results of Inorganic Chemicals in Samples Collected from SWMU 73-006

Historical samples at SWMU 73-006 were analyzed for TAL metals. Samples from the recent investigation were analyzed for TAL metals, cyanide, nitrate, and perchlorate.

Table B-6.1-1 presents the frequency of inorganic chemicals above BVs at SWMU 73-006. Table 7.3.5-2 presents inorganic chemicals detected above BV or having detection limits above BV at SWMU 73-006. The locations and concentrations of inorganic chemicals detected above BVs at SWMU 73-006 are shown in Figure 7.3.5.1 of the investigation report.

Arsenic, chromium, cobalt, iron, and thallium were detected above their respective BVs but are not retained as COPCs because their concentrations are within the range of concentrations in the background data set (LANL 1998, 059730). Arsenic was detected above the Qbt 3 BV in one tuff sample at 3.37 mg/kg, which is less than the maximum Qbt 3 background concentration of 5 mg/kg. Chromium was detected above the soil BV in one soil sample at 23.8 mg/kg and above the Qbt 3 background in three tuff samples at 7.86, 9.84, and 12.2 mg/kg, which are less than the maximum background concentrations for soil (36.5 mg/kg) and for tuff (13 mg/kg). Cobalt was detected above the soil BV in one fill sample at 9.2 mg/kg, which is less than the maximum soil background concentration of 9.5 mg/kg. Iron was detected above the soil BV in one soil sample at 23,900 mg/kg and above the Qbt 3 BV in one tuff sample at 15,500 mg/kg, which are less than the maximum background concentrations for soil (36,000 mg/kg) and for tuff (19,500 mg/kg). Thallium was detected above the soil BV in one soil sample at 0.85 mg/kg, which is less than the maximum soil background concentration of 1 mg/kg.

Calcium was detected above the soil BV (6120 mg/kg) in two samples (locations 73-25559 and 73-10097) and above the Qbt 3 BV (2,200 mg/kg) in five samples (locations 73-25558, 73-25545, 73-27241, 73-02442, and 73-02443). The calcium concentration at location 73-25559 was below the maximum soil background concentration (14,000 mg/kg), while the concentration at location 73-10097 was approximately twice the maximum soil background concentration. The calcium concentrations in Qbt 3 were less than twice the maximum Qbt 3 background concentration (2230 mg/kg) in all samples, except for location 73-25545. Calcium at this location was detected at 46000 mg/kg at 4 to 5 ft bgs but was not detected above the BV in the shallower sample from 1.5 to 2.5 ft. Calcium is not retained as a COPC because it is an essential nutrient (EPA 1989, 008021) and was detected infrequently at more than twice background.

Magnesium was detected above the soil BV (4610 mg/kg) in one soil sample (location 73-25558) and above the Qbt 3 BV (1690 mg/kg) in three samples (locations 73-25558, 73-25545, and 73-27241). Magnesium concentrations at locations 73-25545 and 73-27241 were below the maximum Qbt 3 background concentration (2820 mg/kg). Magnesium concentrations at location 73-25558 were less than three times the maximum Qbt 3 background concentration at 0 to 0.5 ft (6,360 mg/kg) and less than twice the maximum Qbt 3 background concentration at 2 to 3 ft bgs (2820 mg/kg). Magnesium is not retained as a COPC because it is an essential nutrient (EPA 1989, 008021) and was detected infrequently and only slightly above background at one location.

Aluminum, barium, cadmium, copper, lead, mercury, nickel, selenium, silver, vanadium, and zinc were reported with at least one detected concentration above the BV and above the range of background concentrations. These inorganic chemicals are retained as COPCs.

Nitrate was detected in at least one sample but has no BV. This inorganic chemical is retained as a COPC.

Antimony was not detected but had at least one detection limit above BV and the range of background concentrations. Antimony is retained as a COPC.

B-6.2 Results of Radionuclides in Samples Collected from SWMU 73-006

Half the historical samples from SWMU 73-006 were analyzed for gamma-emitting radionuclides by gamma spectroscopy, isotopic plutonium, and isotopic uranium. Samples from the recent investigation were analyzed for gamma-emitting radionuclides by gamma spectroscopy, isotopic plutonium, and isotopic uranium.

Table B-6.2-1 presents the frequency of radionuclides detected or detected above BVs/FVs at SWMU 73-006. Cesium-137, uranium-234, uranium-235, and uranium-238 were the only radionuclides detected in soil/fill samples at SWMU 73-006. Cesium-137 was detected in one fill sample collected over the depth interval of 0 to 1 ft at 0.12 pCi/g. Because this sample interval included the surface interval of 0 to 0.5 ft, the result is compared to the FV for cesium-137. Cesium-137 is not retained as a COPC because the detected value is less than the FV of 1.65 pCi/g. All detected concentrations of uranium isotopes are less than the soil BV and uranium isotopes are not retained as COPCs. Plutonium-239, uranium-234, uranium-235, and uranium-238 were the only radionuclides detected in tuff samples. All detected concentrations of uranium isotopes are less than the Qbt 3 BV and uranium isotopes are not retained as COPCs. Plutonium-239 is detected in one tuff sample (0.0211 pCi/g at location 73-02443) and is retained as the only radionuclide COPC. The location of the detected concentration of plutonium-239 is shown in Figure 7.3.5-2.

B-6.3 Results of Organic Chemicals in Samples Collected from SWMU 73-006

Historical samples at SWMU 73-006 were analyzed for VOCs, SVOCs, PCBs, and pesticides and three samples were also analyzed for dioxins and furans. Samples from the recent investigation were analyzed for VOCs, SVOCs, PCBs, pesticides, dioxins and furans, and explosive compounds.

Table B-6.3-1 presents the frequency of organic chemicals detected at SWMU 73-006. Identification of organic COPCs is based on detection status. Table 7.3.5-3 presents the detected organic chemicals. The locations and concentrations of organic chemicals detected at SWMU 73-004(b) are shown in Figure 7.3.5-3 of the investigation report.

Forty organic chemicals were detected and retained as COPCs: acenaphthene; anthracene; Aroclor 1260; benzo[a]anthracene; benzo[a]pyrene; benzo[b]fluoranthene; benzo[g,h,i]perylene; benzo[k]fluoranthene; bis[2-ethylhxyl]phthalate; chrysene; DDD; DDE; DDT; diethylphthalate, fluoranthene, fluorene, 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF; 1,2,3,4,7,8-HxCDD; 1,2,3,6,7,8-HxCDD; 1,2,3,7,8,9-HxCDD; 1,2,3,4,7,8-HxCDF; 1,2,3,6,7,8-HxCDF; 1,2,3,7,8,9-HxCDF; 2,3,4,6,7,8-HxCDF; indeno (1,2,3-cd)pyrene; 4-isopropyltoluene; 2-methylnaphthalene; naphthalene; 1,2,3,4,6,7,8,9-OCDD; 1,2,3,4,6,7,8,9-OCDF; 1,2,3,7,8-PCDD; 1,2,3,7,8-PCDF; 2,3,4,7,8-PCDF; phenanthrene; pyrene; 2,3,7,8-TCDD, 2,3,7,8-TCDF; and 1,1,2-trichloro-1,2,2-trifluoroethane.

B-6.4 Summary of COPCs at SWMU 73-006

Table 7.3.5-1 provides a summary of the COPCs at SWMU 73-006.

B-7.0 NATURE AND EXTENT

B-7.1 SWMU 73-002

Migration of contaminants from SWMU 73-002 is expected to occur primarily by little surface runoff from the ash pile. Because of the steepness of the slope upon which the ash was deposited, vertical migration of contaminants from the ash pile into the tuff is not expected. The primary source of data with which to evaluate extent of contamination at SWMU 73-002, therefore, are the results from sampling the three drainages that received runoff from the site. In addition, these drainages also received runoff from SWMUs 73-004(a) and 73-006, and the drainage samples are used to define extent for these two sites. The confirmation samples collected from the grid points beneath and adjacent to the ash pile were collected to verify attainment of cleanup standards, not to determine extent. In addition, contaminant concentrations in the confirmation samples are less than concentrations present in ash and debris before remediation activities.

The inorganic chemicals detected above BV in samples from these drainages are shown in Plate 2. Inorganic chemicals detected in drainage samples above the maximum background concentrations for soil are lead, selenium, silver, and zinc. Nitrate and perchlorate, which have no background concentration, were also detected in drainage samples. Concentrations of these inorganic chemicals either decreased with distance down the drainages (lead, silver, and zinc), were detected infrequently (perchlorate and selenium) or with no pattern of detection (nitrate). Nitrate is also naturally occurring. The inorganic chemicals detected at the highest concentrations were lead and zinc, which are associated with the debris disposed of at the site. Concentrations of lead and zinc were elevated above BV at the heads of the drainages but decreased to below BV at the toes of the drainages. Silver was elevated above BV in the sample from the head of the western drainage but was detected above BV in only one other drainage sample, indicating a decrease in concentration with distance down slope. The maximum concentrations of lead, silver, and zinc in the drainages were detected at sampling locations downslope of the ash pile at concentrations that were at least 1 order of magnitude less than the concentrations measured in the ash.

Nitrate was detected in approximately 60% of the drainage samples, but generally at low concentrations (less than 2 mg/kg). The two highest detections of nitrate (8.46 and 9.35 mg/kg) were in the central drainage but were the only detects in the central drainage and were bounded by nondetections at the toe of the drainage. Perchlorate was detected in only four drainage samples at a maximum concentration of 0.00112 mg/kg and showed no concentration patterns or trends. Selenium was detected slightly above BV in one drainage sample and was not detected in any samples collected at the toes of the drainages.

Lead and zinc were the only inorganic chemicals detected above BV in subsurface drainage samples. Lead and zinc were each detected above BV in one subsurface sample collected at location 73-25597 in the eastern drainage. Concentrations detected in the sample from the interval 1 to 2 ft bgs were approximately equal to the concentrations in the sample from the interval 0 to 0.25 ft bgs and were also within the range of background concentrations. The extent of inorganic chemical contamination in the site drainages is defined.

As shown in Table 7.3.1-2 and Plate 2, concentrations of inorganic chemicals generally decrease with depth at sampling locations with more than one sampling interval. This trend, along with the low frequency of detection of inorganic chemicals above BV in deep samples, indicates that the vertical extent of inorganic chemical contamination beneath the ash pile is defined. Where more than one sample was collected at a sampling location, comparison of concentrations with depth was used to confirm vertical extent.

Radionuclides detected or detected above BV/FV in drainage samples are shown in Plate 3 and consist of americium-241, cesium-137, plutonium-238, plutonium-239, tritium, uranium-234, and uranium-238. Plutonium-239 was the most frequently detected radionuclide in the drainage samples. Plutonium-239 concentrations displayed a general decrease with distance down the drainages. Although the highest plutonium-239 concentrations were not at the heads of the drainages, in all three drainages, the lowest concentration of plutonium-239 was detected at the end of the drainage. Americium-241 was detected most frequently in the western drainage. Americium-241 was not detected above FV in the two furthest downslope samples in both the western and central drainage. Americium-241 was detected above FV in the furthest downslope sample in the eastern drainage but was not detected in other samples in that drainage.Cesium-137 concentrations decreased down all of the drainages and was not detected in samples collected at the end of each drainage. Isotopic uranium concentrations decreased to below BVs at the end of each drainage. Tritium was detected in one sample in the central drainage and was not detected farther down the drainage.

Cesium-137, plutonium-239, and strontium-90 were the only radionuclides detected in subsurface drainage samples. Cesium-137 and plutonium-239 were each detected in subsurface samples collected from two locations in the east drainage (73-25594 and 73-25597) and two locations in the west drainage (73-25604 and 73-25606). Cesium-137 concentrations decreased with depth at locations 73-25604 and 73-25606, were approximately equal at both depth intervals at location 73-25594, and increased slightly with depth at location 73-25597 (0.203 pCi/g at 0 to 0.25 ft bgs and 0.757 pCi/g at 1 to 2 ft bgs). Plutonium-239 concentrations decreased with depth at all four locations. Strontium-90 was detected in one subsurface sample (0.17 pCi/g at 1 to 2 ft bgs at location 73-25597) but was not analyzed for in the surface sample at this location. The vertical and lateral extent of radionuclide contamination in site drainages is defined.

As shown in Table 7.3.1-3 and Plate 3, concentrations of radionuclides generally decrease with depth at sampling locations with more than one sampling interval. This trend, along with the low frequency of detection of radionuclides above BV/FV in deep samples, indicates that the vertical extent of radionuclide contamination beneath the ash pile is defined. Where more than one sample was collected at a sampling location, comparison of concentrations with depth was used to confirm vertical extent.

Organic chemicals detected in drainage samples are shown in Plate 4. These organic chemicals were dioxin/furan congeners, PCBs, pesticides, and polycyclic aromatic hydrocarbon (PAHs). The most frequently detected organic chemicals were dioxin and furan congeners, which were detected in all drainage samples. The concentrations of dioxin and furan congeners, as represented by the toxicity equivalence (TEQ) to TCDD decreased with distance down the drainages. In all three drainages, the lowest TEQ was associated with the sample taken furthest down the drainage. PCBs (Aroclors-1242, -1254, and/or -1260) were detected in approximately 60% of the drainage samples. Aroclor-1242 was not detected at the end of the drainages and no Aroclors were detected at the end of the central drainage. Aroclors-1254 and -1260 were detected at the low concentrations at the end of the western drainage than farther up the drainage. Aroclor-1254 was only detected in the eastern drainage at concentrations less than farther up the drainage. Pesticides and degradation products detected in drainage samples were alpha-chlordane, gamma-chlordane, DDD, DDE, DDT, and dieldrin. These pesticides were detected sporadically (2 to 9 detections each) and all detected values were at or below the estimated quantitation limit (EQL). No pesticides were detected in any of the samples collected at the toes of the drainages. PAHs detected in drainage samples were anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, phenanthrene, and pyrene. With the exception of fluoranthene, phenanthrene, and pyrene, PAHs were detected sporadically (1 to 9 samples each) and almost all detections were at or below the EQL. Fluoranthene, phenanthrene, and pyrene were detected in at least 75% of the drainage

samples but were detected at the highest concentrations at the heads of drainages and decreased in concentration down the drainages. The only other organic chemicals detected in drainage samples were benzoic acid and di-n-octylphthalate. Benzoic acid was detected in three samples at low concentrations (below EQL) and was not detected in any of the samples collected at the toes of drainages. Di-n-octylphthalate was detected in only one sample at the toe of the east drainage at a low concentration (below EQL). As noted in section 3.1.2 of the report, subsurface drainage samples were not analyzed for organic chemicals. The extent of organic chemical contamination is defined.

As shown in Table 7.3.1-4 and Plate 4, concentrations of organic chemicals decrease with depth at sampling locations with more than one sampling interval. This trend, along with the low frequency of detection of organic chemicals in deep samples, indicates that the vertical extent of organic chemical contamination beneath the ash pile is defined. Where more than one sample was collected at a sampling location, comparison of concentrations with depth was used to confirm vertical extent.

The extent of contaminant migration associated with surface runoff from SWMU 73-002 was also evaluated as part of the Los Alamos/Pueblo Canyons investigation. This investigation originally detected dioxin and furan congeners in sediments in reaches of Pueblo Canyon downstream of SWMU 73-002. The presence of dioxins and furans raised the concern that these contaminants may have migrated into the active channel and floodplains of Pueblo Canyon from SWMU 73-002. As a result, additional investigations were conducted and documented in the Los Alamos and Pueblo Canyons supplemental investigation report (LANL 2005, 091818). Sediment samples were collected from two reaches of Pueblo Canyon downstream of SWMU 73-002 and one reach upstream of SMWU 73-002. These samples were analyzed for dioxins and furans. The comparison of upstream and downstream results showed no increase in concentrations of dioxins and furans that would indicate recognizable contributions from SMWU 73-002 to the canyon-bottom sediments. The supplemental investigation report concluded that SWMU 73-002 does not represent a significant additional source for dioxins or furans for canyon-bottom sediments and confirms the definition of extent for all COPCs at the site (LANL 2005, 091818).

B-7.2 AOC 73-003

Historical sampling at AOC 73-003 focused on characterizing potential releases from the drainline beneath the former building. Samples collected from AOC 73-003 in 2006 and 2007 were collected outside the footprint of the former building and at greater depths than the historical samples to determine the nature and extent of inorganic and organic COPCs at the site. The inorganic COPCs exceeded background at various locations and depths across the site; therefore, the spatial distribution focuses on specific locations where an inorganic COPC was detected above background in order to determine if the extent of contamination is defined.

As described in Section B-3.1, inorganic COPCs detected at AOC 73-003 are aluminum, arsenic, barium, cobalt, lead, manganese, nitrate, perchlorate, selenium, and zinc. Figure 7.3.2-1 depicts the spatial distribution of inorganic COPCs above BV at AOC 73-003.

Aluminum was detected above the Qbt 3 BV (7340 mg/kg) in four boreholes (locations 73-27234, 73-27233, 73-10106, and 73-25534). Aluminum concentrations above BV in locations 73-27233 and 73-25534 decrease with depth to below the BV. The concentrations above BV in locations 73-10106 and 73-27234 are approximately twice the maximum Qbt 3 background concentration (8370 mg/kg) and were not detected above background in shallower samples. The aluminum concentration in location 73-27234 is bounded by location 73-27233 (approximately 20 ft to the east), which did not detect aluminum above background at 6 to 7 ft bgs. The aluminum concentration in location 73-10106 is bounded by locations 73-10107 (approximately 20 ft to the north) and by location 73-25537 (approximately 10 ft to the

southeast), which did not detect aluminum above background at 8 to 8.5 ft bgs and 7 to 8 ft bgs, respectively. Although the detection above Qbt 3 BV at location 73-27234 is not bounded by samples to the west, the detected concentration (12,000 mg/kg) is less than 2 times the maximum Qbt 3 background concentration (8370 mg/kg) and is less than the soil BV. The detection of aluminum above BV only in the tuff at only one depth in four separate boreholes, but not in soil at those locations, and the relatively low detected concentrations above the BV (approximately twice the maximum background concentration) likely reflect the natural variability of the tuff and is not indicative of a release from AOC 73-003. The extent of aluminum is defined.

Arsenic was detected above the Qbt 3 BV (2.79 mg/kg) in five tuff samples in three boreholes (locations 73-27234, 73-27233, and 73-10106), but only one sample result (location 73-27234) was above the maximum Qbt 3 background concentration (5 mg/kg). This sample was collected from 6.0 to 7.0 ft bgs and was slightly above the maximum background concentration (6.22 mg/kg compared with the maximum of 5 mg/kg). The infrequent detection of arsenic above BV only in the tuff but not in soil and the low detected concentrations above the BV (either less than the maximum background concentration or less than 2 mg/kg above the maximum) likely reflect the natural variability of the tuff and is not indicative of a release from AOC 73-003. The extent of arsenic is defined.

Barium was detected above the Qbt 3 BV (46 mg/kg) in four tuff samples in four boreholes (locations 73-27234, 73-27233, 73-10106, and 73-25537). In location 73-27233, barium was detected above BV at 4 to 5 ft bgs but not at 6 to 7 ft bgs. In locations 73-27234, 73-25537, and 73-10106, barium was detected above BV in the deepest samples (6 to 7 ft bgs, 7 to 8 ft bgs, and 6 to 6.4 ft bgs, respectively) but was not detected above BV in the shallower samples at each location. The barium concentrations were also less than twice or slightly more than twice the maximum tuff background concentration (51.6 mg/kg). These detections above BV are bounded to the north, south, and east by detections below BV at similar depths in other boreholes. The detection of barium above BV only in tuff at only one depth in four separate boreholes but not in soil, and the relatively low detected concentrations above BV (less than or approximately twice the maximum background concentration) likely reflect the natural variability of the tuff and do not indicate a release. The extent of barium is defined.

Cobalt was detected slightly above the maximum soil background concentration (9.5 mg/kg) in two soil samples (9.67 mg/kg and 9.8 mg/kg) in two boreholes (locations 73-27234 and 73-10104). Cobalt concentrations decreased with depth at these locations to below BV and cobalt was not detected above BV in the other boreholes. The extent of cobalt is defined.

Lead was detected above the soil BV in three soil samples (locations 73-10104, 73-10105, and 73-10106) and above the Qbt 3 BV in two samples at 7.0 to 8.0 ft bgs (locations 73-25537 and 73-25534). Lead concentrations decreased with depth to below background in location 73-10104 and 73-10106. The detection of lead above BV at 7 to 8 ft bgs in location 73-25534 (11.7 mg/kg) is less than the maximum Qbt 3 background concentration (15.5 mg/kg). Location 73-25537 was drilled to provide additional information at depth for location 73-10105 and indicated a decrease in lead concentrations from 88 mg/kg (location 73-10105 at 5 to 5.5 ft bgs) to 23.4 mg/kg (location 73-25537 at 7 to 8 ft bgs). In addition, lead was not detected above background at 6 to 6.4 ft bgs at location 73-10106, which is approximately 15 ft north and west of location 73-10105. The extent of lead is defined.

Manganese was detected above BV in one soil sample at location 73-27234 and one tuff sample at location 73-25537. The manganese soil concentration (1050 mg/kg) is less than the maximum soil background concentration (1100 mg/kg). The manganese tuff concentration (971 mg/kg) is less than twice the maximum Qbt 3 background concentration (752 mg/kg); manganese was not detected above the soil BV in location 73-10105, which is adjacent to location 73-25537. Manganese was not detected above background in any other borehole samples. The extent of manganese is defined.

Selenium was detected above BV in 21 of 28 samples collected at AOC 73-003. The detected concentrations of selenium appear to be strongly related to the sampling event date rather than the sampling location. Selenium was detected above BV in only one of eight historical samples (0.57 mg/kg location 73-10106), which is less than twice the BV (0.3 mg/kg). Selenium was detected above BV in all 14 samples collected in March 2006 at concentrations ranging from 11.5 mg/kg to 33.2 mg/kg. Several of these sampling locations are adjacent to historical sampling locations where selenium was not detected above BV. Selenium was detected above BV in six of six samples collected from November 2006 to January 2007 at concentrations ranging from 1.59 mg/kg to 6.79 mg/kg, although the selenium concentrations were highest in the November 2006 samples. Selenium concentrations decrease with depth at four locations (73-27334, 73-25534, 73-5535, and 73-5538), increase with depth at one location (73-25537), and do not change with depth at three locations (73-27233, 73-25539, and 73-25536). Selenium in location 73-10106 is detected slightly above the BV at the bottom of the borehole as mentioned above. The extent of selenium is defined.

Zinc was detected above BV in one soil sample at location 73-10104 (50 mg/kg) and one tuff sample at location 73-25537 (79.7 mg/kg). The concentration in the soil sample is below the maximum soil background concentration (75.5 mg/kg). The zinc concentration in the tuff sample (79.7 mg/kg) is less than twice the maximum Qbt 3 background concentration (65.6 mg/kg); zinc was not detected in the adjacent location 73-10105 at shallower depths. The infrequent detection of zinc above BV and the low detected concentrations above the BV (either less than the maximum background concentration or less than twice above the maximum) likely reflect the natural variability of the tuff and is not indicative of a release from AOC 73-003. The extent of zinc is defined.

Nitrate has no BV and was detected in soil and tuff samples collected at AOC 73-003. Nitrate, which occurs naturally in soil as a result of the decomposition of organic nitrogen, was detected in 18 of 20 samples at concentrations ranging from 1.93 mg/kg to 18 mg/kg. The highest nitrate concentrations were found outside of the building footprint and not associated with the drainline. Therefore, the nitrate concentrations likely reflect natural levels, and the extent of nitrate is defined.

Perchlorate has no BV and was detected in one sample (location 73-25534) at 3-4 ft bgs. Perchlorate was not detected in deeper samples at this location and the extent of perchlorate is defined.

Organic COPCs included PCBs (Aroclor-1254), pesticides (DDT, DDE, and DDD), VOCs (toluene and 1,1-dichloroethene), and SVOCs (di-n-butyl phthalate, benzo(b)fluoranthene, fluoranthene, and pyrene). Organic chemicals detected in samples collected at AOC 73-003 are shown in Figure 7.3.2-2.

DDT was detected in three soil samples and two tuff samples in four boreholes (locations 73-25539, 73-10107, 73-25538, and 73-10106) at low concentrations (0.000655 to 0.19 mg/kg). DDT concentrations decreased with depth at each location. DDE was detected in three boreholes (locations 73-27234, 73-25539, and 73-10107). DDE concentrations in locations 73-25539 and 73-10107 decreased with depth, while the concentration in location 73-27234 (0.000509 mg/kg) was below the EQL at the bottom of the borehole (DDE was not detected in the shallower sample). DDD was detected in location 73-10106 at 4.8 to 5.3 ft bgs but was not detected in the deeper sample at 6 to 6.4 ft bgs. Aroclor-1254 was detected at a low concentration (0.0123 mg/kg) in only one sample from the 7.0- to 8.0-ft-depth interval from location 73-25539 (Aroclor-1254 was not detected in the shallower samples). Benzo(b)fluoranthene was detected in one sample (location 73-25538), and fluoranthene and pyrene were detected in two samples (locations 73-10105 and 73-25538). These PAHs were not detected in the deeper samples at both locations. Di-n-butylphthalate was detected at low concentrations (0.0466 mg/kg and 0.081 mg/kg) in locations 73-27234 and 73-27233 at 6 to 7 ft bgs. Di-n-butylphthalate was not detected in shallower samples at these locations and the concentrations were below the EQLs. Toluene was detected in one soil sample in location 73-27233, but was not detected in deeper samples. Dichloroethene[1,1-] was

detected in two samples in locations 73-27234 and 73-27233 at low concentrations (0.00041 mg/kg and 0.00138 mg/kg, respectively) and was not detected in deeper samples in each borehole. The extent of organic COPCs at AOC 73-003 is defined.

B-7.3 SWMU 73-004(a)

Historical sampling at SWMU 73-004(a) focused on characterizing potential releases from the septic tank and the drainline from the septic tank. Samples collected at SWMU 73-004(a) in 2006 were stepped out from historical sampling locations and taken at greater depths than the historical samples to determine the nature and extent of inorganic and organic COPCs at the site. The outfall for the drainline discharges onto SWMU 73-002 and releases from the outfall were characterized as part of the investigation of SWMU 73-002. The inorganic COPCs exceeded background at various locations and depths across the site; therefore, the spatial distribution focuses on specific locations where an inorganic COPC was detected above background to determine if the extent of contamination is defined.

As described in Section B-4.1, the inorganic COPCs detected at SWMU 73-004(a) are antimony, barium, copper, lead, nitrate, perchlorate, silver, and zinc. Figure 7.3.3-1 depicts the spatial distribution of inorganic COPCs at SWMU 73-004(a).

Antimony was detected above BV in one sample at location 73-10121 at 3 to 4 ft bgs along the drainline. Antimony was not detected above BV in the deeper tuff sample at 6.5 to 7 ft bgs at this location. Antimony extent is bounded in the downstream direction by the boundary of SWUM 73-002 and is bounded in the upstream direction by the lack of detected concentrations above BV. Extent is bounded to the west by sampling location 73-25549 and to the east by the boundary of SWMU 73-006. The extent of antimony is defined.

Barium was detected above BV in three samples at three locations (73-10121, 73-02207, and 73-25557). The concentration at location 73-25557 (299 mg/kg) is less than the maximum soil background concentration (410 mg/kg). At location 73-10121, barium was detected approximately 3 times soil BV at 3 to 4 ft bgs, but was not detected above BV in the deeper tuff sample at 6.5 to 7 ft bgs. At location 73-02207, barium was detected (80 mg/kg) at less than 2 times the maximum Qbt 3 background concentration (51.6 mg/kg) at 5.5 to 6 ft bgs; barium was not detected above BV in a shallower soil sample. Barium extent is bounded downstream of locations 73-10121 and 73-02207 by the boundary of SWUM 73-002 and is bounded in the upstream direction by the lack of detected concentrations above BV. Extent is bounded to the west by sampling location 73-25549 and to the east by the boundary of SWMU 73-006. The extent of barium is defined.

Copper was detected above BV in one sample at location 73-10121 along the drainline. Copper was not detected above BV in the deeper tuff sample at 6.5 to 7 ft bgs at this location. Copper extent is bounded in the downstream direction by the boundary of SWUM 73-002 and is bounded in the upstream direction by the lack of detected concentrations above BV. Extent is bounded to the west by sampling location 73-25549 and to the east by the boundary of SWMU 73-006. The extent of copper is defined.

Lead was detected above BV in three samples at three locations (73-10121, 73-25548, and 73-25557). Lead was not detected above BV in the deeper samples at each of these locations. Lead extent is bounded downstream by the boundary of SWUM 73-002. At location 73-25557, lead was detected above soil BV at 0 to 1 ft bgs, but was not detected above BV in the deeper soil sample from 2 to 3 ft bgs. Extent to the north and east of location 73-25557 is defined by the lack of lead concentrations above background at locations 73-25548 and 73-25549. There are no other samples from SWMU 73-004(a) to the south and west of location 73-25557, but extent in these directions is bounded by neighboring SWMU 73-004(b). The extent of lead is defined.

Silver was detected above BV in five samples from four locations (73-10121, 73-02207, 73-10095, and 73-25548) along the drainline. Silver was not detected above BV in the deepest samples at these locations. Silver extent is bounded to the west by location 73-25549, to the south by location 73-25557, to the north by the boundary of SWMU 73-002, and to the east by the boundary of SWMU 73-006. The extent of silver is defined.

Zinc was detected above BV in five samples from four locations (73-10121, 73-10095, 73-25548, and 73-25557). The zinc concentration at location 73-25557 (50 mg/kg) is less than the maximum soil background concentration (75.5 mg/kg). Zinc was not detected above BV in the deepest samples at the other three locations. Zinc extent is bounded downstream by the boundary of SWUM 73-002. Extent is bounded to the west by location 73-25549, to the south by location 73-25557, and to the east by the boundary of SWMU 73-006. The extent of zinc is defined.

Nitrate has no BVs and was detected in soil and tuff samples collected at SWMU 73-004(a). Nitrate, which occurs naturally in soil as a result of the decomposition of organic nitrogen, was detected in five of seven samples at concentrations ranging from 0.776 mg/kg to 1.44 mg/kg. These concentrations are likely naturally occurring levels. Extent of nitrate is defined.

Perchlorate was detected in three of seven samples at concentrations ranging from 0.000639 mg/kg to 0.0023 mg/kg. The concentrations are near or below the estimated detection limits and show no trends in spatial distribution either laterally or vertically. Extent of perchlorate is defined.

Organic chemicals detected in samples collected at SWMU 73-004(a) are shown in Figure 7.3.3-3. These organic chemicals included pesticides and degradation products (DDT, DDE, DDD, chlordane[alpha-], and chlordane[gamma-]), VOCs (toluene and trichlorofluoromethane), SVOCs (anthracene, fluoranthene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene), and dioxins and furans.

DDT and DDE were detected in five or six samples from four locations (73-10121, 73-02207, 73-10095, and 73-25548) along the drainline. Concentrations of both pesticides decreased with depth and were not detected in the deepest samples at each location, with the exception of DDT at location 73-02207, which decreased by 2 orders of magnitude in the deeper sample at this location. DDD was detected in three samples from three locations (73-10121, 73-02207, and 73-25548). Concentrations of DDD decreased with depth and was not detected in the deepest samples at each location. Alpha-chlordane and gamma-chlordane were detected only at 3 to 4 ft bgs at location 73-10121 and concentrations decreased with depth. Extent is bounded downstream by the boundary of SWMU 73-002, to the west and south by sampling locations 73-25549 and 73-25557, and to the east by the boundary of SWMU 73-006. The extent of DDT, DDE, DDD, chlordane[alpha-], and chlordane[gamma-] is defined.

Toluene and trichlorofluoromethane were detected in one sample at location 73-02207. Toluene was detected in the sample from 5.5 to 6 ft bgs at this location at 0.00026 mg/kg, which is below the EQL. Trichlorofluoromethane was detected in the sample from 3.5 to 3.8 ft bgs at this location at 0.007 mg/kg and was not detected in the deeper sample. Lateral extent of both VOCs is bounded by nondetects in samples from adjacent boreholes. The extent of toluene and trichlorofluoromethane is defined.

SVOCs were detected in three samples at three locations (73-02207, 73-25548, and 73-25557). At all three locations, the PAHs were not detected in deeper samples. Extent is defined to the north by nondetects at location 73-01021, to the west by nondetects at location 73-25549, to the east by the boundary of SWMU 73-006, and to the south by the boundary of SWMU 73-004(b). The extent of anthracene, fluoranthene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene is defined.

Dioxin and furan congeners were detected in six of seven samples at three locations (73-25548, 73-25549, and 73-25557). At all three locations, the highest concentration (as represented by TCDD TEQ) was in the shallower sample so the TCDD TEQ concentrations decreased with depth. The highest dioxin/furan concentrations were detected at location 73-25548, which is closest to building 73-02, the source of the dioxins and furans. Lateral extent is defined by decreasing TCDD TEQ concentrations with distance from the incinerator building. The extent of dioxins and furans is defined.

B-7.4 SWMU 73-004(b)

Historical sampling at SWMU 73-004(b) focused on characterizing potential releases from the septic tank and the drainline from the septic tank. Samples collected at SWMU 73-004(b) in 2006 were stepped out from historical sampling locations and taken at greater depths than the historical samples to determine the nature and extent of inorganic and organic COPCs at the site. The inorganic COPCs exceeded background at various locations and depths across the site; therefore, the spatial distribution focuses on specific locations where an inorganic COPC was detected above background in order to determine if the extent of contamination is defined.

As described in Section B-5.1, inorganic COPCs detected at SWMU 73-004(a) are aluminum, arsenic, barium, chromium, cobalt, copper, lead, mercury, nickel, nitrate, perchlorate, selenium, silver, vanadium, and zinc. Figure 7.3.4-1 depicts the spatial distribution of inorganic COPCs at SWMU 73-004(b).

Aluminum was detected above the soil BV (29,200 mg/kg) in four samples (locations 73-10099, 73-25544, 73-25550, and 73-25552) and above the Qbt 3 BV (7,340 mg/kg) in five samples (locations 73-02211, 73-25544, 73-25551, 73-25554, and 73-25555). Aluminum concentrations decreased with depth at locations 73-10099, 73-25544, 73-25550, and 73-25552. Aluminum was detected at less than twice the maximum Qbt 3 concentration (8370 mg/kg) in the samples collected from locations 73-02211, 73-25551, 73-25554 and 73-25555; aluminum was not detected above BV in the shallower samples collected from these locations. The aluminum concentrations are bounded by the surrounding sampling locations, which did not report aluminum above background. The extent of aluminum is defined.

Arsenic was detected above the soil BV (8.17 mg/kg) in one sample in location 73-02216 and above the Qbt 3 BV (2.79 mg/kg) in seven samples (locations 73-02211, 73-25543, 73-25544, 73-25551, 73-27237, and 73-27238). The arsenic soil concentration decreased with depth at location 73-02216. All but one arsenic concentration in Qbt 3 (location 73-25544) was less than the maximum Qbt 3 background concentration (5 mg/kg). This sample was collected from 9.0 to 10.0 ft bgs and was slightly above the maximum background concentration (5.45 mg/kg compared with the maximum of 5 mg/kg). The infrequent detection of arsenic above BV primarily in the tuff and the low detected concentrations above the BV (either less than the maximum background concentration or less than 1 mg/kg above the maximum) likely reflect the natural variability of the tuff. The extent of arsenic is defined.

Barium was detected above the soil BV (295 mg/kg) in one sample (location 73-25544) and above the Qbt 3 BV (46 mg/kg) in five samples (locations 73-02211, 73-25544, 73-25551, and 73-27237). At locations 73-25544 and 73-27237, barium concentrations decreased with depth. At location 73-25551, barium was detected slightly above the maximum Qbt 3 background concentration (72.3 mg/kg compared to the maximum of 51.6 mg/kg) in the deepest sample (11.5 to 12.5 ft bgs); barium was not detected above BV in the shallower sample. At location 73-02211, the barium concentration increased slightly with depth (100 mg/kg to 130 mg/kg) and was approximately twice or slightly more than twice the maximum Qbt 3 background concentration. The detection of barium above BV primarily in tuff, and the relatively low detected concentrations above background (less than or approximately twice the maximum background concentration) likely reflect the natural variability of the tuff. The barium concentrations are bounded by

the surrounding sampling locations, which did not report barium above background. The extent of barium is defined.

Chromium was detected above the soil BV (19.3 mg/kg) in three samples (locations 73-02216, 73-25550 and 73-25552) and above the Qbt 3 BV (7.14 mg/kg) in eight samples (locations 73-02211, 73-25544, 73-25551, 73-25554, 73-25555, 73-25560, 73-27235, and 73-27236). Chromium concentrations at all but location 73-25555 were below the maximum soil background concentration (36.5 mg/kg) or the maximum Qbt 3 background concentration (13 mg/kg). Chromium was detected at less than twice the maximum Qbt 3 background concentration (24.6 mg/kg compared to 13 mg/kg) in the 3.5 to 4.5 ft bgs sample at location 73-25555 but was not detected above BV in the two shallower soil samples. The chromium concentration at this location is bounded by the surrounding sampling locations, which did not show detections of chromium above background. The extent of chromium is defined.

Cobalt was detected above the soil BV and above the maximum soil background concentration (9.5 mg/kg) in two samples (15.9 mg/kg and 247 mg/kg) (locations 73-25552 and 73-25555). Cobalt concentrations decreased with depth at both locations. Cobalt was also detected slightly above the Qbt 3 BV (3.14 mg/kg) in three samples (locations 73-02211 and 73-25551). The concentrations in two of the samples were slightly above the BV (3.2 mg/kg and 3.27 mg/kg) and less than twice the Qbt 3 BV in the other sample (5.8 mg/kg). In addition, cobalt was not detected in the shallower sample at location 73-25551. The extent of cobalt is defined.

Copper was detected above the soil BV (14.7 mg/kg) in four soil samples (locations 73-02216, 73-25543, and 73-25555) and above the Qbt 3 BV (4.66 mg/kg) in two samples (locations 73-02211 and 73-25551). Copper concentrations decreased to below background at locations 73-02216, 73-25543, and 73-25555. Copper was detected at less than twice the maximum Qbt 3 concentration (6.2 mg/kg) in the deepest samples from locations 73-02211 and 73-25551 (9.4 mg/kg and 6.6 mg/kg, respectively). Copper was not detected in the shallower samples collected at these locations. The copper concentrations are bounded by the surrounding sampling locations, which did not show detections of copper above background. The extent of copper is defined.

Lead was detected above the soil BV (22.3 mg/kg) in three samples (locations 73-02216, 73-25553, and 73-25555) and above the Qbt 3 BV (11.2 mg/kg) in six samples (locations 73-02211, 73-25540, 73-25551, and 73-27238). Lead concentrations at locations 73-02211 and 73-25551 were less than the maximum Qbt 3 background concentration (15.5 mg/kg). Lead concentrations at locations 73-02216, 73-25552, 73-25555, and 73-27238 decreased with depth. Lead was detected slightly above the maximum Qbt 3 background concentration in the deepest sample at location 73-25540 (16.4 mg/kg) and was not detected above background in the shallower samples. The extent of lead is defined.

Mercury was detected above the soil and Qbt 3 BV (0.1 mg/kg) in four soil samples and one tuff sample (locations 73-02211, 73-02216, 73-10099, 73-25542, and 73-25543). Mercury concentrations decreased with depth to below background at locations 73-02216, 73-10099, 73-25542, and 73-25543. Mercury was detected slightly above the Qbt 3 BV in the deepest sample at location 73-02211 (0.23 mg/kg), but was not detected in shallow samples. The mercury concentration is bounded by the surrounding sampling locations, which did not show detections of mercury above background. The extent of mercury is defined.

Nickel was detected above the soil BV (15.4 mg/kg) in one sample at location 73-25552, but was below the maximum soil background concentration (29 mg/kg). Nickel was detected above the Qbt 3 BV (6.58 mg/kg) in one sample at location 73-02211, but was below the maximum Qbt 3 background concentration (7 mg/kg). Nickel was also detected in one sample at location 73-25551 at 7.81 mg/kg, which is slightly above the maximum Qbt 3 background concentration. However, nickel was not detected

above background in the shallower sample at this location and is bounded by the surrounding sampling locations, which did not show detections of nickel above background. The extent of nickel is defined.

Selenium was detected above the soil and Qbt 3 BVs in 21 samples (locations 73-25540, 73-25541, 73-25542, 73-25543, 73-25544, 73-27237, and 73-27238). Selenium concentrations decreased with depth at all locations, except location 73-27238. Selenium concentrations in this location did not change with depth; concentrations ranged from 2.87 mg/kg to 2.95 mg/kg). However, the selenium concentrations at this location were lower than at locations 73-25541 and 73-25542, which are closer to the septic tank. The extent of selenium is defined.

Silver was detected above the soil BV (1.0 mg/kg) in two samples at location 73-25555. Silver concentrations decreased with depth; silver was not detected above BV in the deepest sample at this location. Silver was not detected above BV in adjacent locations 73-27235, 73-27236, and 73-25554. The extent of silver is defined.

Vanadium was detected above the soil BV (39.6 mg/kg) in two samples (locations 73-02216 and 73-25552) and above the Qbt 3 BV (17 mg/kg) in three samples (locations 73-73-02211, 73-25551, and 73-25554). Vanadium concentrations in soil were less than the maximum soil background concentration (56.5 mg/kg) and decreased with depth. The vanadium concentrations detected in tuff were either below or slightly above (0.5 mg/kg to 1.0 mg/kg) the maximum Qbt 3 background concentration (21 mg/kg) at location 73-25554 and locations 73-02211 and 73-25551, respectively. Vanadium was not detected above background in shallower samples from these locations. The extent of vanadium is defined.

Zinc was detected above the soil BV (48.8 mg/kg) in nine samples (locations 73-02216, 73-02326, 73-02327, 73-10099, 73-25550, 73-25552, 73-25553, and 73-25555) and above the Qbt 3 BV (63.5 mg/kg) in one sample (location 73-02211). Zinc concentrations decreased with depth at locations 73-02211, 73-02216, 73-10099, 73-25550, 73-25552, and 73-25555. Zinc was detected below the maximum soil background concentration (75.5 mg/kg) at locations 73-02327 and 73-25553. The zinc concentration at location 73-02326 was above the maximum soil background concentration. However, zinc was below background at adjacent sampling location 73-02327 at the same depth and was also not detected above background at location 73-25540 at similar or deeper depths. The extent of zinc is defined.

Nitrate has no BVs and was detected in soil and tuff samples collected at SWMU 73-004(b). Nitrate, which occurs naturally in soil as a result of the decomposition of organic nitrogen, was detected in 24 samples at concentrations ranging from 0.0765 mg/kg to 104 mg/kg. Nitrate concentrations decreased with depth at all but four locations (73-25541, 73-25542, 73-25553, and 73-25560). Nitrate concentrations at location 73-25560 range from 0.753 mg/kg to 0.813 mg/kg and are naturally occurring levels. Concentrations at location 73-25553 do not change substantially with depth (6.07 mg/kg to 7.12 mg/kg) and are at the outfall area; concentrations decreased down the drainage from this location. Nitrate concentrations at location 73-25542 increased from 2 to 3 ft to 3.5 to 34.5 ft (2.18 mg/kg to 6.21 mg/kg) and then decreased slightly at 6 to 8 ft (5.67 mg/kg). Nitrate concentrations at location 73-25541 increased with depth but decreased northward down the drainage. The extent of nitrate is defined.

Perchlorate has no BVs and was detected in 16 soil and tuff samples collected at SWMU 73-004(b) at concentrations ranging from 0.000532 mg/kg to 0.00702 mg/kg. Concentrations are all very low levels and showed a slight decrease with depth at most locations. At location 73-25553, perchlorate increased slightly (0.00158 mg/kg to 0.00229 mg/kg), and at location 73-25556 perchlorate was detected only at a trace level at 1.5 to 2.5 ft (0.000532 mg/kg). The extent of perchlorate is defined.

As described in section B-5.2, the only radionuclide COPC at SWMU 73-006 is tritium, which was detected in two samples (locations 77-02211 and 73-02213) at 7.2 to 7.4 ft bgs and 4.2 to 4.6 ft bgs, respectively. Tritium concentrations decreased to nondetect in the deeper samples collected at both locations and was not detected in adjacent locations. The extent of tritium is defined. Figure 7.3.4-2 depicts the spatial distribution of radionuclides at SWMU 73-004(b).

Organic COPCs at SWMU 73-004(b) included PCBs (Aroclors-1254 and -1260), pesticides (DDT, DDE, DDD, chlordane[alpha-], chlordane[gamma-], and endrin aldehyde), VOCs (acetone), and SVOCs [acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, benzoic acid, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, chrysene, di-n-butylphthalate, di-n-octylphthalate, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene]. Organic chemicals detected in samples collected at SWMU 73-004(b) are shown in Figure 7.3.4-3.

The pesticide DDT was detected in eight soil samples and one tuff sample (locations 73-02211, 73-02213, 73-02216, 73-02326, 73-02327, 73-10098, and 73-25555) at concentrations ranging from 0.00133 mg/kg to 170 mg/kg. The maximum concentration of DDT (170 mg/kg) was detected in the sample collected from the 7.2 to 7.4 ft bgs interval at location 73-02211. DDT concentrations decreased with depth at locations 73-02211, 73-02213, 73-02216, and 73-25555. DDT was also detected at location 73-10098 at a depth of 12.5 to 3.5 ft bgs at a low concentration (0.011 mg/kg) and was not detected in shallower samples. DDD was detected in six soil samples (locations 73-02213, 72-02216, 73-02326, 73-02327, and 73-025555). DDD concentrations decreased with depth at locations 73-02213, 73-02216, and 73-25555. DDE was detected in seven soil samples (locations 73-02216, 73-02326, 73-02327, 73-10098, and 73-25555). DDE concentrations decreased with depth at locations 73-02216 and 73-25555. DDT, DDD, and DDE were detected at locations 73-02326 and 73-02327 where only a single sample was collected at a depth of 14.0 to 15.0 ft bgs from beneath the septic tank. Samples collected from location 73-25540 beneath the septic tank in the same vicinity in 2006 did not show detections of DDT, DDD, or DDE down to 17 to 18 ft bgs. DDE was detected at low concentrations (0.0043 mg/kg and 0.0059 mg/kg) from 7.5 to 7.75 ft bgs and 12.5 to 13.5 ft bgs, respectively, at location 73-10098. The extent of DDT, DDE, and DDD is defined.

Chlordane[alpha-] and chlordane[gamma-] were detected in five soil samples (locations 73-02213, 73-02216, 73-02326, and 73-25555). Chlordane[alpha-] and chlordane[gamma-] concentrations decreased with depth at locations 73-02213, 73-02216, and 73-25555. Chlordane[alpha-] and chlordane[gamma-] were detected in the single soil sample collected beneath the septic tank from location 73-02326 at a depth of 14.0 to 15.0 ft bgs. Samples collected from location 73-25540 beneath the septic tank in the same vicinity in 2006 did not detect chlordane[alpha-] and chlordane[gamma-] down to 17 to 18 ft bgs. The extent of chlordane[alpha-] and chlordane[gamma-] is defined.

Endrin aldehyde was detected at a low concentration (0.00792 mg/kg) in the sample collected from 1.5 to 2.5 ft bgs at location 73-25556. It was not detected in the shallower sample from this location or in any other sample analyzed for SWMU 73-004(b). The extent of endrin aldehyde is defined.

Aroclors-1254 and -1260 were detected in two soil samples and one tuff sample (locations 73-25541, 73-25551, and 73-25554). Concentrations of Aroclors-1254 and -1260 decreased with depth at locations 73-25541 and 73-25551. Both Aroclors were detected in the 2.5- to 3.5-ft sample at location 73-25554 at low concentrations (0.0317 mg/kg and 0.0114 mg/kg, respectively) but were not detected in the shallower sample from this location. In addition, Aroclors-1254 and -1260 were not detected downslope from this location in the drainage. Aroclor-1254 was detected in the 0.0- to 1.0-ft-bgs sample at location 73-27235 (0.00157 mg/kg) but was not detected in the deeper sample or downslope of this location. Aroclor-1260 was detected in the 4.0- to 5.0-ft-bgs sample collected from location 73-27237 (0.0014 mg/kg), but was

not detected in the deeper sample or down slope of this location. The extent of Aroclors-1254 and -1260 is defined. Note: approximately 36 yd^3 of soil with elevated PCB concentrations was removed from the SWMU 74-004(b) outfall area, and six confirmation samples were collected from three locations following these removal activities. No Aroclors were detected in these confirmation samples.

SVOCs were detected in 13 samples (locations 73-02211, 73-02213, 73-02216, 73-25541, 73-25542, 73-25543, 73-25553, 73-25555, 73-25556, and 73-25560). Concentrations decreased with depth at all locations, except at location 73-25553, where three SVOCs (anthracene, fluoranthene, and pyrene) were detected at concentrations below the EQL at 3.0 to 4.0 ft bgs but were not detected in the shallower sample. In addition, location 73-25553 is at the outfall in the vicinity of location 73-02216, where SVOCs were detected at 2.2 to 2.5 ft bgs but not at 4 to 4.5 ft bgs. The extent of SVOCs is defined.

Acetone was the only VOC detected (0.025 mg/kg) at SWMU 73-004(b) in the single sample collected from 14.0 to 15.0 ft bgs at location 73-02326. Acetone was not detected at location 73-02327, which is adjacent to location 73-02326, at the same depth or at location 73-25540 down to 17 to 18 ft bgs. The extent of acetone is defined.

B-7.5 SWMU 73-006

Historical sampling at SWMU 73-006 focused on characterizing potential releases from the drainlines and an emissions stack associated with the former incinerator. Samples from SWMU 73-006 in 2006 and 2007 were collected outside the footprint of the former stack and at greater depths than the historical samples to determine the nature and extent of inorganic and organic COPCs at the site. In January 2007, soils containing elevated concentrations of lead and dioxins were removed from an area adjacent to the former incinerator emission stack foundation. Confirmation samples were collected from three locations within the excavated area. The inorganic COPCs exceeded background at various locations and depths across the site; therefore, the spatial distribution focuses on specific locations where an inorganic COPC was detected above background to determine if the extent of contamination is defined.

As described in Section B-6.1, inorganic COPCs detected at SWMU 73-006 are aluminum, barium, cadmium, copper, lead, mercury, nickel, nitrate, selenium, silver, vanadium, and zinc. Figure 7.3.5-1 depicts the spatial distribution of inorganic chemicals at SWMU 73-006.

Aluminum was detected above the soil BV (29,200 mg/kg) in one sample (location 73-25558) and above the Qbt 3 BV (7340 mg/kg) in two samples (locations 73-25558 and 73-27241). Aluminum concentrations at both locations decreased with depth. The aluminum concentrations are bounded by the surrounding sampling locations, which did not report aluminum above background. The extent of aluminum is defined.

Barium was detected above the Qbt 3 BV (46 mg/kg) in five samples (locations 73-25558, 73-25545, 73-27241, 73-02443 and 73-02442). In location 73-27241, barium was detected above BV at 0 to 0.5 ft bgs, but not at 1.75 to 2.5 ft bgs. In locations 73-25558, 73-025542, 73-02443 and 73-25545, barium was detected above BV in the deepest samples (2 to 3 ft bgs, 5 to 5.5 ft, 5 to 5.5 ft bgs, and 4 to 5 ft bgs, respectively) but was not detected above BV in the shallower samples at each location. The barium concentrations were less than twice the maximum Qbt 3 background concentration (51.6 mg/kg) at locations 73-25558, 73-025542, and 73-02443 and slightly more than twice the maximum Qbt 3 background concentration at location 73-25545. The detection of barium above BV only in tuff at only one depth in five separate boreholes but not in soil, and the relatively low detected concentrations above background (less than or approximately twice the maximum background concentration) likely reflect the natural variability of the tuff. The extent of barium is defined.

Cadmium was detected above the soil BV (0.4 mg/kg) in six samples (locations 73-25559, 73-10097, 73-25546, 73-02443, 73-02444, and 73-25547). The cadmium concentrations in five locations (all but location 73-25559) decreased with depth to below the BV in deeper samples. Only a 0- to 1-ft soil sample was collected from location 73-25559 and the concentration detected (2.92 mg/kg) is less than twice the Qbt 3 BV of 1.63 mg/kg. In addition, cadmium concentrations in nearby boreholes were below background. The extent of cadmium is defined.

Copper was detected above the soil BV (14.7 mg/kg) in six samples (locations 73-25559, 73-25546, 73-02443, 73-02444, 73-25547 and 73-02442) and above the Qbt 3 BV (4.66 mg/kg) in four samples (locations 73-25558, 73-27241, 73-02442, and 73-02443). The copper concentrations at six locations (all but locations 73-25558 and 73-25559) decreased with depth. At location 73-25558, copper was detected at 6.02 mg/kg from 2 to 3 ft, which is below the maximum Qbt 3 background concentration (6.2 mg/kg). Only a 0- to1-ft soil sample was collected from location 73-25559 and the concentration of copper detected was 56.4 mg/kg. The copper concentration at location 73-25559 is bounded by surrounding locations (within 20 ft or less of location 73-25559) with copper concentrations below background in deeper samples. The extent of copper is defined.

Lead was detected above the soil BV in seven soil samples (locations 73-25558, 73-25559, 73-10097, 73-25546, 73-02443, 73-02444, and 73-25547) and above the Qbt 3 BV in five samples (locations 73-25558, 73-27240, 73-27241, 73-02443, and 73-02442). Lead concentrations decreased with depth at locations 73-25547, 73-02444, 73-0443, 73-27241, and 73-10097. The lead concentration at 5-5.5 ft bgs from location 73-02442 (12 mg/kg) is less than the maximum Qbt 3 background concentration (15.5 mg/kg). The lead concentration at location 73-25558 decreased from 714 mg/kg at 0 to 1 ft bgs in a sample that was excavated (sample ID RE73-06-67623) to 173 mg/kg at 2-3 ft bgs. The lead concentration detected at location 73-25559 from 0-1 ft (99.3 mg/kg) is bounded by lower concentrations at deeper depths at surrounding sampling locations within 20 ft or less. The lead concentration from 2 to 2.5 ft at location 73-27240 was 48.6 mg/kg and was not detected above background in the 0 to 0.5 ft sample. Across the SWMU, all of the samples analyzed for inorganic chemicals did not detect lead at higher concentrations below 3 ft and showed a decrease in lead concentrations with depth. The extent of lead is defined.

Mercury was detected above the soil BV (0.1 mg/kg) in four soil samples (locations 73-02442, 73-02443, 73-02444, and 73-25547) and above the Qbt 3 BV (0.1 mg/kg) in one sample (location 73-02443). All of the locations are along the west drainline. Mercury concentrations decreased with depth at all four locations and decreased with distance from the incinerator building. The extent of mercury is defined.

Nickel was detected above the soil BV (15.4 mg/kg) on one sample (location 73-02444) and above the Qbt 3 BV (6.58 mg/kg) in one sample (location 73-25545). The nickel concentration decreased with depth at location 73-02444. Nickel was detected in the deepest sample (4 to 5 ft) at location 73-15545 but was not detected above BV in the shallower sample. The nickel concentration (10.3 mg/kg) is slightly above the maximum Qbt 3 background concentration (7 mg/kg) and likely reflects the natural variability of the tuff. The extent of nickel is defined.

Selenium was detected above the soil BV (1.52 mg/kg) on one sample (location 73-25545) and decreased with depth at this location. Selenium was also detected above the Qbt 3 BV (0.3 mg/kg) in two samples (locations 73-25558 and 73-25546); both samples were the deepest ones collected at these locations. Selenium was not detected above background in the shallower samples at either location. The selenium concentration from 2 to 3 ft at location 73-25558 is less than 3 times the BV, and the concentration from 4 to 5 ft at location 73-25546 is more than an order of magnitude above the BV. However, location 73-10096, just a few feet from location 73-25546, did not show detections of selenium or any other inorganic chemical above background at 4.3 to 4.8 ft. The extent of selenium is defined.

Silver was detected above the soil BV (1.0 mg/kg) in six samples (locations 73-25559, 73-25545, 73-25546, 73-02443, 73-02444, and 73-25547). The silver concentrations at five locations (all but location 73-25559) decreased with depth. Only a 0- to 1-ft soil sample was collected from location 73-25559 and the concentration of silver detected (9.08 mg/kg) is more than twice the maximum soil BV of 1.0 mg/kg. However, silver was not detected above background at deeper depths at surrounding sampling locations within 20 ft or less. The extent of silver is defined.

Vanadium was detected above the soil BV (39.6 mg/kg) in one sample and above the Qbt 3 BV (17 mg/kg) in one sample at location 73-25558. The vanadium concentration decreased with depth at this location. The extent of vanadium is defined.

Zinc was detected above the soil BV (48.8 mg/kg) in eight samples (locations 73-25558, 73-25559, 73-10097, 73-25546, 73-02443, 73-02444, 73-25547, and 73-02442) and above the Qbt BV (63.5 mg/kg) in one sample (location 73-25558). The zinc concentrations in seven locations (all but location 73-25559) decreased with depth; at location 73-25558 zinc was originally detected at 254 mg/kg in sample from 0 to 1 ft that was excavated (sample ID RE73-06-67623). Only a 0- to 1-ft soil sample was collected from location 73-25559 at a concentration 303 mg/kg, which is similar to the original zinc concentration from 0 to 1 ft at location 73-25558. Zinc was detected at lower concentrations at deeper depths at surrounding sampling locations within 20 ft or less. The extent of zinc is defined.

Nitrate has no BVs and was detected in soil and tuff samples collected at SWMU 73-006. Nitrate, which occurs naturally in soil as a result of the decomposition of organic nitrogen, was detected in five samples at concentrations ranging from 0.824 mg/kg to 1.65 mg/kg. The nitrate concentrations likely reflect natural levels and the extent of nitrate is defined.

As described in Section B-6.2, the only radionuclide COPC at SWMU 73-006 is plutonium-239, which was detected in one sample (location 73-02443) at 5 to 5.5 ft. Plutonium-239 was not detected in the shallower sample at this location or at adjacent location 73-25547 at 3 to 5 ft and 5.5 to 7.5 ft. The extent of plutonium-239 is defined. Figure 7.3.5-2 depicts the spatial distribution of radionuclides at SWMU 73-006.

Organic COPCs at SWMU 73-006 included dioxins and furans, PCBs (Aroclor-1260), pesticides (DDT, DDE, and DDD), VOCs (4-isopropyltoluene and 1,1,2-trichloro-1,2,2-trifluoroethane), and SVOCs [acenaphthene; anthracene; benzo(a)anthracene; benzo(a)pyrene; benzo(b)fluoranthene; benzo(g,h,i)perylene; benzo(k)fluoranthene; bis(2-ethylhxyl)phthalate; chrysene; diethylphthalate; fluoranthene; fluorene; indeno(1,2,3-cd)pyrene; 2-methylnaphthalene; naphthalene; phenanthrene; and pyrene]. Organic chemicals detected in samples collected at SWMU 73-006 are shown in Figure 7.3.5-3.

DDT was detected in four soil samples and two tuff samples (locations 73-02442, 73-25547, 73-02444, 73-02443, and 73-10096) at low concentrations (0.0041 mg/kg to 0.23 mg/kg). DDT concentrations decreased with depth at all locations. DDE was detected in two samples at location 73-02442 and the concentrations decreased with depth. DDD was detected in two soil samples (locations 73-02442 and 73-02444) and the concentrations decreased with depth at both locations. Detections along the west drainline (locations 73-02442, 73-02443, 73-02444, and 73-25547) are bounded by SWMU 73-004(a) to the west. Detections along the eastern drainline (location 73-10096) are bounded by nondetects at location 73-25545. The extent of DDT, DDE, and DDD is defined.

Aroclor-1260 was detected in only the 0- to 1-ft sample from location 73-25559 at a low concentration (0.0414 mg/kg). Aroclor-1260 was not detected in the original sample collected from 0 to 1 ft (sample ID RE73-06-67623) at location 73-25558 (less than 15 ft to the west), which was excavated, or in other samples analyzed for PCBs (Table B-1.0-5). The extent of Aroclor-1260 is defined.

SVOCs were detected in seven samples (locations 73-25545, 73-25559, 73-25546, 73-02443, 73-02444, 73-25547 and 73-02442). Concentrations decreased with depth at all location, except at location 73-25559 where only a 0- to 1-ft sample was collected. Similar SVOCs at similar concentrations were detected in the original sample from 0 to 1 ft (sample ID RE73-06-67623) at location 73-25558, which was excavated. SVOC concentrations at this location are bounded by surrounding sampling locations (73-27240 and 73-27241), which did not detect any SVOCs. The extent of SVOCs is defined.

Isopropyltoluene[4-] was detected in one soil sample at location 73-10096 but was not detected in the deeper sample. Trichloro-1,2,2-trifluoroethane[1,1,2-] was detected in two samples at locations 73-02442 and 73-02443 at the same low concentration (0.002 mg/kg) and was not detected in deeper samples at these locations. The extent of isopropyltoluene[4-] and trichloro-1,2,2-trifluoroethane[1,1,2-] is defined.

Dioxin and furan congeners were detected in 12 samples from eight locations (73-02444, 73-02443, 73-27241, 73-27240, 73-25547, 73-25559, 73-25545, and 73-25546). TCDD TEQ concentrations decreased with depth at all locations, except at location 73-25559, where only a 0- to 1-ft sample was collected. The TCDD TEQ concentration at location 73-25559 is bounded on the surface and at depth by the surrounding sampling locations, which reported lower concentrations. The extent of dioxins and furans is defined.

B-8.0 REFERENCES

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

Copies of the master reference set are maintained at the New Mexico Environment Department–Hazardous Waste Bureau; the U.S. Department of Energy–Los Alamos Site Office; the U.S. Environmental Protection Agency, Region 6; and the Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.

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LANL (Los Alamos National Laboratory), December 2005. "Los Alamos and Pueblo Canyons Supplemental Investigation Report," Los Alamos National Laboratory document LA-UR-05-9230, Los Alamos, New Mexico. (LANL 2005, 091818)

Table B-2.1-1
Frequency of Inorganic Chemicals above BVs at SWMU 73-002

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)[a]	BV (mg/kg)[b]	Frequency of Detects above BV	Frequency of Nondetects above BV
Aluminum	Soil	65	65	1030 to 21300	29200	0/65	0/65
Aluminum	Qbt 3	95	95	366 to 13600	7340	3/95	0/95
Antimony	Soil	65	25	0.082 to [12]	0.83	0/65	3/65
Antimony	Qbt 3	86	38	0.061 to 0.486	0.5	0/86	0/86
Arsenic	Soil	72	72	0.37 to 13.2	8.17	1/72	0/72
Arsenic	Qbt 3	95	87	[0.21] to 5.81	2.79	4/95	0/95
Barium	Soil	72	72	6.55 to 221	295	0/72	0/72
Barium	Qbt 3	95	95	3.5 to 164	46	12/95	0/95
Beryllium	Soil	65	62	0.18 to 1.51	1.83	0/65	0/65
Beryllium	Qbt 3	95	95	0.21 to 0.925	1.21	0/95	0/95
Cadmium	Soil	72	37	0.033 to 5.8	0.4	5/72	30/72
Cadmium	Qbt 3	95	63	0.019 to [0.551]	1.63	0/95	0/95
Calcium	Soil	65	65	43.4 to 6140	6120	1/65	0/65
Calcium	Qbt 3	95	95	135 to 6070	2200	3/95	0/95
Chromium	Soil	72	70	1.5 to 19.8	19.3	1/72	0/72
Chromium	Qbt 3	95	57	[0.581] to 58.6	7.14	8/95	0/95
Cobalt	Soil	72	71	0.221 to 4.67	8.64	0/72	0/72
Cobalt	Qbt 3	95	82	0.206 to 2.49	3.14	0/95	0/95
Copper	Soil	70	67	1.63 to 50.4	14.7	6/70	0/70
Copper	Qbt 3	93	83	0.765 to 27.8	4.66	16/93	0/93
Cyanide (Total)	Soil	38	14	0.0957 to 0.334	0.5	0/38	0/38
Cyanide (Total)	Qbt 3	39	9	0.0805 to 0.757	0.5	1/39	4/39
Iron	Soil	65	65	4400 to 17700	21500	0/65	0/65
Iron	Qbt 3	95	95	3470 to 19300	14500	2/95	0/95
Lead	Soil	68	68	3.24 to 232	22.3	26/68	0/68
Lead	Qbt 3	86	86	1.63 to 124	11.2	20/86	0/86
Magnesium	Soil	65	65	228 to 3840	4610	0/65	0/65
Magnesium	Qbt 3	95	95	107 to 1790	1690	1/95	0/95
Manganese	Soil	66	66	82.8 to 668	671	0/66	0/66
Manganese	Qbt 3	95	95	69.5 to 482	482	0/95	0/95
Mercury	Soil	72	63	0.0038 to 0.345	0.1	2/72	2/72
Mercury	Qbt 3	95	75	0.0031 to 0.071	0.1	0/95	0/95
Nickel	Soil	72	72	0.636 to 81.6	15.4	1/72	0/72
Nickel	Qbt 3	95	89	0.52 to 10.3	6.58	1/95	0/95
Nitrate	Soil	34	27	0.766 to 9.35	na[c]	27/34	n/a[d]

Table B-2.1-1 (continued)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)[a]	BV (mg/kg)[b]	Frequency of Detects above BV	Frequency of Nondetects above BV
Perchlorate	Soil	56	7	0.000548 to 0.0075	na	7/56	n/a
Perchlorate	Qbt 3	95	6	0.000569 to [0.0059]	na	6/95	n/a
Potassium	Soil	65	65	150 to 3670	3460	1/65	0/65
Potassium	Qbt 3	95	95	121 to 1800	3500	0/95	0/95
Selenium	Soil	65	23	0.15 to [1.91]	1.52	0/65	21/65
Selenium	Qbt 3	95	45	0.15 to 1.08	0.3	31/95	50/95
Silver	Soil	69	53	0.0427 to 9.22	1	15/69	3/69
Silver	Qbt 3	86	77	0.023 to 5.89	1	7/86	0/86
Sodium	Soil	65	61	43 to 969	915	1/65	0/65
Sodium	Qbt 3	95	86	39.7 to 584	2770	0/95	0/95
Thallium	Soil	72	27	0.0947 to [1.5]	0.73	2/72	3/72
Thallium	Qbt 3	95	5	0.0911 to [0.23]	1.1	0/95	0/95
Uranium	Soil	2	2	0.763 to 3.22	1.82	1/2	0/2
Uranium	Qbt 3	6	6	0.632 to 1.47	2.4	0/6	0/6
Vanadium	Soil	65	65	2.2 to 26.2	39.6	0/65	0/65
Vanadium	Qbt 3	95	92	[0.54] to 13.9	17	0/95	0/95
Zinc	Soil	65	65	26.6 to 470	48.8	29/65	0/65
Zinc	Qbt 3	95	95	19.6 to 97.1	63.5	7/95	0/95

[a] Values in brackets indicate detection limits for nondetects.

[b] BVs from LANL 1998, 059730.

[c] na = Not available.

[d] n/a = Not applicable.

Table B-2.2-1
Frequency of Radionuclides Detected or Detected above BVs/FVs at SWMU 73-002

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (pCi/g)[a]	BV/FV (pCi/g)[b]	Frequency of Detects above BV/FV
Americium-241	Soil	60	8	[-0.0163] to 0.303	0.013	8/60
Americium-241	Qbt 3	84	1	[-0.0271 to 0.0493]	na[c]	1/84
Cesium-134	Soil	14	0	[-0.053 to 0.128]	na	0/14
Cesium-134	Qbt 3	12	0	[-0.057 to 0.058]	na	0/12
Cesium-137	Soil	42	29	[0.0145] to 5.43	1.65	10/42
Cesium-137	Qbt 3	12	0	[-0.023 to 0.027]	na	0/12
Cobalt-60	Soil	41	0	[-0.0378 to 0.0392]	na	0/41
Cobalt-60	Qbt 3	12	0	[-0.034 to 0.047]	na	0/12
Europium-152	Soil	42	0	[-0.115 to 0.15]	na	0/42
Europium-152	Qbt 3	12	0	[0 to 0.23]	na	0/12
Gross alpha	Soil	3	3	0.66 to 3.55	na	3/3
Gross beta	Soil	3	3	1.04 to 4.33	na	3/3
Plutonium-238	Soil	61	4	[-0.0284] to 0.0514	0.023	3/61
Plutonium-238	Qbt 3	85	0	[-0.0237 to 0.036]	na	0/85
Plutonium-239	Soil	61	45	[-0.0196] to 5.03	0.054	40/61
Plutonium-239	Qbt 3	89	7	[-0.0234] to 0.0902	na	7/89
Ruthenium-106	Soil	42	0	[-0.292 to 0.419]	na	0/42
Ruthenium-106	Qbt 3	12	0	[-0.2 to 0.25]	na	0/12
Sodium-22	Soil	41	0	[-0.0554 to 0.039]	na	0/41
Sodium-22	Qbt 3	12	0	[-0.033 to 0.005]	na	0/12
Strontium-90	Soil	25	5	[-0.258] to 0.371	1.31	2/25
Strontium-90	Qbt 3	86	3	[-0.18] to 0.398	na	3/86
Tritium	Soil	3	2	[0.025] to 0.064	na	2/3
Uranium-234	Soil	62	62	0.786 to 4.56	2.59	4/62
Uranium-234	Qbt 3	94	94	0.313 to 2.05	1.98	1/94
Uranium-235	Soil	62	50	[0.0181] to 0.315	0.2	1/62
Uranium-235	Qbt 3	94	65	[0.0095] to 0.124	0.09	12/94
Uranium-238	Soil	62	62	0.865 to 3.66	2.29	7/62
Uranium-238	Qbt 3	94	94	0.298 to 1.83	1.93	0/94

[a] Values in brackets indicate detection limits for nondetects.

[b] BVs/FVs from LANL 1998, 059730. FVs apply to surface samples only (i.e., 0–6 in., 0–1 ft); all activities detected in deeper samples are reported.

[c] na = Not available.

Table B-2.3-1
Frequency of Organic Chemicals Detected at SWMU 73-002

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)*	Frequency of Detects
Acenaphthene	Soil	60	1	[0.0354 to 0.39]	1/60
Anthracene	Soil	60	5	0.00824 to [0.39]	5/60
Anthracene	Qbt 3	94	1	0.00882 to [0.39]	1/94
Aroclor-1242	Soil	59	2	[0.00354] to [0.0721]	2/59
Aroclor-1242	Qbt 3	94	1	0.0025 to [0.039]	1/94
Aroclor-1254	Soil	59	17	[0.00354] to 0.173	17/59
Aroclor-1254	Qbt 3	94	2	0.002 to [0.039]	2/94
Aroclor-1260	Soil	59	13	0.0019 to 0.073	13/59
Benzo(a)anthracene	Soil	60	4	[0.0134 to 0.39]	4/60
Benzo(a)anthracene	Qbt 3	94	3	0.0271 to [0.39]	3/94
Benzo(a)pyrene	Soil	60	12	[0.0148] to [0.39]	12/60
Benzo(a)pyrene	Qbt 3	94	2	0.0292 to [0.39]	2/94
Benzo(b)fluoranthene	Soil	60	14	[0.021] to 0.693	14/60
Benzo(b)fluoranthene	Qbt 3	94	2	[0.0336] to [0.39]	2/94
Benzo(g,h,i)perylene	Soil	60	8	[0.0162] to [0.39]	8/60
Benzo(k)fluoranthene	Soil	59	5	0.0138 to [0.39]	5/59
Benzoic Acid	Soil	60	9	0.043 to [3.05]	9/60
Benzoic Acid	Qbt 3	94	2	0.461 to [1.9]	2/94
Bis(2-ethylhexyl)phthalate	Soil	60	1	0.0939 to [0.763]	1/60
Bis(2-ethylhexyl)phthalate	Qbt 3	94	3	0.056 to [0.39]	3/94
Chlordane[alpha-]	Soil	59	7	0.000365 to [0.019]	7/59
Chlordane[gamma-]	Soil	59	6	0.000283 to [0.019]	6/59
Chloroform	Soil	37	1	0.000228 to [0.00666]	1/37
Chrysene	Soil	60	15	[0.0132] to 0.392	15/60
Chrysene	Qbt 3	94	3	0.0272 to [0.39]	3/94
DDD[4,4'-]	Soil	59	3	0.00105 to [0.0305]	3/59
DDD[4,4'-]	Qbt 3	94	3	[0.00134] to [0.0139]	3/94
DDE[4,4'-]	Soil	59	21	0.00041 to 0.0431	21/59
DDE[4,4'-]	Qbt 3	94	13	0.000416 to 0.068	13/94
DDT[4,4'-]	Soil	59	22	0.000928 to 0.34	22/59
DDT[4,4'-]	Qbt 3	94	15	0.000722 to 0.11	15/94
Dieldrin	Soil	59	1	0.00109 to [0.0305]	1/59
Di-n-butylphthalate	Soil	60	5	[0.048 to 1.53]	5/60
Di-n-butylphthalate	Qbt 3	94	23	0.0361 to [0.39]	23/94
Dinitro-2-methylphenol[4,6-]	Qbt 3	94	1	[0.336] to [1.9]	1/94
Di-n-octylphthalate	Soil	60	1	[0.17 to 1.53]	1/60

Table B-2.3-1 (continued)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)*	Frequency of Detects
Fluoranthene	Soil	60	33	0.0114 to 1.36	33/60
Fluoranthene	Qbt 3	94	3	[0.0336] to [0.39]	3/94
Fluorene	Soil	60	1	0.0342 to [0.39]	1/60
Heptachlorodibenzodioxin[1,2,3,4,6,7,8-]	Soil	58	51	[1.38E-07] to 0.000158	51/58
Heptachlorodibenzodioxin[1,2,3,4,6,7,8-]	Qbt 3	94	60	[5.54E-08] to [0.000275]	60/94
Heptachlorodibenzodioxins (Total)	Soil	57	51	[1.38E-07] to 0.000283	51/57
Heptachlorodibenzodioxins (Total)	Qbt 3	94	69	6.59E-08 to 0.0000587	69/94
Heptachlorodibenzofuran[1,2,3,4,6,7,8-]	Soil	58	48	[6.56E-08] to 0.000032	48/58
Heptachlorodibenzofuran[1,2,3,4,6,7,8-]	Qbt 3	94	36	[3.5E-08] to 9.33E-06	36/94
Heptachlorodibenzofuran[1,2,3,4,7,8,9-]	Soil	58	12	[4.54E-08] to 2.23E-06	12/58
Heptachlorodibenzofuran[1,2,3,4,7,8,9-]	Qbt 3	94	9	[3.66E-08] to [8.4E-07]	9/94
Heptachlorodibenzofurans (Total)	Soil	57	50	[6.43E-08] to 0.000058	50/57
Heptachlorodibenzofurans (Total)	Qbt 3	94	40	[3.57E-08] to 0.0000193	40/94
Hexachlorodibenzodioxin[1,2,3,4,7,8-]	Soil	58	22	[7.51E-08] to 2.56E-06	22/58
Hexachlorodibenzodioxin[1,2,3,4,7,8-]	Qbt 3	94	8	[6.47E-08] to 7.81E-07	8/94
Hexachlorodibenzodioxin[1,2,3,6,7,8-]	Soil	58	31	[7.72E-08] to 5.09E-06	31/58
Hexachlorodibenzodioxin[1,2,3,6,7,8-]	Qbt 3	94	16	[7.16E-08] to 0.0000017	16/94
Hexachlorodibenzodioxin[1,2,3,7,8,9-]	Soil	58	30	[7.38E-08] to 4.48E-06	30/58
Hexachlorodibenzodioxin[1,2,3,7,8,9-]	Qbt 3	94	13	[6.64E-08] to 1.53E-06	13/94
Hexachlorodibenzodioxins (Total)	Soil	57	49	[1.4E-07] to 0.0000536	49/57
Hexachlorodibenzodioxins (Total)	Qbt 3	94	30	[6.75E-08] to 0.0000139	30/94
Hexachlorodibenzofuran[1,2,3,4,7,8-]	Soil	58	28	[4.06E-08] to 5.12E-06	28/58
Hexachlorodibenzofuran[1,2,3,4,7,8-]	Qbt 3	94	16	[2.2E-08] to 1.47E-06	16/94
Hexachlorodibenzofuran[1,2,3,6,7,8-]	Soil	58	30	[4.01E-08] to 4.86E-06	30/58
Hexachlorodibenzofuran[1,2,3,6,7,8-]	Qbt 3	94	17	[2.15E-08] to 1.45E-06	17/94
Hexachlorodibenzofuran[1,2,3,7,8,9-]	Soil	58	4	[5.12E-08] to 1.26E-06	4/58
Hexachlorodibenzofuran[1,2,3,7,8,9-]	Qbt 3	94	4	[3.16E-08] to 3.67E-07	4/94
Hexachlorodibenzofuran[2,3,4,6,7,8-]	Soil	58	32	[4.45E-08] to 7.14E-06	32/58
Hexachlorodibenzofuran[2,3,4,6,7,8-]	Qbt 3	94	16	[2.32E-08] to 0.0000015	16/94
Hexachlorodibenzofurans (Total)	Soil	57	51	[4.6E-08] to 0.0000576	51/57
Hexachlorodibenzofurans (Total)	Qbt 3	94	40	[2.42E-08] to 0.000014	40/94
Indeno(1,2,3-cd)pyrene	Soil	60	7	[0.0139] to [0.39]	7/60
Methylnaphthalene[2-]	Soil	60	2	0.00741 to [0.39]	2/60
Methylnaphthalene[2-]	Qbt 3	94	2	0.011 to [0.39]	2/94
Naphthalene	Qbt 3	94	1	0.0242 to [0.39]	1/94
Octachlorodibenzodioxin[1,2,3,4,6,7,8,9-]	Soil	58	52	[4.74E-07] to 0.000833	52/58
Octachlorodibenzodioxin[1,2,3,4,6,7,8,9-]	Qbt 3	94	73	[1.81E-07] to 0.000167	73/94

Table B-2.3-1 (continued)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)*	Frequency of Detects
Octachlorodibenzofuran[1,2,3,4,6,7,8,9-]	Soil	58	48	[3.07E-07] to 0.0000378	48/58
Octachlorodibenzofuran[1,2,3,4,6,7,8,9-]	Qbt 3	94	31	[9.41E-08] to 0.0000138	31/94
Pentachlorodibenzodioxin[1,2,3,7,8-]	Soil	58	21	[6.87E-08] to 2.44E-06	21/58
Pentachlorodibenzodioxin[1,2,3,7,8-]	Qbt 3	94	11	[6E-08] to 7.03E-07	11/94
Pentachlorodibenzodioxins (Total)	Soil	57	37	[6.87E-08] to 0.0000286	37/57
Pentachlorodibenzodioxins (Total)	Qbt 3	94	19	[7E-08] to 6.63E-06	19/94
Pentachlorodibenzofuran[1,2,3,7,8-]	Soil	58	23	[1.04E-07] to 3.83E-06	23/58
Pentachlorodibenzofuran[1,2,3,7,8-]	Qbt 3	94	15	[7E-08] to 3.19E-06	15/94
Pentachlorodibenzofuran[2,3,4,7,8-]	Soil	58	38	1.4E-07 to 0.0000101	38/58
Pentachlorodibenzofuran[2,3,4,7,8-]	Qbt 3	94	19	[7E-08] to 0.0000045	19/94
Pentachlorodibenzofurans (Totals)	Soil	57	46	[1.5E-07] to 0.000109	46/57
Pentachlorodibenzofurans (Totals)	Qbt 3	94	34	[5.03E-08] to 0.0000444	34/94
Phenanthrene	Soil	60	24	0.0138 to [0.39]	24/60
Phenanthrene	Qbt 3	94	3	0.0154 to [0.39]	3/94
Pyrene	Soil	60	30	0.0123 to 0.543	30/60
Pyrene	Qbt 3	94	3	[0.0336 to 0.39]	3/94
Tetrachlorodibenzodioxin[2,3,7,8-]	Soil	63	7	[5.82E-08] to [0.0000011]	7/63
Tetrachlorodibenzodioxin[2,3,7,8-]	Qbt 3	94	2	[4.74E-08 to 1.61E-06]	2/94
Tetrachlorodibenzodioxins (Total)	Soil	57	38	[8E-08] to 0.0000219	38/57
Tetrachlorodibenzodioxins (Total)	Qbt 3	94	24	[4.74E-08] to 9.87E-06	24/94
Tetrachlorodibenzofuran[2,3,7,8-]	Soil	63	39	[1.13E-07] to 5.93E-06	39/63
Tetrachlorodibenzofuran[2,3,7,8-]	Qbt 3	94	29	[4.81E-08] to 0.0000105	29/94
Tetrachlorodibenzofurans (Total)	Soil	51	45	[1.52E-07] to 0.000188	45/51
Tetrachlorodibenzofurans (Total)	Qbt 3	49	21	[6E-08] to 0.000184	21/49
Tetrachlorodibenzofurans (Totals)	Soil	6	5	[1.13E-07] to 0.0000872	5/6
Tetrachlorodibenzofurans (Totals)	Qbt 3	45	21	[4.81E-08] to 0.00002	21/45

*Values in brackets indicate detection limits for nondetects.

Table B-3.1-1
Frequency of Inorganic Chemicals above BVs at AOC 73-003

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)[a]	BV (mg/kg)[b]	Frequency of Detects above BV	Frequency of Nondetects above BV
Aluminum	Soil	4	4	9300 to 18800	29200	0/4	0/4
Aluminum	Fill	10	10	7700 to 30400	29200	1/10	0/10
Aluminum	Qbt 3	14	14	528 to 18000	7340	3/14	0/14
Antimony	Fill	3	3	0.11 to 0.15	0.83	0/3	0/3
Arsenic	Soil	4	4	3 to 5.8	8.17	0/4	0/4
Arsenic	Fill	10	4	2.9 to 7.9	8.17	0/10	0/10
Arsenic	Qbt 3	14	6	[1.63] to 6.22	2.79	5/14	1/14
Barium	Soil	4	4	80 to 218	295	0/4	0/4
Barium	Fill	10	10	61.6 to 240	295	0/10	0/10
Barium	Qbt 3	14	14	8.29 to 120	46	4/14	0/14
Beryllium	Soil	4	4	0.54 to 0.953	1.83	0/4	0/4
Beryllium	Fill	10	10	0.476 to 1.16	1.83	0/10	0/10
Beryllium	Qbt 3	14	14	0.164 to 1.1	1.21	0/14	0/14
Cadmium	Soil	4	2	0.05 to [2.85]	0.4	0/4	2/4
Cadmium	Fill	10	4	0.04 to [0.592]	0.4	0/10	6/10
Cadmium	Qbt 3	14	1	0.05 to [3.07]	1.63	0/14	2/14
Calcium	Soil	4	4	2060 to 6000	6120	0/4	0/4
Calcium	Fill	10	10	1600 to 8480	6120	2/10	0/10
Calcium	Qbt 3	14	14	186 to 3390	2200	3/14	0/14
Chromium	Soil	4	4	6.2 to 13.8	19.3	0/4	0/4
Chromium	Fill	10	10	4.9 to 16	19.3	0/10	0/10
Chromium	Qbt 3	14	8	[0.259] to 10	7.14	2/14	0/14
Cobalt	Soil	4	4	5.3 to 9.67	8.64	1/4	0/4
Cobalt	Fill	10	10	1.7 to 9.8	8.64	1/10	0/10
Cobalt	Qbt 3	14	14	0.277 to 3	3.14	0/14	0/14
Copper	Soil	4	4	3.5 to 9.8	14.7	0/4	0/4
Copper	Fill	10	9	3.3 to 9.6	14.7	0/10	0/10
Copper	Qbt 3	14	14	0.786 to 5.3	4.66	1/14	0/14
Cyanide (Total)	Soil	1	1	0.398	0.5	0/1	0/1
Cyanide (Total)	Fill	6	0	[0.275 to 0.301]	0.5	0/6	0/6
Cyanide (Total)	Qbt 3	11	0	[0.262 to 0.318]	0.5	0/11	0/11
Iron	Soil	4	4	11000 to 15700	21500	0/4	0/4
Iron	Fill	10	10	10400 to 21000	21500	0/10	0/10
Iron	Qbt 3	14	14	4670 to 17000	14500	1/14	0/14
Lead	Soil	4	4	8.7 to 88	22.3	1/4	0/4

Table B-3.1-1 (continued)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)[a]	BV (mg/kg)[b]	Frequency of Detects above BV	Frequency of Nondetects above BV
Lead	Fill	10	10	7.5 to 130	22.3	2/10	0/10
Lead	Qbt 3	14	14	2.09 to 23.4	11.2	2/14	0/14
Magnesium	Soil	4	4	1600 to 3420	4610	0/4	0/4
Magnesium	Fill	10	10	1300 to 3980	4610	0/10	0/10
Magnesium	Qbt 3	14	14	136 to 3100	1690	4/14	0/14
Manganese	Soil	4	4	280 to 1050	671	1/4	0/4
Manganese	Fill	10	10	160 to 550	671	0/10	0/10
Manganese	Qbt 3	14	14	49.7 to 971	482	1/14	0/14
Mercury	Soil	4	4	0.0236 to 0.04	0.1	0/4	0/4
Mercury	Fill	10	10	0.0114 to 0.05	0.1	0/10	0/10
Mercury	Qbt 3	14	11	0.0037 to 0.0603	0.1	0/14	0/14
Nickel	Soil	4	4	4.3 to 9.37	15.4	0/4	0/4
Nickel	Fill	10	10	3.5 to 9.85	15.4	0/10	0/10
Nickel	Qbt 3	14	14	0.757 to 6.7	6.58	1/14	0/14
Nitrate	Soil	1	1	3.31	na[c]	1/1	n/a[d]
Nitrate	Fill	6	6	2.77 to 14.7	na	6/6	n/a
Nitrate	Qbt 3	11	11	1.93 to 18	na	11/11	n/a
Perchlorate	Soil	1	0	[0.00231]	na	0/1	n/a
Perchlorate	Fill	6	1	0.00061 to [0.00243]	na	1/6	n/a
Perchlorate	Qbt 3	11	0	[0.0022 to 0.00254]	na	0/11	n/a
Potassium	Soil	4	4	990 to 2260	3460	0/4	0/4
Potassium	Fill	10	10	810 to 2890	3460	0/10	0/10
Potassium	Qbt 3	14	14	228 to 2150	3500	0/14	0/14
Selenium	Soil	4	2	[0.44] to 6.79	1.52	2/4	0/4
Selenium	Fill	10	9	0.11 to 33.2	1.52	6/10	0/10
Selenium	Qbt 3	14	14	0.09 to 23.3	0.3	13/14	0/14
Silver	Soil	4	2	0.108 to [0.59]	1	0/4	0/4
Silver	Fill	10	5	0.0634 to [0.57]	1	0/10	0/10
Silver	Qbt 3	14	5	0.0536 to [0.58]	1	0/14	0/14
Sodium	Soil	4	4	130 to 220	915	0/4	0/4
Sodium	Fill	10	10	142 to 259	915	0/10	0/10
Sodium	Qbt 3	14	14	130 to 406	2770	0/14	0/14
Thallium	Soil	4	4	0.22 to 0.252	0.73	0/4	0/4
Thallium	Fill	10	10	0.119 to 0.32	0.73	0/10	0/10
Thallium	Qbt 3	14	5	0.104 to 0.27	1.1	0/14	0/14
Vanadium	Soil	4	4	12 to 32.5	39.6	0/4	0/4

Table B-3.1-1 (continued)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)[a]	BV (mg/kg)[b]	Frequency of Detects above BV	Frequency of Nondetects above BV
Vanadium	Fill	10	10	9.3 to 37	39.6	0/10	0/10
Vanadium	Qbt 3	14	14	1.51 to 18	17	1/14	0/14
Zinc	Soil	4	4	28.8 to 35	48.8	0/4	0/4
Zinc	Fill	10	10	32.7 to 50	48.8	1/10	0/10
Zinc	Qbt 3	14	14	13.4 to 79.7	63.5	1/14	0/14

[a] Values in brackets indicate detection limits for nondetects.

[b] BVs from LANL 1998, 059730.

[c] na = Not available.

[d] n/a = Not applicable.

Table B-3.2-1
Frequency of Radionuclides Detected or Detected above BVs/FVs at AOC 73-003

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (pCi/g)[a]	BV/FV (pCi/g)[b]	Frequency of Detects above BV/FV
Americium-241	Soil	2	0	[-0.000149 to 0.018]	0.013	0/2
Americium-241	Fill	6	0	[-0.0748 to 0.185]	0.013	0/6
Americium-241	Qbt 3	12	0	[-0.221 to 0.103]	na[c]	0/12
Cesium-134	Soil	2	0	[0.0924 to 0.102]	na	0/2
Cesium-134	Fill	1	0	[0.0845]	na	0/1
Cesium-134	Qbt 3	5	0	[-0.0234 to 0.135]	na	0/5
Cesium-137	Soil	2	0	[-0.0419 to 0.0165]	1.65	0/2
Cesium-137	Fill	5	0	[-0.0414 to 0.0119]	1.65	0/5
Cesium-137	Qbt 3	12	0	[-0.0292 to 0.137]	na	0/12
Cobalt-60	Soil	2	0	[-0.0178 to -0.00389]	na	0/2
Cobalt-60	Fill	6	0	[-0.0155 to 0.0567]	na	0/6
Cobalt-60	Qbt 3	12	0	[-0.0201 to 0.0277]	na	0/12
Europium-152	Soil	2	0	[-0.0344 to -0.0121]	na	0/2
Europium-152	Fill	6	0	[-0.0917 to 0.119]	na	0/6
Europium-152	Qbt 3	12	0	[-0.128 to 0.0211]	na	0/12
Plutonium-238	Soil	2	0	[0.00149 to 0.0104]	0.023	0/2
Plutonium-238	Qbt 3	4	0	[-0.00666 to 0.0118]	na	0/4
Plutonium-239	Soil	2	0	[0.00593 to 0.0134]	0.054	0/2
Plutonium-239	Qbt 3	4	0	[-0.0226 to 0.0203]	na	0/4
Ruthenium-106	Soil	2	0	[0.216 to 0.284]	na	0/2
Ruthenium-106	Fill	6	0	[-0.234 to 0.236]	na	0/6
Ruthenium-106	Qbt 3	12	0	[-0.19 to 0.238]	na	0/12
Sodium-22	Soil	2	0	[0.0034 to 0.0066]	na	0/2
Sodium-22	Fill	6	0	[-0.0268 to 0.0138]	na	0/6
Sodium-22	Qbt 3	12	0	[-0.0261 to 0.0288]	na	0/12
Strontium-90	Soil	2	0	[-0.0475 to 0.0382]	1.31	0/2
Strontium-90	Qbt 3	4	0	[-0.101 to 0.0591]	na	0/4
Uranium-234	Soil	2	2	0.781 to 0.816	2.59	0/2
Uranium-234	Qbt 3	4	4	0.577 to 0.844	1.98	0/4
Uranium-235	Soil	2	2	0.0415 to 0.0502	0.2	0/2
Uranium-235	Fill	6	0	[-0.108 to 0.209]	0.2	0/6
Uranium-235	Qbt 3	12	3	[-0.174 to 0.332]	0.09	0/12
Uranium-238	Soil	2	2	0.75 to 0.787	2.29	0/2
Uranium-238	Qbt 3	4	4	0.558 to 0.844	1.93	0/4

[a] Values in brackets indicate detection limits for nondetects.

[b] BVs/FVs from LANL 1998, 059730. FVs apply to surface samples only (i.e., 0–6 in., 0–1 ft); all activities detected in deeper samples are reported.

[c] na = Not available.

Table B-3.3-1
Frequency of Organic Chemicals Detected at AOC 73-003

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)*	Frequency of Detects
Aroclor-1254	Qbt 3	14	1	[0.00364] to [0.0405]	1/14
Benzo(b)fluoranthene	Fill	10	1	0.0152 to [0.394]	1/10
DDD[4,4'-]	Fill	10	1	[0.00154] to [0.0315]	1/10
DDE[4,4'-]	Fill	10	1	[0.00154] to [0.0315]	1/10
DDE[4,4'-]	Qbt 3	13	2	0.000509 to 0.00702	2/13
DDT[4,4'-]	Fill	10	3	0.000655 to 0.19	3/10
DDT[4,4'-]	Qbt 3	14	2	[0.00146] to 0.0049	2/14
Dichloroethene[1,1-]	Soil	4	1	0.00041 to [0.0056]	1/4
Dichloroethene[1,1-]	Qbt 3	14	1	[0.00109] to [0.006]	1/14
Di-n-butylphthalate	Qbt 3	14	2	0.0466 to [0.425]	2/14
Fluoranthene	Soil	4	1	[0.0388] to 0.56	1/4
Fluoranthene	Fill	10	1	0.0178 to [0.394]	1/10
Pyrene	Soil	4	1	[0.0388] to 0.45	1/4
Pyrene	Fill	10	1	0.0139 to [0.394]	1/10
Toluene	Soil	4	1	[0.00155] to [0.0056]	1/4

*Values in brackets indicate detection limits for nondetects.

Table B-4.1-1
Frequency of Inorganic Chemicals above BVs at SWMU 73-004(a)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)[a]	BV (mg/kg)[b]	Frequency of Detects above BV	Frequency of Nondetects above BV
Aluminum	Soil	3	3	6500 to 13000	29200	0/3	0/3
Aluminum	Fill	6	6	5000 to 33300	29200	1/6	0/6
Aluminum	Qbt 3	4	4	369 to 6000	7340	0/4	0/4
Antimony	Soil	3	2	0.18 to [12]	0.83	1/3	1/3
Antimony	Fill	6	0	[0.416 to 12]	0.83	0/6	1/6
Antimony	Qbt 3	4	1	0.11 to [0.426]	0.5	0/4	0/4
Arsenic	Soil	3	3	3.7 to 7.3	8.17	0/3	0/3
Arsenic	Fill	6	5	[1.2] to 5.38	8.17	0/6	0/1
Arsenic	Qbt 3	4	4	1.55 to 3.2	2.79	1/4	0/4
Barium	Soil	3	3	140 to 962	295	1/3	0/3
Barium	Fill	6	6	38.1 to 299	295	1/6	0/6
Barium	Qbt 3	4	4	11.8 to 80	46	1/4	0/4
Beryllium	Soil	3	3	0.67 to 0.95	1.83	0/3	0/3
Beryllium	Fill	6	6	0.318 to 1.38	1.83	0/6	0/6
Beryllium	Qbt 3	4	4	0.27 to 0.69	1.21	0/4	0/4
Cadmium	Soil	3	2	0.13 to [0.61]	0.4	0/3	1/3
Cadmium	Fill	6	2	0.262 to [2.77]	0.4	0/6	4/6
Cadmium	Qbt 3	4	1	[0.01] to [0.538]	1.63	0/4	0/4
Calcium	Soil	3	3	18 to 3580	6120	0/3	0/3
Calcium	Fill	6	6	2150 to 8050	6120	1/6	0/6
Calcium	Qbt 3	4	4	400 to 17000	2200	1/4	0/4
Chromium	Soil	3	3	5.4 to 9.9	19.3	0/3	0/3
Chromium	Fill	5	5	5.34 to 9.71	19.3	0/5	0/5
Chromium	Qbt 3	4	4	0.574 to 3.8	7.14	0/4	0/4
Cobalt	Soil	3	3	2.3 to 3.6	8.64	0/3	0/3
Cobalt	Fill	6	6	1.06 to 3.9	8.64	0/6	0/6
Cobalt	Qbt 3	4	3	0.394 to 1.7	3.14	0/4	0/4
Copper	Soil	3	3	10 to 73.7	14.7	1/3	0/3
Copper	Fill	6	6	3.86 to 11.3	14.7	0/6	0/6
Copper	Qbt 3	4	3	0.687 to [4.5]	4.66	0/4	0/4
Cyanide (Total)	Fill	5	0	[0.246 to 0.288]	0.5	0/5	0/5
Cyanide (Total)	Qbt 3	2	0	[0.253 to 0.272]	0.5	0/2	0/2
Iron	Soil	3	3	6800 to 16100	21500	0/3	0/3
Iron	Fill	6	6	9100 to 26200	21500	1/6	0/6
Iron	Qbt 3	4	4	5320 to 8600	14500	0/4	0/4

Table B-4.1-1 (continued)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)[a]	BV (mg/kg)[b]	Frequency of Detects above BV	Frequency of Nondetects above BV
Lead	Soil	3	3	17 to 113	22.3	1/3	0/3
Lead	Fill	6	6	5.39 to 363	22.3	2/6	0/6
Lead	Qbt 3	4	4	4.13 to 8.94	11.2	0/4	0/4
Magnesium	Soil	3	3	1110 to 1800	4610	0/3	0/3
Magnesium	Fill	6	6	972 to 6410	4610	1/6	0/6
Magnesium	Qbt 3	4	4	171 to 1200	1690	0/4	0/4
Manganese	Soil	3	3	120 to 291	671	0/3	0/3
Manganese	Fill	6	6	137 to 284	671	0/6	0/6
Manganese	Qbt 3	4	4	190 to 501	482	1/4	0/4
Mercury	Soil	3	2	0.07 to [0.12]	0.1	0/3	1/3
Mercury	Fill	6	5	0.0191 to [0.12]	0.1	0/6	1/6
Mercury	Qbt 3	4	2	0.009 to 0.04	0.1	0/4	0/4
Nickel	Soil	3	3	4.4 to 6.9	15.4	0/3	0/3
Nickel	Fill	6	6	2.89 to 10.3	15.4	0/6	0/6
Nickel	Qbt 3	4	4	0.906 to 4.9	6.58	0/4	0/4
Nitrate	Fill	5	5	0.776 to 1.44	na[c]	5/5	n/a[d]
Nitrate	Qbt 3	2	0	[0.989 to 1.07]	na	0/2	n/a
Perchlorate	Fill	5	3	0.000639 to [0.00237]	na	3/5	n/a
Perchlorate	Qbt 3	2	0	[0.00206 to 0.0022]	na	0/2	n/a
Potassium	Soil	3	3	780 to 1400	3460	0/3	0/3
Potassium	Fill	6	6	601 to 2950	3460	0/6	0/6
Potassium	Qbt 3	4	4	119 to 740	3500	0/4	0/4
Selenium	Soil	3	1	[0.24] to 0.6	1.52	0/3	0/3
Selenium	Fill	6	0	[1.2 to 8.32]	1.52	0/6	5/6
Selenium	Qbt 3	4	0	[0.11 to 1.61]	0.3	0/4	2/4
Silver	Soil	3	3	1.7 to 31.9	1	3/3	0/3
Silver	Fill	6	3	[0.0959] to 2.69	1	2/6	1/6
Silver	Qbt 3	5	0	[0.03 to 0.54]	1	0/5	0/5
Sodium	Soil	3	3	210 to 273	915	0/3	0/3
Sodium	Fill	6	6	105 to 404	915	0/6	0/6
Sodium	Qbt 3	4	4	79 to 190	2770	0/4	0/4
Thallium	Soil	3	1	[0.26] to [1.5]	0.73	0/3	1/3
Thallium	Fill	6	4	0.114 to [1.2]	0.73	0/6	1/6
Thallium	Qbt 3	4	2	0.0968 to 0.29	1.1	0/4	0/4
Vanadium	Soil	3	3	11 to 16	39.6	0/3	0/3

Table B-4.1-1 (continued)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)[a]	BV (mg/kg)[b]	Frequency of Detects above BV	Frequency of Nondetects above BV
Vanadium	Fill	6	6	10.1 to 34.8	39.6	0/6	0/6
Vanadium	Qbt 3	4	4	2.61 to 8.7	17	0/4	0/4
Zinc	Soil	3	3	44 to 215	48.8	2/3	0/3
Zinc	Fill	6	6	38 to 96.7	48.8	3/6	0/6
Zinc	Qbt 3	5	5	34.4 to 40.1	63.5	0/5	0/5

[a] Values in brackets indicate detection limits for nondetects.

[b] BVs from LANL 1998, 059730.

[c] na = Not available.

[d] n/a = Not applicable.

Table B-4.2-1
Frequency of Radionuclides Detected or Detected above BVs/FVs at SWMU 73-004(a)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (pCi/g)[a]	BV/FV (pCi/g)[b]	Frequency of Detects above BV/FV
Americium-241	Fill	5	0	[0.0158 to 0.131]	0.013	0/5
Americium-241	Qbt 3	2	0	[-0.0422 to -0.0135]	na[c]	0/2
Cesium-137	Fill	5	1	[-0.0291] to 0.0633	1.65	0/5
Cesium-137	Qbt 3	2	0	[0.00909 to 0.0316]	na	0/2
Cobalt-60	Fill	5	0	[0.00288 to 0.0253]	na	0/5
Cobalt-60	Qbt 3	2	0	[0.0131 to 0.0197]	na	0/2
Europium-152	Fill	5	0	[-0.0112 to 0.0352]	na	0/5
Europium-152	Qbt 3	2	0	[-0.071 to 0.0145]	na	0/2
Gross alpha	Soil	1	1	2.11	na	1/1
Gross alpha	Fill	1	1	2.84	na	1/1
Gross beta	Soil	1	1	1.23	na	1/1
Gross beta	Fill	1	1	1.58	na	1/1
Ruthenium-106	Fill	5	0	[-0.303 to 0.156]	na	0/5
Ruthenium-106	Qbt 3	2	0	[0.0422 to 0.167]	na	0/2
Sodium-22	Fill	5	0	[-0.00631 to 0.0429]	na	0/5
Sodium-22	Qbt 3	2	0	[-0.0118 to -0.00107]	na	0/2
Tritium	Soil	1	0	[0.05 to 0.05]	na	0/1
Uranium-235	Fill	5	0	[0.00861 to 0.249]	0.2	0/5
Uranium-235	Qbt 3	2	0	[0.074 to 0.292]	0.09	0/2

[a] Values in brackets indicate detection limits for nondetects.

[b] BVs/FVs from LANL 1998, 059730. FVs apply to surface samples only (i.e., 0–6 in, 0–1 ft); all activities detected in deeper samples are reported.

[c] na = Not available.

Table B-4.3-1
Frequency of Organic Chemicals Detected at SWMU 73-004(a)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)*	Frequency of Detects
Anthracene	Fill	6	1	0.00874 to [1.44]	1/6
Chlordane[alpha-]	Soil	3	1	[0.000777] to 0.0021	1/3
Chlordane[gamma-]	Soil	3	1	[0.000777] to 0.0034	1/3
DDD[4,4'-]	Soil	3	2	[0.0037] to 0.173	2/3
DDD[4,4'-]	Fill	6	1	[0.00166] to [0.0722]	1/6
DDE[4,4'-]	Soil	3	3	0.016 to 0.14	3/3
DDE[4,4'-]	Fill	6	2	[0.00166] to [0.0722]	2/6
DDT[4,4'-]	Soil	3	3	0.12 to 0.5	3/3
DDT[4,4'-]	Fill	6	2	[0.00166] to 0.355	2/6
DDT[4,4'-]	Qbt 3	5	1	[0.00136] to [0.0293]	1/5
Fluoranthene	Fill	6	2	0.0125 to [1.44]	2/6
Heptachlorodibenzodioxin[1,2,3,4,6,7,8-]	Fill	5	4	[4.92E-07] to 0.000137	4/5
Heptachlorodibenzodioxin[1,2,3,4,6,7,8-]	Qbt 3	2	2	3.5E-07 to 0.00004	2/2
Heptachlorodibenzodioxins (Total)	Fill	5	4	[4.92E-07] to 0.000224	4/5
Heptachlorodibenzodioxins (Total)	Qbt 3	2	2	5.75E-07 to 0.0000654	2/2
Heptachlorodibenzofuran[1,2,3,4,6,7,8-]	Fill	5	3	[2.32E-07] to 9.35E-06	3/5
Heptachlorodibenzofuran[1,2,3,4,6,7,8-]	Qbt 3	2	1	[7.2E-08] to 3.93E-06	1/2
Heptachlorodibenzofuran[1,2,3,4,7,8,9-]	Fill	5	2	[1.2E-07] to 3.52E-07	2/5
Heptachlorodibenzofuran[1,2,3,4,7,8,9-]	Qbt 3	2	1	[3.62E-08] to 1.68E-07	1/2
Heptachlorodibenzofurans (Total)	Fill	5	4	4.43E-07 to 0.000023	4/5
Heptachlorodibenzofurans (Total)	Qbt 3	2	1	[7.2E-08] to 0.0000108	1/2
Hexachlorodibenzodioxin[1,2,3,4,7,8-]	Fill	5	1	[1.96E-07] to [4.87E-07]	1/5
Hexachlorodibenzodioxin[1,2,3,6,7,8-]	Fill	5	3	[0.0000002] to 2.05E-06	3/5
Hexachlorodibenzodioxin[1,2,3,6,7,8-]	Qbt 3	2	1	[9.25E-08] to 1.02E-06	1/2
Hexachlorodibenzodioxin[1,2,3,7,8,9-]	Fill	5	3	[1.91E-07] to 1.37E-06	3/5
Hexachlorodibenzodioxin[1,2,3,7,8,9-]	Qbt 3	2	2	1.05E-07 to 4.66E-07	2/2
Hexachlorodibenzodioxins (Total)	Fill	5	4	[1.96E-07] to 0.0000176	4/5
Hexachlorodibenzodioxins (Total)	Qbt 3	2	2	1.96E-07 to 8.62E-06	2/2
Hexachlorodibenzofuran[1,2,3,4,7,8-]	Fill	5	2	[1.15E-07] to 5.26E-07	2/5
Hexachlorodibenzofuran[1,2,3,4,7,8-]	Qbt 3	2	1	[2.82E-08] to 2.08E-07	1/2
Hexachlorodibenzofuran[1,2,3,6,7,8-]	Fill	5	2	[6.84E-08] to 4.86E-07	2/5
Hexachlorodibenzofuran[1,2,3,6,7,8-]	Qbt 3	2	1	[2.67E-08] to 2.22E-07	1/2
Hexachlorodibenzofuran[2,3,4,6,7,8-]	Fill	5	3	[6.92E-08] to 7.01E-07	3/5
Hexachlorodibenzofuran[2,3,4,6,7,8-]	Qbt 3	2	1	[2.87E-08] to 3.39E-07	1/2
Hexachlorodibenzofurans (Total)	Fill	5	4	[1.27E-07] to 0.0000099	4/5
Hexachlorodibenzofurans (Total)	Qbt 3	2	1	[3.76E-08] to 3.91E-06	1/2

Table B-4.3-1 (continued)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)*	Frequency of Detects
Methylnaphthalene[2-]	Soil	2	1	[0.2] to 0.22	1/2
Naphthalene	Soil	2	1	0.16 to [0.2]	1/2
Octachlorodibenzodioxin[1,2,3,4,6,7,8,9-]	Fill	5	4	[1.21E-06] to 0.000678	4/5
Octachlorodibenzodioxin[1,2,3,4,6,7,8,9-]	Qbt 3	2	2	2.77E-06 to 0.000194	2/2
Octachlorodibenzofuran[1,2,3,4,6,7,8,9-]	Fill	5	4	[3.29E-07] to 0.0000311	4/5
Octachlorodibenzofuran[1,2,3,4,6,7,8,9-]	Qbt 3	2	1	[1.25E-07] to 0.0000115	1/2
Pentachlorodibenzodioxin[1,2,3,7,8-]	Fill	5	3	[1.18E-07] to 4.04E-07	3/5
Pentachlorodibenzodioxin[1,2,3,7,8-]	Qbt 3	2	1	[1.01E-07] to 1.37E-07	1/2
Pentachlorodibenzodioxins (Total)	Fill	5	3	[1.18E-07] to 3.24E-06	3/5
Pentachlorodibenzodioxins (Total)	Qbt 3	2	1	[1.01E-07] to 6.66E-07	1/2
Pentachlorodibenzofuran[1,2,3,7,8-]	Fill	5	2	[1.34E-07] to 2.82E-07	2/5
Pentachlorodibenzofuran[1,2,3,7,8-]	Qbt 3	2	1	[8.83E-08] to 1.19E-07	1/2
Pentachlorodibenzofuran[2,3,4,7,8-]	Fill	5	2	[1.51E-07] to 5.37E-07	2/5
Pentachlorodibenzofuran[2,3,4,7,8-]	Qbt 3	2	1	[8.58E-08] to 2.01E-07	1/2
Pentachlorodibenzofurans (Totals)	Fill	5	3	[1.13E-07] to 5.86E-06	3/5
Pentachlorodibenzofurans (Totals)	Qbt 3	2	1	[8.71E-08] to 2.06E-06	1/2
Phenanthrene	Soil	2	1	0.1 to [0.24]	1/2
Phenanthrene	Fill	6	1	0.0293 to [1.44]	1/6
Pyrene	Fill	6	2	0.0142 to [1.44]	2/6
Tetrachlorodibenzodioxins (Total)	Fill	5	2	[9.63E-08] to 1.33E-06	2/5
Tetrachlorodibenzodioxins (Total)	Qbt 3	2	1	[6.96E-08] to 3.01E-07	1/2
Tetrachlorodibenzofuran[2,3,7,8-]	Fill	5	1	[1.05E-07] to 3.18E-07	1/5
Tetrachlorodibenzofuran[2,3,7,8-]	Qbt 3	2	1	[6.86E-08] to 1.76E-07	1/2
Tetrachlorodibenzofurans (Total)	Fill	5	3	[1.05E-07] to 6.18E-06	3/5
Tetrachlorodibenzofurans (Total)	Qbt 3	2	1	[6.86E-08] to 2.06E-06	1/2
Toluene	Qbt 3	3	1	0.00026 to [0.0011]	1/3
Trichlorofluoromethane	Soil	2	1	[0.0056] to 0.007	1/2

*Values in brackets indicate detection limits for nondetects.

Table B-5.1-1
Frequency of Inorganic Chemicals above BVs at SWMU 73-004(b)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)[a]	BV (mg/kg)[b]	Frequency of Detects above BV	Frequency of Nondetects above BV
Aluminum	Soil	15	15	2570 to 16500	29200	0/15	0/15
Aluminum	Fill	18	18	1180 to 44600	29200	4/18	0/18
Aluminum	Qbt 3	22	22	330 to 18700	7340	5/22	0/22
Antimony	Soil	13	2	0.174 to [14]	0.83	0/13	2/13
Antimony	Fill	17	4	0.135 to [12]	0.83	0/17	2/17
Antimony	Qbt 3	18	4	0.05 to [11]	0.5	0/18	1/18
Arsenic	Soil	15	15	1.34 to 13	8.17	1/15	0/15
Arsenic	Fill	18	17	1.6 to 8	8.17	0/18	0/18
Arsenic	Qbt 3	22	22	0.642 to 5.45	2.79	7/22	0/22
Barium	Soil	15	15	7.69 to 180	295	0/15	0/15
Barium	Fill	18	18	9.98 to 664	295	1/18	0/18
Barium	Qbt 3	22	22	5.51 to 130	46	5/22	0/22
Beryllium	Soil	15	14	0.211 to 0.89	1.83	0/15	0/15
Beryllium	Fill	18	18	0.378 to 2.18	1.83	2/18	0/18
Beryllium	Qbt 3	22	22	0.173 to 1.02	1.21	0/22	0/22
Cadmium	Soil	15	6	0.123 to [2.76]	0.4	0/15	9/15
Cadmium	Fill	18	3	0.04 to [2.94]	0.4	0/18	13/18
Cadmium	Qbt 3	22	5	0.08 to [2.83]	1.63	0/22	4/22
Calcium	Soil	15	15	625 to 4210	6120	0/15	0/15
Calcium	Fill	18	18	418 to 6500	6120	1/18	0/18
Calcium	Qbt 3	22	22	170 to 4800	2200	3/22	0/22
Chromium	Soil	15	15	4.19 to 36	19.3	1/15	0/15
Chromium	Fill	18	18	0.707 to 26.7	19.3	2/18	0/18
Chromium	Qbt 3	22	22	0.196 to 24.6	7.14	8/22	0/22
Cobalt	Soil	15	15	0.312 to 247	8.64	1/15	0/15
Cobalt	Fill	18	18	0.274 to 15.9	8.64	1/18	0/18
Cobalt	Qbt 3	22	19	0.299 to 5.8	3.14	3/22	0/22
Copper	Soil	15	15	1.09 to 47.7	14.7	3/15	0/15
Copper	Fill	18	16	[1.6] to 15.8	14.7	1/18	0/18
Copper	Qbt 3	22	19	0.753 to 9.4	4.66	2/22	0/22
Cyanide (Total)	Soil	8	3	0.159 to 0.319	0.5	0/8	0/8
Cyanide (Total)	Fill	13	0	[0.262 to 0.297]	0.5	0/13	0/13
Cyanide (Total)	Qbt 3	9	0	[0.235 to 0.269]	0.5	0/9	0/9
Iron	Soil	15	15	4640 to 16700	21500	0/15	0/15
Iron	Fill	18	18	4590 to 26800	21500	2/18	0/18

Table B-5.1-1 (continued)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)[a]	BV (mg/kg)[b]	Frequency of Detects above BV	Frequency of Nondetects above BV
Iron	Qbt 3	22	22	3390 to 15000	14500	1/22	0/22
Lead	Soil	15	15	3.2 to 190	22.3	2/15	0/15
Lead	Fill	18	18	5.8 to 26.8	22.3	1/18	0/18
Lead	Qbt 3	22	22	3.07 to 30.2	11.2	6/22	0/22
Magnesium	Soil	15	15	521 to 2490	4610	0/15	0/15
Magnesium	Fill	18	18	216 to 7830	4610	4/18	0/18
Magnesium	Qbt 3	22	22	159 to 3110	1690	2/22	0/22
Manganese	Soil	15	15	114 to 519	671	0/15	0/15
Manganese	Fill	18	18	91.6 to 699	671	1/18	0/18
Manganese	Qbt 3	22	22	67.6 to 340	482	0/22	0/22
Mercury	Soil	15	13	0.0058 to 0.93	0.1	1/15	1/15
Mercury	Fill	18	15	0.0081 to 0.147	0.1	3/18	2/18
Mercury	Qbt 3	22	15	[0.00967] to 0.23	0.1	1/22	2/22
Nickel	Soil	15	15	1.24 to 11.7	15.4	0/15	0/15
Nickel	Fill	18	18	0.499 to 21.4	15.4	1/18	0/18
Nickel	Qbt 3	22	22	0.63 to 7.81	6.58	2/22	0/22
Nitrate	Soil	8	7	0.765 to 7.12	na[c]	7/8	n/a[d]
Nitrate	Fill	13	11	[1.12] to 104	na	11/13	n/a
Nitrate	Qbt 3	9	6	0.753 to 41	na	6/9	n/a
Perchlorate	Soil	8	4	0.000532 to [0.00241]	na	4/8	n/a
Perchlorate	Fill	13	8	0.000791 to 0.00702	na	8/13	n/a
Perchlorate	Qbt 3	9	4	0.000589 to 0.00222	na	4/9	n/a
Potassium	Soil	15	15	390 to 2220	3460	0/15	0/15
Potassium	Fill	18	18	380 to 4140	3460	1/18	0/18
Potassium	Qbt 3	22	22	150 to 2000	3500	0/22	0/22
Selenium	Soil	15	4	[0.22] to 4.17	1.52	2/15	5/15
Selenium	Fill	18	11	[0.21] to 29.9	1.52	10/18	3/18
Selenium	Qbt 3	22	10	0.08 to 13.5	0.3	9/22	8/22
Silver	Soil	15	11	0.0994 to 44.3	1	2/15	2/15
Silver	Fill	18	12	0.0543 to [2.4]	1	0/18	2/18
Silver	Qbt 3	22	9	0.0425 to [2.2]	1	0/22	1/22
Sodium	Soil	15	15	71.5 to 679	915	0/15	0/15
Sodium	Fill	18	18	98.3 to 464	915	0/18	0/18
Sodium	Qbt 3	22	22	60 to 580	2770	0/22	0/22

Table B-5.1-1 (continued)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)[a]	BV (mg/kg)[b]	Frequency of Detects above BV	Frequency of Nondetects above BV
Thallium	Soil	15	8	0.117 to [1.7]	0.73	0/15	2/15
Thallium	Fill	18	15	0.109 to [1.2]	0.73	0/18	2/18
Thallium	Qbt 3	22	12	0.0868 to [1.4]	1.1	0/22	1/22
Vanadium	Soil	15	15	3.84 to 42	39.6	1/15	0/15
Vanadium	Fill	18	18	1.77 to 52	39.6	1/18	0/18
Vanadium	Qbt 3	22	22	1.09 to 22	17	3/22	0/22
Zinc	Soil	15	15	20.6 to 150	48.8	4/15	0/15
Zinc	Fill	18	18	28.5 to 260	48.8	5/18	0/18
Zinc	Qbt 3	22	22	18.3 to 80	63.5	1/22	0/22

[a] Values in brackets indicate detection limits for nondetects.

[b] BVs from LANL 1998, 059730.

[c] na = Not available.

[d] n/a = Not applicable.

Table B-5.2-1
Frequency of Radionuclides Detected or Detected above BVs/FVs at SWMU 73-004(b)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (pCi/g)[a]	BV/FV (pCi/g)[b]	Frequency of Detects above BV/FV
Americium-241	Soil	8	0	[-0.13 to 0.0582]	0.013	0/8
Americium-241	Fill	13	0	[-0.0658 to 0.105]	0.013	0/13
Americium-241	Qbt 3	9	0	[-0.0807 to 0.139]	na[c]	0/9
Cesium-134	Soil	1	0	[0.0649 to 0.0649]	na	0/1
Cesium-134	Fill	2	0	[0.0523 to 0.0691]	na	0/2
Cesium-134	Qbt 3	1	0	[0.0962 to 0.0962]	na	0/1
Cesium-137	Soil	7	4	[-0.00893] to 1.05	1.65	0/7
Cesium-137	Fill	11	0	[-0.0272 to 0.0281]	1.65	0/11
Cesium-137	Qbt 3	9	0	[-0.0138 to 0.0451]	na	0/9
Cobalt-60	Soil	8	0	[-0.0405 to 0.0475]	na	0/8
Cobalt-60	Fill	12	0	[-0.0063 to 0.0398]	na	0/12
Cobalt-60	Qbt 3	9	0	[-0.00233 to 0.0323]	na	0/9
Europium-152	Soil	8	0	[-0.0884 to 0.02]	na	0/8
Europium-152	Fill	13	0	[-0.0981 to 0.0505]	na	0/13
Europium-152	Qbt 3	9	0	[-0.0772 to 0.0598]	na	0/9
Gross alpha	Soil	2	2	2.91 to 9.6	na	2/2
Gross alpha	Fill	2	2	2.44 to 6.02	na	2/2
Gross alpha	Qbt 3	1	1	0.28 to 0.28	na	1/1
Gross beta	Soil	2	2	1.97 to 7.79	na	2/2
Gross beta	Fill	2	2	1.42 to 3.15	na	2/2
Gross beta	Qbt 3	1	0	[0.09 to 0.09]	na	0/1
Ruthenium-106	Soil	8	0	[-0.103 to 0.2]	na	0/8
Ruthenium-106	Fill	13	0	[-0.32 to 0.192]	na	0/13
Ruthenium-106	Qbt 3	9	0	[-0.173 to 0.31]	na	0/9
Sodium-22	Soil	8	0	[-0.0697 to 0.0219]	na	0/8
Sodium-22	Fill	13	0	[-0.0715 to 0.0202]	na	0/13
Sodium-22	Qbt 3	9	0	[-0.0285 to 0.00998]	na	0/9
Tritium	Soil	2	1	[0.05] to 0.1	na	1/2
Tritium	Qbt 3	1	1	0.29 to 0.29	na	1/1
Uranium-235	Soil	8	0	[0.00923 to 0.232]	0.2	0/8
Uranium-235	Fill	13	0	[0.0313 to 0.283]	0.2	0/13
Uranium-235	Qbt 3	9	0	[0.0372 to 0.273]	0.09	0/9

[a] Values in brackets indicate detection limits for nondetects.

[b] BVs/FVs from LANL 1998, 059730. FVs apply to surface samples only (i.e., 0–6 in., 0–1 ft); all activities detected in deeper samples are reported.

[c] na = Not available.

Table B-5.3-1
Frequency of Organic Chemicals Detected at SWMU 73-004(b)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)*	Frequency of Detects
Acenaphthene	Fill	18	1	[0.0358] to [0.42]	1/18
Acetone	Fill	15	1	[0.00332] to 0.025	1/15
Anthracene	Soil	10	2	0.00954 to [0.37]	2/10
Anthracene	Fill	18	2	0.0171 to [0.42]	2/18
Aroclor-1254	Soil	16	1	0.00157 to [7.3]	1/16
Aroclor-1254	Fill	20	2	[0.00358] to 4.55	2/20
Aroclor-1254	Qbt 3	29	3	0.0018 to [370]	3/29
Aroclor-1260	Fill	20	3	[0.00358] to 1.96	3/20
Aroclor-1260	Qbt 3	29	2	0.0014 to [370]	2/29
Benzo(a)anthracene	Soil	10	2	[0.0346] to 0.39	2/10
Benzo(a)anthracene	Fill	18	4	0.0131 to 0.462	4/18
Benzo(a)anthracene	Qbt 3	14	1	[0.0335] to [0.35]	1/14
Benzo(a)pyrene	Soil	10	2	[0.0346] to [0.369]	2/10
Benzo(a)pyrene	Fill	18	3	0.0201 to 0.467	3/18
Benzo(a)pyrene	Qbt 3	14	1	[0.0335] to [0.35]	1/14
Benzo(b)fluoranthene	Soil	10	3	[0.0346] to 0.56	3/10
Benzo(b)fluoranthene	Fill	18	4	0.0146 to 0.783	4/18
Benzo(b)fluoranthene	Qbt 3	14	1	[0.0335] to [0.35]	1/14
Benzo(g,h,i)perylene	Soil	10	1	[0.0346] to [0.369]	1/10
Benzo(g,h,i)perylene	Fill	18	1	[0.0358] to [0.42]	1/18
Benzo(g,h,i)perylene	Qbt 3	14	1	[0.0335] to [0.35]	1/14
Benzo(k)fluoranthene	Soil	9	2	0.0183 to [0.369]	2/9
Benzoic Acid	Soil	10	1	0.668 to [7.38]	1/10
Bis(2-ethylhexyl)phthalate	Soil	10	1	[0.173] to [1.85]	1/10
Bis(2-ethylhexyl)phthalate	Qbt 3	14	1	[0.167] to 0.64	1/14
Butylbenzylphthalate	Soil	10	1	0.139 to [3.69]	1/10
Chlordane[alpha-]	Soil	10	4	[0.000714] to 0.46	4/10
Chlordane[alpha-]	Fill	20	1	[0.000715] to 0.028	1/20
Chlordane[gamma-]	Soil	10	4	0.000658 to 0.52	4/10
Chlordane[gamma-]	Fill	20	1	[0.000715] to 0.038	1/20
Chrysene	Soil	10	3	0.0343 to 0.46	3/10
Chrysene	Fill	18	3	0.0245 to 0.521	3/18
Chrysene	Qbt 3	14	1	[0.0335] to [0.35]	1/14
DDD[4,4'-]	Soil	10	4	0.00057 to 4.7	4/10
DDD[4,4'-]	Fill	20	2	[0.00143] to 0.31	2/20
DDE[4,4'-]	Soil	10	3	0.000909 to [0.73]	3/10

Table B-5.3-1 (continued)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)*	Frequency of Detects
DDE[4,4'-]	Fill	20	4	[0.00143] to 0.089	4/20
DDT[4,4'-]	Soil	10	4	0.00133 to 0.34	4/10
DDT[4,4'-]	Fill	20	3	[0.00143] to 0.11	3/20
DDT[4,4'-]	Qbt 3	14	1	[0.00134] to 170	1/14
Di-n-butylphthalate	Soil	10	1	[0.21] to [3.69]	1/10
Di-n-octylphthalate	Soil	10	1	0.122 to [3.69]	1/10
Endrin Aldehyde	Soil	10	1	[0.00165] to [0.73]	1/10
Fluoranthene	Soil	10	6	0.0158 to 0.7	6/10
Fluoranthene	Fill	18	4	0.0162 to 1.22	4/18
Fluoranthene	Qbt 3	14	1	[0.0335] to 0.36	1/14
Fluorene	Fill	18	1	[0.0358] to [0.42]	1/18
Indeno(1,2,3-cd)pyrene	Soil	10	1	[0.0346] to [0.369]	1/10
Indeno(1,2,3-cd)pyrene	Fill	18	1	[0.0358] to [0.42]	1/18
Indeno(1,2,3-cd)pyrene	Qbt 3	14	1	[0.0335] to [0.35]	1/14
Methylnaphthalene[2-]	Fill	18	1	0.0167 to [0.42]	1/18
Naphthalene	Fill	18	1	0.0326 to [0.42]	1/18
Phenanthrene	Soil	10	3	0.0112 to 0.38	3/10
Phenanthrene	Fill	18	4	0.0135 to 1.08	4/18
Phenanthrene	Qbt 3	14	1	[0.0335] to [0.35]	1/14
Pyrene	Soil	10	5	0.0161 to 0.54	5/10
Pyrene	Fill	18	4	0.0125 to 1.08	4/18
Pyrene	Qbt 3	14	1	[0.0335] to [0.35]	1/14

*Values in brackets indicate detection limits for nondetects.

Table B-6.1-1
Frequency of Inorganic Chemicals above BVs at SWMU 73-006

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)[a]	BV (mg/kg)[b]	Frequency of Detects above BV	Frequency of Nondetects above BV
Aluminum	Soil	2	2	7060 to 37700	29200	1/2	0/2
Aluminum	Fill	8	8	8430 to 15300	29200	0/8	0/8
Aluminum	Qbt 3	11	11	396 to 20500	7340	2/11	0/11
Antimony	Soil	2	0	[0.477 to 0.489]	0.83	0/2	0/2
Antimony	Fill	7	3	0.164 to [8.6]	0.83	0/7	3/7
Antimony	Qbt 3	7	0	[0.424 to 0.471]	0.5	0/7	0/7
Arsenic	Soil	2	2	2.37 to 5.67	8.17	0/2	0/2
Arsenic	Fill	8	8	2.2 to 4.77	8.17	0/8	0/8
Arsenic	Qbt 3	11	11	1.4 to 3.37	2.79	1/11	0/11
Barium	Soil	2	2	55.1 to 172	295	0/2	0/2
Barium	Fill	8	8	89 to 244	295	0/8	0/8
Barium	Qbt 3	11	11	11.5 to 138	46	5/11	0/11
Beryllium	Soil	2	2	0.774 to 1.47	1.83	0/2	0/2
Beryllium	Fill	8	8	0.543 to 1.8	1.83	0/8	0/8
Beryllium	Qbt 3	11	11	0.192 to 0.83	1.21	0/11	0/11
Cadmium	Soil	2	0	[0.582 to 3.07]	0.4	0/2	2/2
Cadmium	Fill	8	6	0.417 to 3.4	0.4	6/8	2/8
Cadmium	Qbt 3	12	5	[0.01] to [0.579]	1.63	0/12	0/12
Calcium	Soil	2	2	1290 to 5950	6120	0/2	0/2
Calcium	Fill	8	8	1440 to 27000	6120	2/8	0/8
Calcium	Qbt 3	11	11	336 to 46000	2200	5/11	0/11
Chromium	Soil	2	2	4.46 to 23.8	19.3	1/2	0/2
Chromium	Fill	8	8	6.65 to 15.2	19.3	0/8	0/8
Chromium	Qbt 3	11	11	0.523 to 12.2	7.14	3/11	0/11
Cobalt	Soil	2	2	1.01 to 3.66	8.64	0/2	0/2
Cobalt	Fill	8	8	1.98 to 9.2	8.64	1/8	0/8
Cobalt	Qbt 3	11	11	0.239 to 2.28	3.14	0/11	0/11
Copper	Soil	2	2	6.55 to 11	14.7	0/2	0/2
Copper	Fill	8	8	7.5 to 83.1	14.7	6/8	0/8
Copper	Qbt 3	11	11	0.663 to 14	4.66	4/11	0/11
Cyanide (Total)	Fill	4	0	[0.248 to 0.277]	0.5	0/4	0/4
Cyanide (Total)	Qbt 3	3	0	[0.274 to 0.281]	0.5	0/3	0/3
Iron	Soil	2	2	7950 to 23900	21500	1/2	0/2
Iron	Fill	8	8	8470 to 19600	21500	0/8	0/8
Iron	Qbt 3	11	11	2640 to 15500	14500	1/11	0/11

Table B-6.1-1 (continued)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)[a]	BV (mg/kg)[b]	Frequency of Detects above BV	Frequency of Nondetects above BV
Lead	Soil	2	2	15.1 to 75.4	22.3	1/2	0/2
Lead	Fill	8	8	14.5 to 134	22.3	6/8	0/8
Lead	Qbt 3	12	12	4.78 to 173	11.2	5/12	0/12
Magnesium	Soil	2	2	1070 to 6360	4610	1/2	0/2
Magnesium	Fill	8	8	1240 to 3300	4610	0/8	0/8
Magnesium	Qbt 3	11	11	175 to 3990	1690	3/11	0/11
Manganese	Soil	2	2	165 to 254	671	0/2	0/2
Manganese	Fill	8	8	209 to 605	671	0/8	0/8
Manganese	Qbt 3	11	11	159 to 280	482	0/11	0/11
Mercury	Soil	2	2	0.0383 to 0.0928	0.1	0/2	0/2
Mercury	Fill	7	7	0.0346 to 7.9	0.1	4/7	0/7
Mercury	Qbt 3	11	8	0.0033 to 0.16	0.1	1/11	1/11
Nickel	Soil	2	2	5.82 to 11.8	15.4	0/2	0/2
Nickel	Fill	8	8	5.69 to 30.3	15.4	1/8	0/8
Nickel	Qbt 3	11	11	0.826 to 10.3	6.58	1/11	0/11
Nitrate	Fill	4	4	0.824 to 1.65	na[c]	4/4	n/a[d]
Nitrate	Qbt 3	3	1	[1.09] to 1.77	na	1/3	n/a
Perchlorate	Fill	4	0	[0.00216 to 0.00229]	na	0/4	n/a
Perchlorate	Qbt 3	3	0	[0.0022 to 0.00229]	na	0/3	n/a
Potassium	Soil	2	2	798 to 2850	3460	0/2	0/2
Potassium	Fill	8	8	904 to 2000	3460	0/8	0/8
Potassium	Qbt 3	11	11	203 to 1840	3500	0/11	0/11
Selenium	Soil	2	0	[0.699 to 3.69]	1.52	0/2	1/2
Selenium	Fill	8	4	[0.37] to 20.4	1.52	1/8	2/8
Selenium	Qbt 3	11	4	0.11 to [79.8]	0.3	2/11	6/11
Silver	Soil	2	2	0.111 to 0.334	1	0/2	0/2
Silver	Fill	8	8	0.63 to 9.08	1	6/8	0/8
Silver	Qbt 3	11	4	0.0544 to 0.72	1	0/11	0/11
Sodium	Soil	2	2	126 to 592	915	0/2	0/2
Sodium	Fill	8	8	73.1 to 602	915	0/8	0/8
Sodium	Qbt 3	11	11	93 to 396	2770	0/11	0/11
Thallium	Soil	2	2	0.164 to 0.85	0.73	1/2	0/2
Thallium	Fill	8	5	0.147 to 0.43	0.73	0/8	0/8
Thallium	Qbt 3	11	8	0.109 to 0.509	1.1	0/11	0/11
Vanadium	Soil	2	2	8.17 to 40.7	39.6	1/2	0/2
Vanadium	Fill	8	8	13.1 to 25.3	39.6	0/8	0/8

Table B-6.1-1 (continued)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)[a]	BV (mg/kg)[b]	Frequency of Detects above BV	Frequency of Nondetects above BV
Vanadium	Qbt 3	11	11	1.6 to 25.6	17	1/11	0/11
Zinc	Soil	2	2	48 to 84.2	48.8	1/2	0/2
Zinc	Fill	8	8	43.3 to 1250	48.8	7/8	0/8
Zinc	Qbt 3	12	12	32.2 to 64.5	63.5	1/12	0/12

[a] Values in brackets indicate detection limits for nondetects.

[b] BVs from LANL 1998, 059730.

[c] na = Not available.

[d] n/a = Not applicable.

Table B-6.2-1
Frequency of Radionuclides Detected or Detected above BVs/FVs at SWMU 73-006

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (pCi/g)[a]	BV/FV (pCi/g)[b]	Frequency of Detects above BV/FV
Americium-241	Fill	5	0	[-0.239 to 0.119]	0.013	0/5
Americium-241	Qbt 3	7	0	[-0.16 to 0.16]	na[c]	0/7
Cesium-134	Fill	2	0	[0.036 to 0.0784]	na	0/2
Cesium-134	Qbt 3	4	0	[-0.043 to 0.017]	na	0/4
Cesium-137	Fill	4	1	[0.0251] to 0.12	1.65	0/4
Cesium-137	Qbt 3	7	0	[-0.0138 to 0.0227]	na	0/7
Cobalt-60	Fill	5	0	[-0.03 to 0.0179]	na	0/5
Cobalt-60	Qbt 3	7	0	[-0.011 to 0.0444]	na	0/7
Europium-152	Fill	5	0	[-0.0754 to 0.0293]	na	0/5
Europium-152	Qbt 3	7	0	[-0.1 to 0.115]	na	0/7
Plutonium-238	Fill	1	0	[-0.0074]	0.023	0/1
Plutonium-238	Qbt 3	4	0	[-0.0032 to 0.0004]	na	0/4
Plutonium-239	Fill	1	0	[0.0061]	0.054	0/1
Plutonium-239	Qbt 3	4	1	[-0.0009] to 0.0211	na	1/4
Ruthenium-106	Fill	5	0	[-0.38 to 0.0942]	na	0/5
Ruthenium-106	Qbt 3	7	0	[-0.4 to 0.52]	na	0/7
Sodium-22	Fill	5	0	[-0.00641 to 0.029]	na	0/5
Sodium-22	Qbt 3	7	0	[-0.0479 to 0.058]	na	0/7
Uranium-234	Fill	1	1	0.829	2.59	0/1
Uranium-234	Qbt 3	4	4	0.704 to 0.814	1.98	0/4
Uranium-235	Fill	5	1	[-0.0673 to 0.221]	0.2	0/5
Uranium-235	Qbt 3	6	4	0.0375 to [0.131]	0.09	0/6
Uranium-238	Fill	1	1	0.854	2.29	0/1
Uranium-238	Qbt 3	4	4	0.689 to 0.911	1.93	0/4

[a] Values in brackets indicate detection limits for nondetects.

[b] BVs/FVs from LANL 1998, 059730. FVs apply to surface samples only (i.e., 0–6 in., 0–1 ft); all activities detected in deeper samples are reported.

[c] na = Not available.

Table B-6.3-1
Frequency of Organic Chemicals Detected at SWMU 73-006

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)*	Frequency of Detects
Acenaphthene	Fill	8	1	0.0297 to [0.41]	1/8
Anthracene	Fill	8	3	0.0143 to [0.41]	3/8
Aroclor-1260	Fill	8	1	[0.035] to [0.08]	1/8
Benzo(a)anthracene	Fill	8	3	0.076 to [0.41]	3/8
Benzo(a)pyrene	Fill	8	3	[0.0355] to [0.41]	3/8
Benzo(b)fluoranthene	Fill	8	3	[0.0355] to [0.41]	3/8
Benzo(g,h,i)perylene	Fill	8	3	[0.0355] to [0.41]	3/8
Benzo(k)fluoranthene	Fill	8	2	[0.0355] to [0.41]	2/8
Bis(2-ethylhexyl)phthalate	Fill	8	1	0.069 to [0.778]	1/8
Chrysene	Fill	8	4	0.05 to [0.41]	4/8
DDD[4,4'-]	Fill	8	2	[0.0035] to [0.0778]	2/8
DDE[4,4'-]	Fill	8	1	[0.0035] to [0.0778]	1/8
DDE[4,4'-]	Qbt 3	8	1	[0.00149] to [0.0143]	1/8
DDT[4,4'-]	Fill	8	4	[0.0035] to 0.23	4/8
DDT[4,4'-]	Qbt 3	8	2	[0.00149] to 0.058	2/8
Diethylphthalate	Fill	8	3	0.067 to [1.56]	3/8
Fluoranthene	Fill	8	5	0.077 to [0.41]	5/8
Fluorene	Fill	8	1	0.0351 to [0.41]	1/8
Heptachlorodibenzodioxin[1,2,3,4,6,7,8-]	Soil	2	1	[4.7E-07] to 0.0000102	1/2
Heptachlorodibenzodioxin[1,2,3,4,6,7,8-]	Fill	4	4	0.0000154 to 0.000171	4/4
Heptachlorodibenzodioxin[1,2,3,4,6,7,8-]	Qbt 3	7	5	2.53E-07 to 6.08E-06	5/7
Heptachlorodibenzodioxins (Total)	Soil	2	1	[9.1E-07] to 0.0000171	1/2
Heptachlorodibenzodioxins (Total)	Fill	7	5	0.0000365 to [0.00068]	5/7
Heptachlorodibenzodioxins (Total)	Qbt 3	7	5	2.53E-07 to 0.0000109	5/7
Heptachlorodibenzofuran[1,2,3,4,6,7,8-]	Soil	2	1	[6.3E-07] to 4.93E-06	1/2
Heptachlorodibenzofuran[1,2,3,4,6,7,8-]	Fill	4	4	3.16E-06 to 0.0000472	4/4
Heptachlorodibenzofuran[1,2,3,4,6,7,8-]	Qbt 3	7	2	[4.82E-08] to 2.09E-06	2/7
Heptachlorodibenzofuran[1,2,3,4,7,8,9-]	Fill	4	3	1.82E-07 to 2.67E-06	3/4
Heptachlorodibenzofurans (Total)	Soil	2	1	[5.9E-07] to 8.81E-06	1/2
Heptachlorodibenzofurans (Total)	Fill	7	4	9.66E-06 to [0.0017]	4/7
Heptachlorodibenzofurans (Total)	Qbt 3	7	2	[4.71E-08] to 2.83E-06	2/7
Hexachlorodibenzodioxin[1,2,3,4,7,8-]	Soil	2	1	[3.2E-07] to 4.4E-07	1/2
Hexachlorodibenzodioxin[1,2,3,4,7,8-]	Fill	4	4	1.92E-07 to 6.27E-06	4/4
Hexachlorodibenzodioxin[1,2,3,6,7,8-]	Soil	2	1	[3.5E-07] to 0.0000009	1/2
Hexachlorodibenzodioxin[1,2,3,6,7,8-]	Fill	4	4	5.07E-07 to 0.0000111	4/4
Hexachlorodibenzodioxin[1,2,3,6,7,8-]	Qbt 3	7	1	[8.59E-08] to 2.82E-06	1/7

Table B-6.3-1 (continued)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)*	Frequency of Detects
Hexachlorodibenzodioxin[1,2,3,7,8,9-]	Fill	4	4	3.97E-07 to 8.64E-06	4/4
Hexachlorodibenzodioxin[1,2,3,7,8,9-]	Qbt 3	7	1	[8.05E-08] to 1.26E-06	1/7
Hexachlorodibenzodioxins (Total)	Soil	2	1	[3.3E-07] to 6.32E-06	1/2
Hexachlorodibenzodioxins (Total)	Fill	7	4	4.01E-06 to [0.00087]	4/7
Hexachlorodibenzodioxins (Total)	Qbt 3	7	3	[8.43E-08] to 0.0000195	3/7
Hexachlorodibenzofuran[1,2,3,4,7,8-]	Soil	2	1	[8E-08] to 4.9E-07	1/2
Hexachlorodibenzofuran[1,2,3,4,7,8-]	Fill	4	4	4.08E-07 to 9.72E-06	4/4
Hexachlorodibenzofuran[1,2,3,4,7,8-]	Qbt 3	7	2	[1.97E-08] to 0.0000003	2/7
Hexachlorodibenzofuran[1,2,3,6,7,8-]	Soil	2	1	[8E-08] to 4.7E-07	1/2
Hexachlorodibenzofuran[1,2,3,6,7,8-]	Fill	4	4	2.37E-07 to 9.82E-06	4/4
Hexachlorodibenzofuran[1,2,3,6,7,8-]	Qbt 3	7	1	[1.85E-08] to 0.0000003	1/7
Hexachlorodibenzofuran[1,2,3,7,8,9-]	Fill	4	3	[9.47E-08] to 2.01E-06	3/4
Hexachlorodibenzofuran[2,3,4,6,7,8-]	Soil	2	1	[9E-08] to 6.4E-07	1/2
Hexachlorodibenzofuran[2,3,4,6,7,8-]	Fill	4	4	2.95E-07 to 0.0000129	4/4
Hexachlorodibenzofuran[2,3,4,6,7,8-]	Qbt 3	7	2	[2.04E-08] to 2.7E-07	2/7
Hexachlorodibenzofurans (Total)	Soil	2	1	[1.5E-07] to 6.27E-06	1/2
Hexachlorodibenzofurans (Total)	Fill	7	4	4.86E-06 to [0.0026]	4/7
Hexachlorodibenzofurans (Total)	Qbt 3	7	2	[2.76E-08] to 2.57E-06	2/7
Indeno(1,2,3-cd)pyrene	Fill	8	3	[0.0355] to [0.41]	3/8
Isopropyltoluene[4-]	Qbt 3	7	1	0.00076 to [0.0074]	1/7
Methylnaphthalene[2-]	Fill	8	1	[0.0371] to [0.41]	1/8
Naphthalene	Fill	8	1	0.0256 to [0.41]	1/8
Octachlorodibenzodioxin[1,2,3,4,6,7,8,9-]	Soil	2	1	[2.78E-06] to 0.0000484	1/2
Octachlorodibenzodioxin[1,2,3,4,6,7,8,9-]	Fill	7	6	0.000165 to 0.001	6/7
Octachlorodibenzodioxin[1,2,3,4,6,7,8,9-]	Qbt 3	7	5	[6.4E-07] to 0.0000257	5/7
Octachlorodibenzofuran[1,2,3,4,6,7,8,9-]	Soil	2	1	[1.11E-06] to 5.82E-06	1/2
Octachlorodibenzofuran[1,2,3,4,6,7,8,9-]	Fill	7	4	9.98E-06 to [0.0012]	4/7
Octachlorodibenzofuran[1,2,3,4,6,7,8,9-]	Qbt 3	7	3	[8.26E-08] to 2.45E-06	3/7
Pentachlorodibenzodioxin[1,2,3,7,8-]	Soil	2	1	[2.5E-07] to 3.4E-07	1/2
Pentachlorodibenzodioxin[1,2,3,7,8-]	Fill	4	3	[9.82E-08] to 6.49E-06	3/4
Pentachlorodibenzodioxin[1,2,3,7,8-]	Qbt 3	7	1	[6.46E-08] to 3.6E-07	1/7
Pentachlorodibenzodioxins (Total)	Soil	2	1	[2.5E-07] to 2.42E-06	1/2
Pentachlorodibenzodioxins (Total)	Fill	7	4	5.05E-07 to [0.0021]	4/7
Pentachlorodibenzodioxins (Total)	Qbt 3	7	1	[8.46E-08] to 9.7E-07	1/7
Pentachlorodibenzofuran[1,2,3,7,8-]	Fill	4	4	2.52E-07 to 5.73E-06	4/4
Pentachlorodibenzofuran[2,3,4,7,8-]	Soil	2	1	[1.6E-07] to 5.6E-07	1/2
Pentachlorodibenzofuran[2,3,4,7,8-]	Fill	4	4	4.79E-07 to 0.000013	4/4

Table B-6.3-1 (continued)

Analyte	Media	Number of Analyses	Number of Detects	Concentration Range (mg/kg)*	Frequency of Detects
Pentachlorodibenzofuran[2,3,4,7,8-]	Qbt 3	7	1	[7E-08] to 2.8E-07	1/7
Pentachlorodibenzofurans (Totals)	Soil	2	1	[1.6E-07] to 3.06E-06	1/2
Pentachlorodibenzofurans (Totals)	Fill	7	4	5.06E-06 to [0.00086]	4/7
Pentachlorodibenzofurans (Totals)	Qbt 3	7	1	[7.66E-08] to 0.0000009	1/7
Phenanthrene	Fill	8	4	0.0728 to [0.41]	4/8
Pyrene	Fill	8	5	0.072 to [0.41]	5/8
Tetrachlorodibenzodioxin[2,3,7,8-]	Fill	7	2	[8.95E-08] to [0.00011]	2/7
Tetrachlorodibenzodioxins (Total)	Fill	7	4	2.4E-07 to [0.00011]	4/7
Tetrachlorodibenzofuran[2,3,7,8-]	Fill	7	4	8.24E-07 to [0.00007]	4/7
Tetrachlorodibenzofuran[2,3,7,8-]	Qbt 3	7	1	[6.62E-08] to 6.2E-07	1/7
Tetrachlorodibenzofurans (Total)	Soil	2	1	[2.1E-07] to 9.2E-07	1/2
Tetrachlorodibenzofurans (Total)	Fill	7	4	5.71E-06 to 0.000153	4/7
Tetrachlorodibenzofurans (Total)	Qbt 3	7	2	[6.62E-08] to 0.0000019	2/7
Trichloro-1,2,2-trifluoroethane[1,1,2-]	Fill	8	2	0.002 to [0.006]	2/8

*Values in brackets indicate detection limits for nondetects.

Appendix C

Field Logs and Borehole Logs
(on CD included with this document)

Appendix D

Analytical Program

D-1.0 INTRODUCTION

This appendix discusses the analytical methods and the data quality review for analysis of samples collected at Consolidated Unit 73-002-99 at Los Alamos National Laboratory (the Laboratory).

Quality assurance (QA), quality control (QC), and data validation procedures were implemented in accordance with the "Quality Assurance Project Plan Requirements for Sampling and Analysis" (LANL 1996, 054609), and the statement of work (SOW) for analytical laboratories (LANL 2000, 071233). The results of the QA/QC procedures were used to estimate the accuracy, bias, and precision of the analytical measurements. Samples for QC include method blanks, matrix spikes (MS), laboratory-control samples (LCSs), internal standards (ISs), initial and continuing calibrations, surrogates, and tracers.

The type and frequency of laboratory QC analyses are described in the analytical laboratories SOW (LANL 1995, 049738; LANL 2000, 071233) along with the appropriate analytical methods. Other QC factors, such as sample preservation and holding times, were also assessed in accordance with the requirements outlined in Standard Operating Procedure (SOP) ED-DO-206, R0, "Sample Containers and Preservation." A focused data validation was performed for each data package and included a more detailed review of the data generated by the analytical laboratory. The analytical data, including all analyses, QC samples, rejected data tables, the data packages, chain-of-custody forms, and sample collection logs, are provided in Appendix E (on DVD).

Analytical data were reviewed and evaluated based on U.S. Environmental Protection Agency (EPA) national functional guidelines for inorganic and organic chemical data review, where applicable (EPA 1994, 048639; EPA 1999, 066649). As a result of the data validation and assessment efforts, data qualifiers are assigned to the analytical records as appropriate. The qualifiers used in the data validation process are defined in Appendix A.

Samples were collected in three sampling campaigns: (1) March 2006; (2) November 2006–January 2007; and (3) April–May 2007. Section D-2.0 presents the sampling results from the March 2006, section D-3.0 presents the sampling results from the November 2006–January 2007, and section D-4.0 presents the sampling results from the April–May 2007. The references cited in this appendix are listed in section D-5.0.

D-2.0 MARCH 2006 SAMPLING RESULTS

D-2.1 Summary of Inorganic Chemical Analysis

Samples collected at Consolidated Unit 73-002-99 in March 2006 were analyzed for inorganic chemicals using the analytical methods listed in Table D-2.1-1. A total of 117 samples were analyzed.

D-2.1.1 Summary of Inorganic Chemical Quality Assurance / Quality Control

All procedures were followed as required by the analytical laboratory SOW (LANL 2000, 071233) and applicable corresponding EPA SW-846 methodologies.

D-2.1.2 Maintenance of Chain of Custody

Chain-of-custody forms were properly maintained for all samples (Appendix E).

D-2.1.3 Sample Documentation

Samples were properly documented in the sample collection logs in the field (Appendix E).

D-2.1.4 Sample Dilutions

Dilutions were performed to minimize matrix interference resulting from elevated mineral concentrations in the soil samples and to bring the range of the target analyte concentrations into the range of the instruments. Samples were typically diluted a standard 2 times for solids on the inductively coupled plasma mass spectrometry (ICP-MS) with the exception of six samples that were diluted greater than 2 times. Thirteen samples for cyanide analysis were diluted because the analyte concentration was high. Two samples for cyanide analysis were diluted because the sample volume was in sufficient in the preparation stage. The dilution information for each sample is included in the data packages in Appendix E.

D-2.1.5 Sample Preservation

The preservation criteria were met for all samples.

D-2.1.6 Holding Times

Holding-time criteria were met for all samples.

D-2.1.7 Initial and Continuing Calibration Verifications

Initial calibration verification (ICV) and continuing calibration verification (CCV) were met for all but one sampling result. One result for mercury was qualified as rejected (R) because the associated ICV or CCV was recovered below the lower acceptance limit (LAL).

D-2.1.8 Analyte Identification

Analyte identification criteria were met for all samples.

D-2.1.9 Interference Check Sample and/or Serial Dilutions

Interference check sample and serial dilution criteria were met for all samples.

D-2.1.10 Laboratory Duplicates

A total of 131 sample results (detected) were qualified as estimated (J) because both the sample and laboratory duplicate results were greater than or equal to 5 times the reporting limit and the duplicate relative percent difference (RPD) was greater than 35%. Four sample results (undetected) were qualified as estimated not detected (UJ) because both the sample and laboratory duplicate results were greater than or equal to 5 times the reporting limit and the duplicate RPD was greater than 35%.

D-2.1.11 Method Blanks

A total of 45 sampling results were qualified as nondetected (U) because the results were less than 5 times the amount in the method blank.

D-2.1.12 Matrix Spikes

A total of 110 sampling results were qualified as estimated and biased high (J+) because the percent recoveries were above 150% in the associated spike sample.

A total of 149 sampling results were qualified as J+ because the percent recoveries were above 125% but less than 150% in the associated spike sample.

A total of 86 sampling results (detected) were qualified as estimated and biased low (J-) because the percent recoveries were below 75% but greater than 30% in the associated spike sample. A total of 74 results (undetected) were qualified as UJ because the percent recoveries were below 75% but greater than 30% in the associated spike sample.

A total of 15 sampling results for antimony were qualified as R because the associated MS recovery was less than 30%.

D-2.1.13 Laboratory Control Sample Recoveries

The laboratory control sample percent recovery was greater than the upper warning limit in 29 results and was qualified as J+.

D-2.2 Summary of Organic Chemical Analysis

Samples collected at Consolidated Unit 73-002-99 in March 2006 were analyzed for organic chemicals using the analytical methods listed in Table D-2.2-1. A total of 117 samples were analyzed for organic chemicals.

D-2.2.1 Summary of Organic Chemical Quality Assurance / Quality Control

All procedures were followed as required by the analytical laboratory SOW (LANL 2000, 071233) and applicable corresponding EPA SW-846 methodologies.

D-2.2.2 Maintenance of Chain of Custody

Chain-of-custody forms were properly maintained for all samples (Appendix E).

D-2.2.3 Sample Documentation

Samples were properly documented on the sample collection logs in the field (Appendix E).

D-2.2.4 Sample Dilutions

Because of the high analyte concentration, dilutions were performed during extraction to bring the target analyte concentrations into the range of the instruments. Twelve sampling results for semivolatile organic compound (SVOC) analysis, 42 results for polychlorinated biphenyl (PCBs), and 55 results for pesticides were diluted because of the presence of a dark color in the extract or an oily or viscous extract. The dilution information for each sample is included the data packages in Appendix E.

D-2.2.5 Sample Preservation

The preservation criteria were met for all samples.

D-2.2.6 Holding Times

Holding-time criteria were met for all samples.

D-2.2.7 Initial and Continuing Calibration Verifications

One detected volatile organic compounds (VOC) sampling result and 46 detected SVOC results were qualified as J because the internal standard areas were greater than 50% but less than or equal to 10% of the daily CCV internal standard areas. A total of 24 results for SVOCs were qualified as J because the initial calibration percent relative standard difference (%RSD) is greater than 30% or the continuing calibration percent difference (%D) is greater than 25%. Sixty results for pesticides/PCBs were qualified as J because the initial calibration %RSD is greater than 20% or the continuing calibration %D is greater than 15%.

A total of 617 sampling results for SVOCs were qualified as UJ because the initial calibration %RSD is greater than 30% or the continuing calibration %D is greater than 25%. A total of 366 sampling results for pesticides/PCBs were qualified as UJ because the initial calibration %RSD is greater than 20% or the continuing calibration %D is greater than 15%. A total of 464 sampling results for VOCs and 75 results for SVOCs were qualified as UJ because the internal standard areas were greater than 50% but less than or equal to 10% of the daily CCV internal standard areas, and the analyte was undetected. A total of 158 sampling results for VOCs were qualified as UJ because the continuing calibration analyte %D was greater than 25%.

Two SVOC sampling results for benzoic acid were qualified as R because the analyte minimum relative response factor (RRF) was less than 0.05 in the initial calibration.

D-2.2.8 Analyte Identification

Eight SVOC sampling results and 5 VOC results were qualified as not detected (U) because the associated mass spectrum did not meet method specifications.

D-2.2.9 Method Blanks

A total of 72 sampling results for SVOCs were qualified as J because the associated sample concentration was more than 5 times the amount in the method blank (10 times for common laboratory contaminants).

Ten sampling results for SVOCs, 96 results for VOCs, and 4 results for pesticides/PCBs were qualified as U because the associated sample concentration was less than 5 times the amount in the method blank (10 times for common laboratory contaminants).

D-2.2.10 Surrogate Recoveries and Internal Standard Responses

A total of 64 sampling results for SVOCs were qualified as UJ because the surrogate recoveries were less than the LAL but greater than or equal to 10%. Two sample results for pesticides/PCBs were qualified as

J- and 27 sampling results for pesticides/PCBs were qualified as UJ because the surrogate percent recoveries were less than the LAL but greater than or equal to 10%.

D-2.2.11 Laboratory Control Sample Recoveries

Six results for pesticides/PCBs were qualified as J because the associated LCS recovery was less than 70% but greater than 10%. Twenty-four sampling results for VOCs and 246 results for pesticides/PCBs were qualified as UJ because the associated LCS recovery was less than the LAL but greater than 10%.

D-2.2.12 Laboratory Duplicates

Laboratory duplicates collected for organic chemical analyses indicated acceptable precision.

D-2.3 Summary of Radionuclide Analysis

A total of 117 samples were collected at Consolidated Unit 73-002-99 in March 2006 were analyzed for radionuclides using the analytical methods listed in Table D-2.3-1.

D-2.3.1 Summary of Radionuclide Quality Assurance / Quality Control

All procedures were followed as required by the analytical laboratory SOW (LANL 2000, 071233).

D-2.3.2 Maintenance of Chain of Custody

Chain-of-custody forms were properly maintained for all samples (Appendix E).

D-2.3.3 Sample Documentation

Samples were properly documented on the sample collection logs in the field (Appendix E).

D-2.3.4 Sample Dilutions

Samples were not diluted for analyses.

D-2.3.5 Sample Preservation

Preservation criteria were met for all samples.

D-2.3.6 Holding times

All of the samples met the criteria for holding time.

D-2.3.7 Analyte Identification

A total of 103 sampling results for gamma spectroscopy (2 cobalt-60, 90 cesium-134, 7 cesium-137, 2 sodium-22, 1 ruthenium-106, and 1 uranium-235) were qualified as R because spectral interference prevented positive identification of the analytes.

D-2.3.8 Method Blanks

No sampling results were qualified because of the method blank data.

D-2.3.9 Matrix Spikes

The MS recoveries for radionuclide analyses were within acceptable limits for all the analyses.

D-2.3.10 Carrier and Tracer Recoveries

Two sampling results for isotopic uranium (1 uranium-234 and 1 uranium-238) were qualified as J-, and one sampling result for isotopic uranium (uranium-235) was qualified as UJ because the tracer carrier recovery was less than 30% but greater than or equal to 10%.

D-2.3.11 Laboratory Control Sample Recoveries

No sampling results were qualified because of LCS recoveries.

D-2.3.12 Laboratory Duplicates

Laboratory duplicates collected for radiological analyses indicated acceptable precision.

D-3.0 NOVEMBER 2006–JANUARY 2007 SAMPLING RESULTS

D-3.1 Summary of Inorganic Chemical Analysis

Samples collected at Consolidated Unit 73-002-99 in November 2006 to January 2007 were analyzed for inorganic chemicals using the analytical methods listed in Table D-2.1-1. A total of 100 samples were analyzed.

D-3.1.1 Summary of Inorganic Chemical QA/QC

All procedures were followed as required by the analytical laboratory SOW (LANL 2000, 071233) and applicable corresponding EPA SW-846 methodologies.

D-3.1.2 Maintenance of Chain of Custody

Chain-of-custody forms were properly maintained for all samples (Appendix E).

D-3.1.3 Sample Documentation

Samples were properly documented on the sample collection logs in the field (Appendix E).

D-3.1.4 Sample Dilutions

Dilutions were performed to minimize matrix interference resulting from elevated mineral concentrations in the soil samples and to bring the range of the target analyte concentrations into the range of the instruments. Samples were typically diluted a standard 2 times for solids analyzed by ICP-MS.

A total of 480 sampling results were diluted 2 times, 25 sample results were diluted 5 times (11 cadmium, 2 cobalt, 2 copper, 2 iron, 2 lead, 1 potassium, 2 selenium, 1 vanadium, and 2 zinc), and 6 samples were diluted 10 times (1 each cadmium, cobalt, iron, lead, selenium, and zinc). A total of 1873 sampling results were not diluted.

The dilution information for each sample is included in the data packages in Appendix E.

D-3.1.5 Sample Preservation

The preservation criteria were met for all samples.

D-3.1.6 Holding Times

Holding-time criteria were met for all samples.

D-3.1.7 Initial and Continuing Calibration Verifications

Seven sampling results were qualified UJ and one sampling result was qualified J- because the associated initial calibration verification or continuing calibration verification was recovered below the lower warning limit but greater than LAL.

D-3.1.8 Analyte Identification

Analyte identification criteria were met for all samples.

D-3.1.9 Interference Check Sample and/or Serial Dilutions

Eleven sampling results were qualified UJ and two sample results were qualified J- because the associated interference check sample was recovered below the lower warning limit but greater than or equal to the LAL.

Two sampling results were qualified J because the serial dilution sample RPD was greater than 10% and the result was greater than 50 times the method detection limit (MDL) (greater than 100 times the method detection limit for ICP-MS).

D-3.1.10 Laboratory Duplicates

A total of 61 sampling results were qualified as J, and 3 results were qualified as UJ because both the sample and laboratory duplicate results were greater than or equal to 5 times the reporting limit and the duplicate RPD was greater than 35%.

Eight sampling results were qualified as J, and one result was qualified as J- because either the sample or duplicate sampling results or both were greater than or equal to 5 times the reporting limit, and the difference between the samples was greater than 2 times the reporting limit.

D-3.1.11 Method Blanks

A total of 217 sampling results were qualified J because the results were between the estimated quantification limit and the MDL.

Nineteen sample results were qualified U because the results were less than 5 times the amount in the preparation blank.

D-3.1.12 Matrix Spikes

One sampling result was qualified as J, and one was qualified as UJ because the MS was analyzed on a non-Laboratory sample.

A total of 41 sampling results were qualified as J+ because the percent recoveries were above 150% in the associated spike sample.

A total of 96 sampling results were qualified as J+ because the analyte was recovered above the upper acceptance level but less than 150% of the associated spike sample.

A total of 39 sampling results were qualified as J- and 36 results were qualified as UJ because the analyte was recovered below the LAL but greater than 30% in the associated spike sample.

A total of 35 sample results (6 copper and 29 antimony) were qualified as R because the associated spike sample recovered less than 30%.

D-3.1.13 Laboratory Control Sample Recoveries

A total of 89 sample results were qualified J+ because the associated LCS was recovered above the upper warning limit.

D-3.2 Summary of Organic Chemical Analysis

Samples collected at Consolidated Unit 73-002-99 in November 2006 through January 2007 were analyzed for organic chemicals using the analytical methods used are listed in Table D-2.2-1. A total of 88 samples were analyzed for organic chemicals.

D-3.2.1 Summary of Organic Chemical Quality Assurance / Quality Control

All procedures were followed as required by the analytical laboratory SOW (LANL 2000, 071233) and applicable corresponding EPA SW-846 methodologies.

D-3.2.2 Maintenance of Chain of Custody

Chain-of-custody forms were maintained properly for all samples (Appendix E).

D-3.2.3 Sample Documentation

Samples were properly documented on the sample collection logs in the field (Appendix E).

D-3.2.4 Sample Dilutions

Because of the high analyte concentration, dilutions were performed during extraction to bring the target analyte concentrations into the range of the instruments..

A total of 210 sampling results for pesticide analysis, 63 results for PCB analysis, and 120 results for high explosives analysis were diluted. The dilution information for each sample is included the data packages in Appendix E.

D-3.2.5 Sample Preservation

The preservation criteria were met for all samples.

D-3.2.6 Holding Times

A total of 49 PCB sampling results were qualified UJ because the extraction holding time was exceeded.

D-3.2.7 Initial and Continuing Calibration Verifications

Twenty-two VOC sampling results were qualified as UJ because the associated %RSD/%D exceeded criteria in the initial or continuing calibration standards.

Seven SVOC sampling results were qualified as J, and 389 SVOC results were qualified as UJ because the associated %RSD/%D exceeded criteria in the initial or continuing calibration standards.

Twenty-eight pesticide sampling results were qualified as J, and 255 pesticide results were qualified as UJ because the associated %RSD/%D exceeded criteria in the initial or continuing calibration standards.

D-3.2.8 Analyte Identification

Seven SVOC sampling results were qualified as U because the associated mass spectrum did not meet method specifications.

D-3.2.9 Method Blanks

Ten SVOC sampling results and 1 PCB result were qualified as U because the associated sample concentration was less than 5 times (10 times for common laboratory contaminants) the amount in the method blank.

A total of 3 SVOC sampling results were qualified J because the associated sample concentration was greater than 5 times (10 times for common laboratory contaminants) the amount in the method blank.

D-3.2.10 Surrogate Recoveries and Internal Standard Responses

Six SVOC sampling results were qualified J because the associated the associated internal standard area counts were less than 50% but greater than 10% recovery when compared to the area counts in the applicable continuing calibration standard.

Two pesticide sampling results were qualified as J+ because the associated surrogate was recovered above the upper acceptance limit.

D-3.2.11 Laboratory Control Sample Recoveries

Six pesticide sampling results were qualified as UJ because the associated LCS percent recovery was less than 70% recovery but greater than or equal to 10% recovery.

D-3.2.12 Laboratory Duplicates

Laboratory duplicates collected for organic chemical analyses indicated acceptable precision.

D-3.3 Summary of Radionuclide Analysis

A total of 81 samples collected at Consolidated Unit 73-002-99 from November 2006 to January 2007 were analyzed for radionuclides using the analytical methods listed in Table D-2.3-1.

D-3.3.1 Summary of Radionuclide Quality Assurance / Quality Control

All procedures were followed as required by the analytical laboratory SOW (LANL 2000, 071233).

D-3.3.2 Maintenance of Chain of Custody

Chain-of-custody forms were properly maintained for all samples (Appendix E).

D-3.3.3 Sample Documentation

Samples were properly documented on the sample collection logs in the field (Appendix E).

D-3.3.4 Sample Dilutions

Samples were not diluted for analysis.

D-3.3.5 Sample Preservation

Preservation criteria were met for all samples.

D-3.3.6 Holding times

All of the samples met the criteria for holding time.

D-3.3.7 Analyte Identification

Eight gamma spectroscopy sample results for cesium-134 were qualified as R because spectral interference prevented positive identification of the analytes.

A total of 286 sampling results (65 americium-241, 56 plutonium-238, 39 plutonium-239, 5 uranium-235, 4 cesium-134, 8 cesium-137, 12 cobalt-60, 12 europium-152, 12 ruthenium-106, 12 sodium-22, 61 strontium-90) were qualified U because the associated sample concentration was less than or equal to the minimum detectable concentration.

Eight sampling results (3 americium-241, 1 plutonium-238, 2 plutonium-239, 2 uranium-235) were qualified U because the associated sample concentration was less than or equal to 3 times the total propagated uncertainty (TPU).

D-3.3.8 Method Blanks

Three alpha spectroscopy sampling results (1 americium-241 and 2 plutonium-239) were qualified nondetect (U) because the associated sample concentration was less than 5 times the amount in the method blank.

D-3.3.9 Matrix Spikes

The MS recoveries for radionuclide analyses were within acceptable limits for all the analyses.

D-3.3.10 Carrier and Tracer Recoveries

Four alpha spectroscopy sampling results (americium-241) were qualified as UJ because the associated tracer recovery was less than 30% but greater than 10%.

Seven alpha spectroscopy sampling results (americium-241) were qualified as R because the associated tracer recovery was less than 10%.

D-3.3.11 Laboratory Control Sample Recoveries

Thirty alpha spectroscopy sampling results (15 plutonium-238 and 15 plutonium-239) were qualified UJ because the associated LCS failed low but was greater than 10%.

D-3.3.12 Laboratory Duplicates

Eighteen alpha spectroscopy sampling results (7 plutonium-238, 6 plutonium-239, 5 uranium-235) were qualified as UJ, and 17 alpha spectroscopy results (1 plutonium-239, 7 uranium-234, 2 uranium-235, 7 uranium-238) were qualified as J because the duplicate documentation is missing, and validation cannot determine the precision of the analysis without this information.

D-4.0 APRIL–MAY 2007 SAMPLING RESULTS

D-4.1 Summary of Inorganic Chemical Analysis

Samples collected at Consolidated Unit 73-002-99 in April–May 2007 were analyzed for inorganic chemicals using the analytical methods listed in Table D-2.1-1. A total of 52 samples were analyzed.

D-4.1.1 Summary of Inorganic Chemical QA/QC

All procedures were followed as required by the analytical laboratory SOW (LANL 2000, 071233) and applicable corresponding EPA SW-846 methodologies.

D-4.1.2 Maintenance of Chain of Custody

Chain-of-custody forms were maintained properly for all samples (Appendix E).

D-4.1.3 Sample Documentation

Samples were properly documented in the sample collection logs in the field (Appendix E).

D-4.1.4 Sample Dilutions

Dilutions were performed to minimize matrix interference resulting from elevated mineral concentrations in the soil samples and to bring the range of the target analyte concentrations into the range of the instruments.

One sampling result for potassium was diluted 2.5 times.

The dilution information for each sample is included in the data packages in Appendix E.

D-4.1.5 Sample Preservation

The preservation criteria were met for all samples.

D-4.1.6 Holding Times

Holding-time criteria were met for all samples.

D-4.1.7 Initial and Continuing Calibration Verifications

Both ICV and CCV were met for all but 52 sample results. A total of 52 perchlorate sampling results were qualified R because an ICV or CCV was not analyzed with the samples.

D-4.1.8 Analyte Identification

Analyte identification criteria were met for all samples.

D-4.1.9 Interference Check Sample and/or Serial Dilutions

Five sampling results were qualified J because the serial dilution sample RPD was greater than 10%, and the sampling result was greater than 50 times the MDL (greater than 100 times the MDL for ICP-MS).

D-4.1.10 Laboratory Duplicates

A total of 36 sampling results were qualified as J because both the sample and duplicate sampling results were greater than or equal to 5 times the reporting limit and the duplicate RPD was greater than 35%.

D-4.1.11 Method Blanks

A total of 179 sample results were qualified J because the results were between the estimated quantification limit (EQL) and the MDL.

A total of 29 sample results were qualified U because the results are less than 5 times the amount in the preparation blank.

D-4.1.12 Matrix Spikes

Eighteen sampling results were qualified J+ because the analyte was recovered above 150% in the associated spike sample.

Twenty-seven sampling results were qualified J+ because the analyte was recovered above the upper acceptance level but less than 150% of the associated spike sample.

Thirteen sampling results were qualified UJ because the analyte was recovered below the LAL but greater than 30% in the associated spike sample.

A total of 87 sampling results were qualified J- because the analyte was recovered below the lower LAL but greater than 30% in the associated spike sample.

Twenty-four sampling results (12 lead and 12 silver) were qualified R because the associated spike sample recovered less than 30%.

D-4.1.13 Laboratory Control Sample Recoveries

The LCS sample recovery criteria were met for all samples.

D-4.2 Summary of Organic Chemical Analysis

Samples collected at Consolidated Unit 73-002-99 from April to May 2007 were analyzed for organic chemicals using the analytical methods listed in Table D-2.2-1. A total of 59 samples were analyzed.

D-4.2.1 Summary of Organic Chemical QA/QC

All procedures were followed as required by the analytical laboratory SOW (LANL 2000, 071233) and applicable corresponding EPA SW-846 methodologies.

D-4.2.2 Maintenance of Chain of Custody

Chain-of-custody forms were properly maintained for all samples (Appendix E).

D-4.2.3 Sample Documentation

Samples were properly documented on the sample collection logs in the field (Appendix E).

D-4.2.4 Sample Dilutions

Because of the high analyte concentration, dilutions were performed during extraction to bring the range of target analyte concentrations into the range of the instruments.

A total of 20 sampling results for high explosive analysis were diluted 2 times.

A total of 24 sampling results for pesticide analysis were diluted 10 times.

One sampling result for pesticide analysis was diluted 20 times.

The dilution information for each sample is included the data packages in Appendix E.

D-4.2.5 Sample Preservation

The preservation criteria were met for all samples.

D-4.2.6 Holding Times

The holding times were met for all samples.

D-4.2.7 Initial and Continuing Calibration Verifications

Six sampling results from SVOC analysis were qualified UJ because the associated %RSD/%D exceeded the criteria in the initial or continuing calibration standards.

Seven sampling results from PCB analysis were qualified UJ because the associated %RSD/%D exceeded criteria in the initial or continuing calibration standards.

One sampling result from pesticide analysis was qualified J because the associated %RSD/%D exceeded criteria in the initial or continuing calibration standards.

D-4.2.8 Analyte Identification

Analyte identification criteria were met for all samples.

D-4.2.9 Method Blanks

Two sampling results from SVOC analysis were qualified U because the associated sample concentration was less than 5 times (10 times for common laboratory contaminants) the amount in the method blank.

D-4.2.10 Surrogate Recoveries and Internal Standard Responses

The surrogate recovery criteria and internal standard response criteria were met for all samples.

D-4.2.11 Laboratory Control Sample Recoveries

A total of 34 sampling results for SVOC analysis were qualified UJ because the associated LCS recovery was below the LAL but greater than 10% recovery.

D-4.2.12 Laboratory Duplicates

Laboratory duplicates collected for inorganic chemical analysis indicated acceptable precision.

D-4.3 Summary of Radionuclide Analysis

A total of 51 samples were collected at Consolidated Unit 73-002-99 from April to May 2007 and analyzed for radionuclides using the analytical methods listed in Table D-2.3-1.

D-4.3.1 Summary of Radionuclide Quality Assurance / Quality Control

All procedures were followed as required by the analytical laboratory SOW (LANL 2000, 071233).

D-4.3.2 Maintenance of Chain of Custody

Chain-of-custody forms were properly maintained for all samples (Appendix E).

D-4.3.3 Sample Documentation

Samples were properly documented on the sample collection logs in the field (Appendix E).

D-4.3.4 Sample Dilutions

Because of the high analyte concentration, dilutions were preformed during extraction to bring the range of the target analyte concentrations into the range of the instruments.

A total of 29 sampling results for radionuclide analysis were diluted 2 times (5 americium-241, 8 uranium-234, 8 uranium-235, and 8 uranium-238).

The dilution information for each sample is included in the data packages in (Appendix E).

D-4.3.5 Sample Preservation

Preservation criteria were met for all samples.

D-4.3.6 Holding times

All of the samples met the criteria for holding time.

D-4.3.7 Analyte Identification

A total of 242 sampling results (36 americium-241, 37 plutonium-238, 26 plutonium-239, 8 uranium-235, 14 cesium-134, 14 cesium-137, 14 cobalt-60, 14 europium-152, 14 ruthenium-106, 14 sodium-22, and 51 strontium-90) were qualified U because the associated sample concentration was less than or equal to the MDC.

Nine sampling results for alpha spectroscopy (3 americium-241, 3 plutonium-238, 3 plutonium-239) were qualified R because the MDC or TPU documentation is missing, and validation cannot proceed without this information.

Twelve alpha spectroscopy sampling results (2 americium-241, 7 plutonium-238, and 3 plutonium-239) were qualified R because spectral interference prevents positive identification of the analytes.

D-4.3.8 Method Blanks

No sampling results were qualified because of the method blank data.

D-4.3.9 Matrix Spikes

All of the sampling results met the criteria for matrix spikes.

D-4.3.10 Carrier and Tracer Recoveries

Nineteen sampling results for alpha spectroscopy (8 uranium-234, 3 uranium-235, 8 uranium-238) were qualified as J- because the associated tracer recovery was less than 30% but greater than 10%.

Seven sampling results for alpha spectroscopy (2 americium-241, 5 uranium-235) were qualified UJ because the associated tracer recovery was less than 30% but greater than 10%.

D-4.3.11 Laboratory Control Sample Recoveries

All of the sampling results met the LCS recovery criteria.

D-4.3.12 Laboratory Duplicates

Ten sampling results for alpha spectroscopy (4 uranium-234, 2 uranium-235, and 4 uranium-238) were qualified as J because the associated duplicate sample has a duplicate error ratio of greater than 2 but less than 4.

D-5.0 REFERENCES

The following list includes all documents cited in this appendix. Parenthetical information following each reference provides the author(s), publication date, and ER ID number. This information is also included in text citations. ER ID numbers are assigned by the Environmental Programs Directorate's Records Processing Facility (RPF) and are used to locate the document at the RPF and, where applicable, in the Directorate's 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. Environmental Protection Agency, Region 6; and the Directorate's. 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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Table D-2.1-1
Inorganic Chemical Analytical Methods

Analytical Method	Analytical Description	Target Compound List
SW-846: 6010B	ICP–atomic emission spectroscopy	Aluminum, antimony, arsenic, barium, beryllium, boron, calcium, cadmium, cobalt, chromium, copper, iron, lead, lithium, magnesium, manganese, mercury, nickel, potassium, selenium, silicon, silver, sodium, thallium, titanium, uranium, vanadium, and zinc (target analyte list [TAL] metals)
SW-846: 6020	ICP-MS	Aluminum, antimony, arsenic, barium, beryllium, boron, calcium, cadmium, cobalt, chromium, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, silicon, silver, sodium, thallium, titanium, vanadium, and zinc
EPA Method: 300.0	Ion chromatography	Anions
SW-846: 9012A	Colorimetric ultraviolet method	Cyanide (total)
SW-846: 7471A	Cold vapor atomic absorption	Mercury
SW-846: 6850	High performance liquid chromatography/ electrospray ionization/mass spectrometry	Perchlorate

Table D-2.2-1
Organic Chemical Analytical Methods

Analytical Method	Analytical Description	Target Compound List
SW-846: 8260B	VOCs	See analytical services SOW (LANL 2000, 71233)
SW-846: 8270C	SVOCs	See analytical services SOW (LANL 2000, 71233)
SW-846: 8082	PCBs	See analytical services SOW (LANL 2000, 71233)
SW-846: 8290	Dioxins and furans	See analytical services SOW (LANL 2000, 71233)
SW-846: 8081A	Pesticides	See analytical services SOW (LANL 2000, 71233)
SW-846: 8321A	Explosive compounds	See analytical services SOW (LANL 2000, 71233)

Table D-2.3-1
Radionuclide Analytical Methods

Analytical Method	Analytical Description	Target Compound List
HASL-300: Am-241	Alpha spectroscopy	Americium-241
EPA Method: 901.1 Generic: gamma spectroscopy	Gamma spectroscopy	Americium-241, cesium-137, cesium-134, cobalt-60, europium-152, ruthenium-106, sodium-22, uranium-235
HASL-300: ISOPU	Alpha spectroscopy	Isotopic plutonium
HASL-300: ISOU	Alpha spectroscopy	Isotopic uranium
EPA Method: 905.0 ASTM:D5811-95M	Gas proportional counting	Strontium-90

Appendix E

Analytical Reports
(on DVD and CD included with this document)

Appendix F

Waste Disposal and Documentation
(on CD included with this document)

This appendix contains documentation regarding the characterization, packaging, staging, transportation, and disposal of ash, debris, and investigation-derived waste (IDW) from the remediation of Solid Waste Management Units (SWMUs) 73-002, a former incinerator and ash surface disposal area, 73-004(b), a former septic system for a steam cleaning facility, and 73-006, drainlines from a former waste incinerator, at Technical Area (TA) 73 at Los Alamos National Laboratory (the Laboratory). The waste generated from the removal activities at SWMU 73-006 were managed and disposed of along with the wastes from SWMU 73-002. The waste streams generated from the implementation of investigation and remediation activities included (1) metallic debris collected outside of the ash disposal area, which primarily consisted of cans, without visible ash; (2) ash and impacted soil containing asbestos-containing material (ACM) and debris which included old car parts, cans, tires, bricks, rubber, stainless-steel pipe, and other miscellaneous metal debris; (3) impacted soil with debris, which primarily consisted of cans without ACM; (4) soil contaminated with low concentrations of polychlorinated biphenyls (PCBs) (<10 mg/kg PCBs) removed from the SWMU 73-004(b) septic-system outfall area; (5) decontamination water from the decontamination of sampling and excavation equipment; (6) drill cuttings; and (7) IDW including personal protective equipment (PPE), disposable sampling equipment, plastic sheeting, decontamination supplies, etc. The containers for all these waste streams were managed on-site and labeled in accordance with applicable regulatory requirements pending transport and disposal paperwork. The waste streams were profiled through the Laboratory's Waste Services department for approval of final disposition of the waste.

The ash and ash-containing debris wastes at SWMU 73-002 were characterized as low-level waste (LLW) containing ACM. These wastes were collected by excavation and/or vacuuming and placed in IP1 super-sacs or into lined, tarped roll-off containers. Once the containers were full, the waste was taken from the waste load-out area between the incinerator and ash pile and placed in a fenced waste accumulation area within the airport parking lot, which was posted with radioactive waste and ACM placards.

The waste stream consisting of miscellaneous debris collected outside of the ash pile that had no visible signs of ash was determined to be industrial waste (pending field screening to verify the absence of radiological contamination) and was disposed at off-site landfills. Five shipments of debris removed from the site in November 2005, comprising a total of 22.9 tons, were incorrectly disposed at the Los Alamos county landfill instead of an industrial landfill, as required by the approved work plan (ITSI 2005, 094312). Because this waste was not disposed of in accordance with the work plan, the New Mexico Environment Department (NMED) required the Department of Energy (DOE) to provide additional information on the waste stream, including copies of all manifests, shipping documents, certifications, disposal facility receipts, and waste characterization analytical data (NMED 2005, 092425). DOE provided this information to NMED on January 18, 2006, and it has not been resubmitted in this appendix (DOE 2006, 096979). Table F-1 summarizes the nine loads of debris collected outside of the ash pile in October 2006 that were disposed at the Waste Management landfill in Rio Rancho, NM. Manifests for these nine loads are included on the attached CD.

Characterization of the ash and associated debris waste stream was based on waste characterization data from samples of ash collected in situ. Initial characterization was based on sampling performed by ITSI in 2005 (ITSI 2005, 096980). Additional characterization was based on sampling performed during the implementation of the approved work plan. Characterization results showed that the waste did not exhibit any characteristic of hazardous waste. Although several hazardous constituents potentially associated with listed hazardous wastes were detected at trace levels, NMED concurred that the ash and associated debris did not contain any listed hazardous waste (NMED 2006, 093544). The approved work plan (ITSI 2005, 094312) specified that ash and ash-containing debris would be disposed of as LLW at the EnviroCare disposal facility in Utah. NMED later approved a deviation from the work plan allowing disposal of these wastes at the Laboratory's Area G LLW disposal site (NMED 2006, 093544). On October 9, 2006, materials that were considered to be potentially asbestos-containing in the ash were

observed and the waste was re-sampled for asbestos. Waste characterization data confirmed that the waste stream contained ACM, and the waste characterization strategy form was amended to include the new waste stream. The waste stream comprised of ash with associated debris was handled as a LLW with ACM and disposed at Area G at TA-54. Table F-2 summarizes the 178 loads of ash and associated debris that were disposed of at Area G within TA-54. Manifests for these 178 loads are included on the attached CD.

The impacted soil and debris removed in April and May 2007 were sampled to determine that this waste stream did not contain ACM since the ash had been removed previously. The impacted soil and debris was determined to still be LLW. This waste stream was managed in accordance with the approved work plan deviation as LLW and was disposed at Area G, TA-54. Table F-3 summarizes the 26 loads of impacted soil and associated debris that have been disposed at Area G within TA-54. Manifests for these 26 loads are included on the attached CD. An additional 8 containers are scheduled to be disposed at Area G, TA-54, during the week of July 7, 2007. As a result, manifests for these eight loads are not included on the attached CD.

The soil removed from the outfall area of SWMU 73-004(b) was placed in lined, tarped roll-off containers and stored in the waste storage area in the airport parking lot. This waste contains PCBs but was determined to be nonregulated soil (<10 mg/kg PCB) and is scheduled to be disposed at the Waste Management landfill in Rio Rancho, NM, during the week of July 7, 2007. As a result, manifests for these two loads are not included on the attached CD.

The decontamination water was containerized in drums and stored in the waste management area within the airport parking lot. The decontamination water was characterized as LLW and was managed at Area G at TA-54. Table F-4 includes summary information on shipments of these waste, and the manifests are included on the attached CD.

Drill cuttings were containerized in drums and stored within the waste storage area of the airport parking lot. Two drums of drill cuttings contained elevated levels of selenium that were presumed to be RCRA characteristic waste, and a less-than-90-day hazardous waste accumulation area was established within the overall waste storage area for the management of these drums. These drums were then shipped to TA-54 as presumed Resource Conservation and Recovery Act (RCRA) characteristic hazardous wastes. The manifests for shipment of these wastes to TA-54 are included on the attached CD. The remaining IDW was characterized and determined to be LLW and was disposed of at Area G at TA-54. Table F-4 includes summary information on shipments of these waste and manifests are included on the attached CD.

REFERENCES

The following list includes all documents cited in this appendix. Parenthetical information following each reference provides the author(s), publication date, and ER ID number. This information is also included in text citations. ER ID numbers are assigned by the Environmental Programs Directorate's Records Processing Facility (RPF) and are used to locate the document at the RPF and, where applicable, in the Directorate's 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. Environmental Protection Agency, Region 6; and the Directorate's. 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.

DOE (U.S. Department of Energy), January 18, 2006. "Request for Information Regarding the Corrective Action Activities at Solid Waste Management Unit (SWMU) 73-002 (Incinerator Ash Removal)," U.S. Department of Energy letter to J.P. Bearzi (NMED HWB) from J.C. Ordaz (DOE), Los Alamos, New Mexico. (DOE 2006, 096979)

ITSI (Innovative Technical Solutions, Inc.), July 2005. "Technical Memorandum, Results of Incinerator Ash Waste Characterization, Corrective Action for SWMU 73-002 (Incinerator Ash Removal), Los Alamos National Laboratory, New Mexico," prepared for U.S. Army Corps of Engineers and Los Alamos National Laboratory, Walnut Creek, California. (ITSI 2005, 096980)

ITSI (Innovative Technical Solutions, Inc.), September 22, 2005. "Work Plan for Corrective Action of SWMU 73-002 and Investigation of Consolidated Unit 73-002-99," prepared for U.S. Army Corps of Engineers and Los Alamos National Laboratory, Walnut Creek, California. (ITSI 2005, 094312)

NMED (New Mexico Environment Department), December 19, 2005. "Request for Information Regarding the Corrective Action Activities at Solid Waste Management Unit (SWMU) 73-002 (Incinerator Ash Removal)," New Mexico Environment Department letter to E. Wilmot (DOE LASO) and R.W. Kuckuck (LANL Director) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2005, 092425)

NMED (New Mexico Environment Department), August 7, 2006. "Request for Deviation for Management of Waste Generated During Corrective Action of Solid Waste Management Unit (SWMU) 73-002," New Mexico Environment Department letter to D. Gregory (DOE LASO) and D. McInroy (LANL) from J.P. Bearzi (NMED-HWB), Los Alamos, New Mexico. (NMED 2006, 093544)

Table F-1
Summary of Waste Shipment/Disposal for Debris from Outside Ash Pile

Universal Waste Manifest Number	What	Where	Volume (Kg)	Date Received
000363554	Debris	RRLF*	4536	10/24/2006
000363553	Debris	RRLF	4536	10/24/2006
000363551	Debris	RRLF	4536	10/24/2006
000363550	Debris	RRLF	4536	10/24/2006
000363547	Debris	RRLF	4536	10/24/2006
000363546	Debris	RRLF	4536	10/24/2006
000363543	Debris	RRLF	4536	10/24/2006
000363544	Debris	RRLF	4536	10/24/2006
000363545	Debris	RRLF	4536	10/24/2006

*RRLF = Rio Rancho Landfill.

Table F-2
Summary of Waste Shipment/Disposal for ACM-Containing Ash/Debris

WDR#	Container ID	WM#	What	Where	Volume (m^3)	Date Received
3020470	L06188339	25345	Asbestos	TA-54 Area G	11.47	11/1/2006
3020492	L06188573	25345	Asbestos	TA-54 Area G	11.47	11/7/2006
3020492	L06188574	25345	Asbestos	TA-54 Area G	11.47	11/7/2006
3020492	L06188575	25345	Asbestos	TA-54 Area G	11.47	11/7/2006
3020492	L06188576	25345	Asbestos	TA-54 Area G	11.47	11/7/2006
3020492	L06188577	25345	Asbestos	TA-54 Area G	11.47	11/7/2006
3020492	L06188578	25345	Asbestos	TA-54 Area G	11.47	11/7/2006
3020492	L06188579	25345	Asbestos	TA-54 Area G	11.47	11/7/2006
3020492	L06188580	25345	Asbestos	TA-54 Area G	11.47	11/7/2006
3020492	L06188581	25345	Asbestos	TA-54 Area G	11.47	11/7/2006
3020492	L06188582	25345	Asbestos	TA-54 Area G	11.47	11/8/2006
3020492	L06188583	25345	Asbestos	TA-54 Area G	11.47	11/8/2006
3020498	L06188584	25345	Asbestos	TA-54 Area G	11.47	11/1/2006
3020498	L06188585	25345	Asbestos	TA-54 Area G	11.47	11/1/2006
3020498	L06188586	25345	Asbestos	TA-54 Area G	11.47	11/1/2006
3020498	L06188587	25345	Asbestos	TA-54 Area G	11.47	11/1/2006
3020498	L06188588	25345	Asbestos	TA-54 Area G	11.47	11/2/2006
3020498	L06188589	25345	Asbestos	TA-54 Area G	11.47	11/2/2006
3020498	L06188590	25345	Asbestos	TA-54 Area G	11.47	11/2/2006
3020498	L06188591	25345	Asbestos	TA-54 Area G	11.47	11/2/2006
3020498	L06188592	25345	Asbestos	TA-54 Area G	11.47	11/6/2006
3020498	L06188593	25345	Asbestos	TA-54 Area G	11.47	11/6/2006
3020498	L06188594	25345	Asbestos	TA-54 Area G	11.47	11/6/2006
3020498	L06188595	25345	Asbestos	TA-54 Area G	11.47	11/6/2006
3020498	L06188596	25345	Asbestos	TA-54 Area G	11.47	11/7/2006
3020498	L06188597	25345	Asbestos	TA-54 Area G	11.47	11/7/2006
3020498	L06188598	25345	Asbestos	TA-54 Area G	11.47	11/7/2006
3020499	L06188599	25345	Asbestos	TA-54 Area G	11.47	11/1/2006
3020499	L06188600	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020499	L06188601	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020499	L06188602	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020499	L06188603	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020499	L06188604	25345	Asbestos	TA-54 Area G	11.47	11/1/2006
3020499	L06188605	25345	Asbestos	TA-54 Area G	11.47	11/1/2006
3020499	L06188606	25345	Asbestos	TA-54 Area G	11.47	11/1/2006
3020499	L06188607	25345	Asbestos	TA-54 Area G	11.47	11/1/2006
3020499	L06188608	25345	Asbestos	TA-54 Area G	11.47	11/1/2006

Table F-2 (continued)

WDR#	Container ID	WM#	What	Where	Volume (m^3)	Date Received
3020499	L06188609	25345	Asbestos	TA-54 Area G	11.47	11/1/2006
3020499	L06188610	25345	Asbestos	TA-54 Area G	11.47	11/1/2006
3020499	L06188611	25345	Asbestos	TA-54 Area G	11.47	11/1/2006
3020499	L06188612	25345	Asbestos	TA-54 Area G	11.47	11/1/2006
3020499	L06188613	25345	Asbestos	TA-54 Area G	11.47	11/1/2006
3020502	L06188616	25345	Asbestos	TA-54 Area G	11.47	10/30/2006
3020502	L06188618	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020502	L06188619	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020502	L06188620	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020502	L06188621	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020502	L06188622	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020502	L06188623	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020502	L06188624	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020502	L06188625	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020502	L06188626	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020502	L06188627	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020502	L06188628	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020502	L06188630	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020502	L06188631	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020502	L06188632	25345	Asbestos	TA-54 Area G	11.47	10/31/2006
3020503	L06188633	25345	Asbestos	TA-54 Area G	11.47	10/30/2006
3020503	L06188634	25345	Asbestos	TA-54 Area G	11.47	10/30/2006
3020503	L06188635	25345	Asbestos	TA-54 Area G	11.47	10/30/2006
3020503	L06188636	25345	Asbestos	TA-54 Area G	11.47	10/30/2006
3020503	L06188637	25345	Asbestos	TA-54 Area G	11.47	10/30/2006
3020503	L06188638	25345	Asbestos	TA-54 Area G	11.47	10/30/2006
3020503	L06188639	25345	Asbestos	TA-54 Area G	11.47	10/30/2006
3020503	L06188640	25345	Asbestos	TA-54 Area G	11.47	10/30/2006
3020503	L06188641	25345	Asbestos	TA-54 Area G	11.47	10/30/2006
3020503	L06188642	25345	Asbestos	TA-54 Area G	11.47	10/30/2006
3020533	L06188643	25345	Asbestos	TA-54 Area G	11.47	11/8/2006
3020533	L06188644	25345	Asbestos	TA-54 Area G	11.47	11/8/2006
3020533	L06188645	25345	Asbestos	TA-54 Area G	11.47	11/8/2006
3020533	L06188646	25345	Asbestos	TA-54 Area G	11.47	11/8/2006
3020533	L06188647	25345	Asbestos	TA-54 Area G	11.47	11/8/2006
3020533	L06188648	25345	Asbestos	TA-54 Area G	11.47	11/8/2006
3020533	L06188649	25345	Asbestos	TA-54 Area G	11.47	11/8/2006
3020533	L06188650	25345	Asbestos	TA-54 Area G	11.47	11/8/2006
3020533	L06188651	25345	Asbestos	TA-54 Area G	11.47	11/8/2006

Table F-2 (continued)

WDR#	Container ID	WM#	What	Where	Volume (m^3)	Date Received
3020533	L06188652	25345	Asbestos	TA-54 Area G	11.47	11/8/2006
3020533	L06188653	25345	Asbestos	TA-54 Area G	11.47	11/8/2006
3020533	L06188655	25345	Asbestos	TA-54 Area G	11.47	11/8/2006
3020533	L06188656	25345	Asbestos	TA-54 Area G	11.47	11/8/2006
3020533	L06188657	25345	Asbestos	TA-54 Area G	11.47	11/9/2006
3020539	L06188659	25345	Asbestos	TA-54 Area G	11.47	11/9/2006
3020539	L06188660	25345	Asbestos	TA-54 Area G	11.47	11/9/2006
3020539	L06188661	25345	Asbestos	TA-54 Area G	11.47	11/9/2006
3020539	L06188662	25345	Asbestos	TA-54 Area G	11.47	11/9/2006
3020539	L06188663	25345	Asbestos	TA-54 Area G	11.47	11/9/2006
3020539	L06188664	25345	Asbestos	TA-54 Area G	11.47	11/9/2006
3020539	L06188665	25345	Asbestos	TA-54 Area G	11.47	11/9/2006
3020539	L06188666	25345	Asbestos	TA-54 Area G	11.47	11/9/2006
3020539	L06188667	25345	Asbestos	TA-54 Area G	11.47	11/9/2006
3020539	L06188668	25345	Asbestos	TA-54 Area G	11.47	11/9/2006
3020539	L06188669	25345	Asbestos	TA-54 Area G	11.47	11/9/2006
3020539	L06188670	25345	Asbestos	TA-54 Area G	11.47	11/13/2006
3020539	L06188671	25345	Asbestos	TA-54 Area G	11.47	11/13/2006
3020539	L06188672	25345	Asbestos	TA-54 Area G	11.47	11/13/2006
3020539	L06188673	25345	Asbestos	TA-54 Area G	11.47	11/13/2006
3020540	L06188675	25345	Asbestos	TA-54 Area G	11.47	11/13/2006
3020540	L06188676	25345	Asbestos	TA-54 Area G	11.47	11/13/2006
3020540	L06188677	25345	Asbestos	TA-54 Area G	11.47	11/13/2006
3020540	L06188678	25345	Asbestos	TA-54 Area G	11.47	11/13/2006
3020540	L06188679	25345	Asbestos	TA-54 Area G	11.47	11/13/2006
3020540	L06188680	25345	Asbestos	TA-54 Area G	11.47	11/13/2006
3020540	L06188681	25345	Asbestos	TA-54 Area G	11.47	11/13/2006
3020540	L06188682	25345	Asbestos	TA-54 Area G	11.47	11/13/2006
3020540	L06188683	25345	Asbestos	TA-54 Area G	11.47	11/14/2006
3020540	L06188684	25345	Asbestos	TA-54 Area G	11.47	11/14/2006
3020540	L06188685	25345	Asbestos	TA-54 Area G	11.47	11/14/2006
3020540	L06188686	25345	Asbestos	TA-54 Area G	11.47	11/14/2006
3020540	L06188687	25345	Asbestos	TA-54 Area G	11.47	11/14/2006
3020540	L06188688	25345	Asbestos	TA-54 Area G	11.47	11/15/2006
3020540	L06188689	25345	Asbestos	TA-54 Area G	11.47	11/15/2006
3020545	L06188708	25345	Asbestos	TA-54 Area G	11.47	11/28/2006
3020545	L06188709	25345	Asbestos	TA-54 Area G	11.47	11/28/2006
3020545	L06188710	25345	Asbestos	TA-54 Area G	11.47	11/28/2006
3020545	L06188711	25345	Asbestos	TA-54 Area G	11.47	11/28/2006

Table F-2 (continued)

WDR#	Container ID	WM#	What	Where	Volume (m^3)	Date Received
3020545	L06188712	25345	Asbestos	TA-54 Area G	11.47	11/28/2006
3020545	L06188713	25345	Asbestos	TA-54 Area G	11.47	11/29/2006
3020545	L06188714	25345	Asbestos	TA-54 Area G	11.47	11/29/2006
3020545	L06188715	25345	Asbestos	TA-54 Area G	11.47	11/29/2006
3020545	L06188716	25345	Asbestos	TA-54 Area G	11.47	11/29/2006
3020545	L06188717	25345	Asbestos	TA-54 Area G	11.47	11/29/2006
3020545	L06188718	25345	Asbestos	TA-54 Area G	11.47	11/29/2006
3020545	L06188719	25345	Asbestos	TA-54 Area G	11.47	11/29/2006
3020545	L06188720	25345	Asbestos	TA-54 Area G	11.47	11/29/2006
3020545	L06188721	25345	Asbestos	TA-54 Area G	11.47	11/29/2006
3020545	L06188722	25345	Asbestos	TA-54 Area G	11.47	11/29/2006
3020603	L06189033	25345	Asbestos	TA-54 Area G	11.47	12/5/2006
3020603	L06189034	25345	Asbestos	TA-54 Area G	11.47	12/5/2006
3020603	L06189035	25345	Asbestos	TA-54 Area G	11.47	12/12/2006
3020603	L06189036	25345	Asbestos	TA-54 Area G	11.47	12/12/2006
3020603	L06189037	25345	Asbestos	TA-54 Area G	11.47	12/12/2006
3020603	L06189038	25345	Asbestos	TA-54 Area G	11.47	12/12/2006
3020603	L06189039	25345	Asbestos	TA-54 Area G	11.47	12/12/2006
3020603	L06189040	25345	Asbestos	TA-54 Area G	11.47	12/12/2006
3020603	L06189041	25345	Asbestos	TA-54 Area G	11.47	12/12/2006
3020603	L06189042	25345	Asbestos	TA-54 Area G	11.47	12/12/2006
3020603	L06189043	25345	Asbestos	TA-54 Area G	11.47	12/19/2006
3020603	L06189044	25345	Asbestos	TA-54 Area G	11.47	12/19/2006
3020603	L06189045	25345	Asbestos	TA-54 Area G	11.47	12/19/2006
3020603	L06189046	25345	Asbestos	TA-54 Area G	11.47	12/19/2006
3020603	L06189047	25345	Asbestos	TA-54 Area G	11.47	12/19/2006
3020604	L06189151	25345	Asbestos	TA-54 Area G	11.47	12/19/2006
3020604	L06189152	25345	Asbestos	TA-54 Area G	11.47	12/19/2006
3020604	L06189153	25345	Asbestos	TA-54 Area G	11.47	12/19/2006
3020604	L06189154	25345	Asbestos	TA-54 Area G	11.47	1/3/2007
3020604	L06189155	25345	Asbestos	TA-54 Area G	11.47	1/3/2007
3020604	L06189156	25345	Asbestos	TA-54 Area G	11.47	1/3/2007
3020604	L06189157	25345	Asbestos	TA-54 Area G	11.47	1/3/2007
3020604	L06189158	25345	Asbestos	TA-54 Area G	11.47	1/8/2007
3020604	L06189159	25345	Asbestos	TA-54 Area G	11.47	1/8/2007
3020604	L06189161	25345	Asbestos	TA-54 Area G	11.47	1/8/2007
3020474	L06188342	25344	Asbestos	TA-54 Area G	11.47	10/26/2006
3020485	L06188329	25345	Asbestos	TA-54 Area G	11.47	10/30/2006
3020477	L06188338	25345	Asbestos	TA-54 Area G	11.47	10/27/2006

Table F-2 (continued)

WDR#	Container ID	WM#	What	Where	Volume (m^3)	Date Received
3020478	L06188335	25345	Asbestos	TA-54 Area G	11.47	10/27/2006
3020475	L06188341	25345	Asbestos	TA-54 Area G	11.47	10/27/2006
3020476	L06188337	25345	Asbestos	TA-54 Area G	11.47	10/27/2006
3020486	L06188331	25345	Asbestos	TA-54 Area G	11.47	10/27/2006
3020488	L06188333	25345	Asbestos	TA-54 Area G	11.47	10/27/2006
3020487	L06188332	25345	Asbestos	TA-54 Area G	11.47	10/27/2006
3020479	L06188336	25345	Asbestos	TA-54 Area G	11.47	10/27/2006
3020467	L06188320	25434	Asbestos	TA-54 Area G	11.47	10/26/2006
3020468	L06188334	25345	Asbestos	TA-54 Area G	11.47	10/26/2006
3020473	L06188340	25345	Asbestos	TA-54 Area G	11.47	10/26/2006
3020471	L06188321	25433	Asbestos	TA-54 Area G	11.47	10/26/2006
3020466	L06188322	na*	Asbestos	TA-54 Area G	11.47	10/10/2006
3020544	L06188690	25345	Asbestos	TA-54 Area G	11.47	11/21/2006
3020544	L06188691	25345	Asbestos	TA-54 Area G	11.47	11/21/2006
3020544	L06188692	25345	Asbestos	TA-54 Area G	11.47	11/21/2006
3020544	L06188694	25345	Asbestos	TA-54 Area G	11.47	11/21/2006
3020544	L06188693	25345	Asbestos	TA-54 Area G	11.47	11/21/2006
3020544	L06188695	25345	Asbestos	TA-54 Area G	11.47	11/21/2006
3020544	L06188696	25345	Asbestos	TA-54 Area G	11.47	11/21/2006
3020544	L06188697	25345	Asbestos	TA-54 Area G	11.47	11/12/2006
3020544	L06188698	25345	Asbestos	TA-54 Area G	11.47	11/21/2006
3020544	L06188699	25345	Asbestos	TA-54 Area G	11.47	11/21/2006
3020544	L06188700	25345	Asbestos	TA-54 Area G	11.47	11/21/2006
3020544	L06188701	25345	Asbestos	TA-54 Area G	11.47	11/21/2006

*na = Not available.

Table F-3
Summary of Waste Shipment/Disposal for Non-ACM-Containing Ash/Debris

WDR#	Container ID	LANL Manifest #	What	Where	Volume (m^3)	Date Received
3020895	L07190676	62820	LLW Ash	TA-54 Area G	11.47	4/20/2007
3020899	L07190677	62821	LLW Ash	TA-54 Area G	11.47	4/19/2007
3020900	L07190680	62825	LLW Ash	TA-54 Area G	11.47	4/19/2007
3020894	L07190681	62824	LLW Ash	TA-54 Area G	11.47	4/19/2007
3020901	L07190682	62826	LLW Ash	TA-54 Area G	11.47	4/17/2007
3020896	L07190683	62827	LLW Ash	TA-54 Area G	11.47	4/20/2007
3020902	L07190687	62832	LLW Ash	TA-54 Area G	11.47	4/20/2007
3020892	L07190688	62831	LLW Ash	TA-54 Area G	11.47	4/20/2007
3020903	L07190690	62834	LLW Ash	TA-54 Area G	11.47	4/20/2007
3020893	L07190692	62835	LLW Ash	TA-54 Area G	11.47	4/20/2007
3020897	L07190693	62836	LLW Ash	TA-54 Area G	11.47	4/20/2007
3020906	L07190694	62837	LLW Ash	TA-54 Area G	11.47	4/30/2007
3020904	L07190695	62838	LLW Ash	TA-54 Area G	11.47	4/20/2007
3020907	L07190696	62839	LLW Ash	TA-54 Area G	11.47	4/30/2007
3020905	L07190697	62840	LLW Ash	TA-54 Area G	11.47	4/20/2007
3020908	L07190698	62841	LLW Ash	TA-54 Area G	11.47	4/19/2007
3020926	L07190983	62895	LLW Ash	TA-54 Area G	11.47	5/1/2007
3020926	L07190984	62895	LLW Ash	TA-54 Area G	11.47	5/1/2007
3020926	L07190985	62895	LLW Ash	TA-54 Area G	11.47	5/1/2007
3020926	L07190986	62895	LLW Ash	TA-54 Area G	11.47	5/1/2007
3020926	L07190987	62895	LLW Ash	TA-54 Area G	11.47	5/1/2007
3020926	L07190988	62895	LLW Ash	TA-54 Area G	11.47	5/1/2007
3020926	L07190989	62895	LLW Ash	TA-54 Area G	11.47	5/8/2007
3020928	L07190991	62899	LLW Ash	TA-54 Area G	11.47	5/2/2007
3020930	L07190997	62904	LLW Ash	TA-54 Area G	11.47	5/2/2007
3020931	L07190998	62905	LLW Ash	TA-54 Area G	11.47	5/8/2007

Table F-4
Summary of Waste Shipment/Disposal for Other Waste Streams

Item ID	Universal Waste Manifest Number	What	Where	Volume	Date Received
	000363648	Mixed LLW drill cuttings	TA 54	1271 kg	12/18/2006
	000363688	RCRA drill cuttings	TA 54	227 kg	1/18/2007
	000363649	Mixed LLW decon water	TA 54	182 kg	12/19/2006
10048567	L02200761	Decon water	TA 54	55 gal.	2/9/2007
10048568	L02200761	Borehole drill cuttings	TA 54	55 gal.	2/9/2007
10048569	L02200761	Borehole drill cuttings	TA 54	55 gal.	2/9/2007
10048570	L02200761	Borehole drill cuttings	TA 54	55 gal.	2/9/2007

Appendix G

Photograph Log

Photograph No. 01

Date: 04-22-05

Time: 0925

Heading: North

Description:

Ash pile viewed from western pier during initial site visit



Photograph No. 02

Date: 04-22-05

Time: 0951

Heading: North

Description:

Cans and metal debris present at base of ash pile during initial site visit



Photograph No. 03

Date: 04/22/05

Time: 0957

Heading: West



Description:

Lower rock outcrop with metallic debris and cans during initial site visit

Photograph No. 04

Date: 04/22/05

Time: 1153

Heading: East



Description:

Measuring thickness of ash pile and collecting composite samples to determine waste

Photograph No. 05

Date: 10-31-05

Time: 1543

Heading: West



Description: Site Prep

Overview of base material being placed for construction of access road

Photograph No. 06

Date: 10-31-05

Time: 1545

Heading: Northeast



Description: Site Prep

Placement of 24-in. line to extend stormwater runoff line from airport

Photograph No. 07

Date: 11-04-05

Time: 1143

Heading: West



Description: Site Prep

Access road constructed from waste storage area to waste load out area

Photograph No. 08

Date: 11-04-05

Time: 1143

Heading: East



Description: Site Prep

Access road constructed from airport terminal/project trailer to waste load-out area

Photograph No. 09

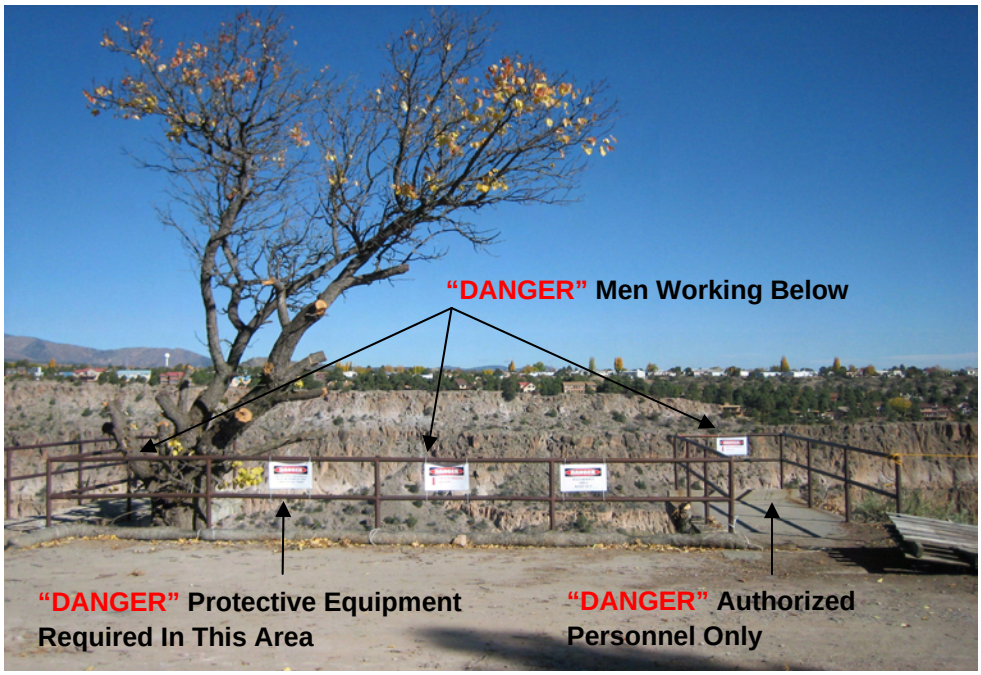
Date: 11-04-05

Time: 1145

Heading: North

Description: Site Prep

Overview of pier with posted signs



Photograph No. 10

Date: 11-04-05

Time: 1147

Heading: North

Description: Site Prep

Decon pad (ash-removal task) for the collecting loose ash before removal of PPE



Photograph No. 11

Date: 11-05-05

Time: 0857

Heading: South

Description: Site Prep

Overview of wattle placed on culvert from parking lot to pad area per BMP



Photograph No. 12

Date: 11-05-05

Time: 0857

Heading: North

Description: Site Prep

Wattle laid down along hillside runoff area (right side) and along parking lot runoff area (left side) per BMP



Photograph No. 13

Date: 11-05-05

Time: 1003

Heading: West, Southwest

Description: Site Prep

Wattle laid down outside east side limits of ash pile as part of BMP



Photograph No. 14

Date: 11-05-05

Time: 1036

Heading: North (down grade)

Description: Site Prep

Silt fencing installed below debris field as part of BMP



Photograph No. 15

Date: 11-05-05

Time: 1015

Heading: West, Northwest

Description: Debris removal

Bagging cans and metal debris located outside the ash pile



Photograph No. 16

Date: 11-05-05

Time: 1030

Heading: Northwest

Description: Debris removal

Bagging cans and debris outside the ash pile from the bottom of the debris field



Photograph No. 17

Date: 11-08-05

Time: 1030

Heading: East



Description: Debris removal

LANL radiation control technician (RCT) performing radiological scanning on equipment (skyline yarder) before set up on site

Photograph No. 18

Date: 11-08-05

Time: 1534

Heading: Northeast



Description: Ash removal

Overview of Guzzler Vacuum unit for pilot test of vacuum system to remove ash

Photograph No. 19

Date: 11-08-05

Time: 1548

Heading: Northwest



Description: Debris removal

Bagged debris outside ash field waiting to be lifted out by skyline yarder

Photograph No. 20

Date: 11-08-05

Time: 1552

Heading: Northeast



Description: Debris removal

Overview of bagged debris in background, with cans/metallic debris in foreground

Photograph No. 21

Date: 11-08-05

Time: 1412

Heading: North



Description: Debris removal

Set up of skyline yarder on access road

Photograph No. 22

Date: 11-08-05

Time: 1415

Heading: Northeast



Description: Debris removal

Overview of one of two excavators used for counterbalance weight for skyline yarder

Photograph No. 23

Date: 11-08-05

Time: 1436

Heading: Northwest



Description: Debris removal

Securing bagged debris onto cargo net to remove from hillside using the skyline yarder

Photograph No. 24

Date: 11-08-05

Time: 1448

Heading: Northwest



Description: Debris removal

Bagged debris being remove using the skyline yarder cable line

Photograph No. 25

Date: 11-09-05

Time: 1650

Heading: Northwest

Description: Debris removal

Skyline cable line tie-off at the base of canyon



Photograph No. 26

Date: 11-09-05

Time: 1651

Heading: Northwest

Description: Debris removal

Overview of cable anchored around base of tree using logs to avoid damage to tree



Photograph No. 27

Date: 11/16/2005

Time: 1021

Heading: Not Applicable

Description: Debris removal

Rifle grenade identified during removal of debris on edge of ash field



Photograph No. 28

Date: 11/16/2005

Time: 1035

Heading: Northwest

Description: Debris removal

Area where UXO identified marked with caution tape



Photograph No. 29

Date: 12-19-05

Time: 0940

Heading: West



Description: Ash removal

Overview of ash material removal via Gap Vac 6-in. vacuum hose. UXO oversight is being performed during all aspects of ash removal and handling.

Photograph No. 30

Date: 12-19-05

Time: 1220

Heading: West



Description:

Overview of area where ash material was removed during the pilot test of Gap Vac equipment. Ash is approximately 3 ft along right wall.

Photograph No. 31

Date: 12-22-05

Time: 1100

Heading: North

Description: Site Prep

Incinerator ash on hill side covered with 6-mil poly to winterize



Photograph No. 32

Date: 12-22-05

Time: 1103

Heading: West

Description: Site Prep

Sand bags with stakes through them to secure poly in place



Photograph No. 33

Date: 03/16/2006

Time: 1126

Heading: Not Applicable

Description: Soil Sampling

Sample preparation for perimeter grid point samples



Photograph No. 34

Date: 03/16/2006

Time: 1358

Heading: South

Description: Soil Sampling

Drill rig setup for collecting soil samples from AOC 73-003 in parking lot



Photograph No. 35

Date: 09-27-06

Time: 1007

Heading: North



Description: Debris removal

Consolidated debris located below rock outcrop. Photograph shows 1-yd^3 and 6-yd^3 sacks.

Photograph No. 36

Date: 09-27-06

Time: 1134

Heading: Not Applicable



Description: Debris removal

Debris items evaluated by UXO personnel as possible munitions. Smallest item is spent small arms casing.

Photograph No. 37

Date: 09-28-06

Time: 1142

Heading: Northwest



Description: Debris removal

West Range Reclamation personnel placing debris into 6-yd^3 sacks within rock outcrop below ash pile

Photograph No. 38

Date: 09-28-06

Time: 1242

Heading: North



Description: Debris removal

Consolidation of debris near rock outcrop by West Range Reclamation personnel with UXO observation. Personnel using harness and ropes.

Photograph No. 39

Date: 09-30-06

Time: 0735

Heading: West



Description: Debris removal

Bags of consolidated debris at base of rock outcrop awaiting removal using skyline yarder

Photograph No. 40

Date: 09-30-06

Time: 0747

Heading: South



Description: Debris removal

Debris consisting of cans located at base of rock outcrop

Photograph No. 41

Date: 10-03-06

Time: 1132

Heading: North



Description: Debris removal

Removal of bagged debris using skyline yarder. Removal of 85 1-yd^3 bags and 25 6-yd^3 bags completed on 10-03-06.

Photograph No. 42

Date: 10-03-06

Time: 1403

Heading: Southwest



Description: Debris removal

Placement of 3 1-yd^3 bags of debris into bucket of front-end loader. Containers for debris located west of fenced storage area.

Photograph No. 43

Date: 10-04-06

Time: 0814

Heading: Northeast



Description: Ash Removal

Spyder excavator moving down hillside near eastern pier using two feet and bucket

Photograph No. 44

Date: 10-04-06

Time: 0819

Heading: North



Description: Ash Removal

Spyder excavator moving downslope viewed from behind

Photograph No. 45

Date: 10-04-06

Time: 1420

Heading: Northeast



Description: Ash removal

Operation of Spyder excavator to the east of the piers

Photograph No. 46

Date: 10-04-06

Time: 1424

Heading: Southeast



Description: Ash removal

Unloading ash from 2-yd^3 bin into lined roll-off box. UXO personnel observing ash at end of roll-off box.

Photograph No. 47

Date: 10-05-06

Time: 1158

Heading: Northeast



Description: Ash Removal

Loading of 2- yd^3 bin by Spyder excavator. Dust control provided by spraying excavation face and bin during loading.

Photograph No. 48

Date: 10-05-06

Time: 1419

Heading: North



Description: Ash removal

Excavation progress on 10-05-06

Photograph No. 49

Date: 10-06-06

Time: 1158

Heading: East



Description: Ash removal

Excavation progress on 10-06-06 viewed from below eastern pier

Photograph No. 50

Date: 10-06-06

Time: 1407

Heading: West



Description: Ash removal

Spyder excavator viewed from eastern edge of ash pile

Photograph No. 51

Date: 10-07-06

Time: 0945

Heading: Not Applicable

Description: Ash removal

Inert 37-mm projectile identified by UXO personnel based on hole drilled in casing. Projectile transferred to LANL Hazardous Debris Team and Los Alamos County Sheriff.



Photograph No. 52

Date: 10-11-06

Time: 1300

Heading: Not applicable

Description: Ash removal

Piece of transite tile collected as suspect ACM



Photograph No. 53

Date: 10-12-06

Time: 1000

Heading: North



Description: Ash Removal

Asbestos sample and UXO technicians look through the ash for suspect ACM

Photograph No. 54

Date: 10-13-06

Time: 1100

Heading: West



Description: Site Prep

Newly constructed stormwater catch basin with a 100-ft long 4-in.-diameter corrugated high-density polyethylene drainline to divert stormwater away from work site.

Photograph No. 55

Date: 10/17/06

Time: 1350

Heading: West



Description: Ash removal

Operation of sprinkler for dust control during shutdown associated with asbestos worker training and mobilization of abatement contractor

Photograph No. 56

Date: 10/17/06

Time: 1355

Heading: West (taken from top of Connex box)



Description: Ash removal

View of fenced storage yard with roll-off boxes filled with ash. Rain water on tarps removed by abatement contractor

Photograph No. 57

Date: 10/23/06

Time: 1340

Heading: West

Description: Ash removal

Dumping of bin from skyline yarder into double lined roll-off box



Photograph No. 58

Date: 10/23/06

Time: 1432

Heading: West

Description:

Spyder excavator climbing upslope using winch and feet in attempt to reach ash located west of piers. Rock outcrop prevented removal of all ash in this area.



Photograph No. 59

Date: 10/25/06

Time: 1211

Heading: West



Description: Debris removal

Roll-off boxes with debris collected outside ash pile leaving site for disposal as industrial waste (Rio Rancho)

Photograph No. 60

Date: 10/23/06

Time: 1356

Heading: East



Description: Ash removal

Spyder excavator moving ash from eastern edge of ash pile to alignment of skyline yarder on temporary road

Photograph No. 61

Date: 10/26/06

Time: 0945

Heading: Northeast



Description: Ash removal

Gas cylinder/bottle identified during removal activities. Los Alamos Hazardous Materials team notified. Contents identified as acetylene and bottle transported to local gas distributor for disposal.

Photograph No. 62

Date: 10/27/06

Time: 1014

Heading: Northwest



Description: Ash removal

Placement of ash into double-lined stockpile

Photograph No. 63

Date: 10/27/06

Time: 1431

Heading: Detail of cable



Description: Ash removal

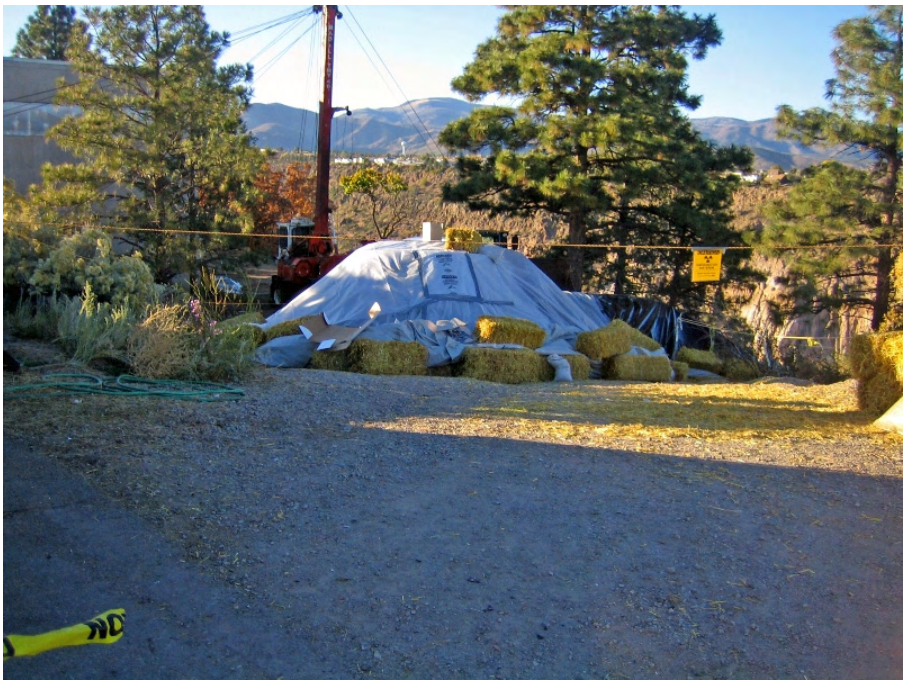
Cable on roll-off box truck broken during loading of empty roll-off box. End of cable indicates at least three strands were cut.

Photograph No. 64

Date: 10/28/06

Time: 1413

Heading: Northwest



Description: Ash removal

Temporary stockpile after placement/ sealing of double cover to form burrito wrap

Photograph No. 65

Date: 10/30/06

Time: 0941

Heading: Southeast



Description: Ash removal

Loading of lined roll-off box with skyline yarder. Stockpile partially uncovered and located in background.

Photograph No. 66

Date: 10/30/06

Time: 1053

Heading: East



Description: Ash removal

Spyder excavator removing ash from northeast corner of site near rock outcrop

Photograph No. 67

Date: 10/31/06

Time: 1450

Heading: Southeast



Description: Ash removal

Loading last bucket using skyline yarder

Photograph No. 68

Date: 10/31/06

Time: 1520

Heading: Southeast



Description: Ash removal

Spyder excavator descending hillside towards road at bottom of Pueblo Canyon

Photograph No. 69

Date: 11/09/06

Time: 1215

Heading: Northwest



Description: Ash removal

Vacuum system crew with vacuum truck in background

Photograph No. 70

Date: 11/10/06

Time: 1038

Heading: Southwest



Description: Ash removal

Ash in crevice between boulders at top of slope following removal of ash above boulders using Spyder and skyline yarder

Photograph No. 71

Date: 10/25/06

Time: 0953

Heading: Southeast



Description: Ash removal

Upper rock outcrop from grid point B-4 following bulk ash removal. Ash in crevices between rock.

Photograph No. 72

Date: 11/27/06

Time: 0952

Heading: Southeast



Description: Ash removal

Upper rock outcrop from grid point B-4 following ash removal using vacuum system.

Photograph No. 73

Date: 12/04/06

Time: 1019

Heading: Northwest



Description: Ash removal

Snow-covered hillside following 8-in. of snow after a storm. Project shutdown because of safety concerns with slippage and inability to see loose rocks.

Photograph No. 74

Date: 12/08/06

Time: 1247

Heading: Southeast



Description: Ash removal

Vacuum crews working on rock outcrop after partial snow melt. Additional rope and climbing harnesses required for entire team to be tied off on any portion of slope.

Photograph No. 75

Date: 12/16/06

Time: 1115

Heading: Northwest



Description: Ash removal

Stake in eastern chute indicating XRF results above residential SSLs. Approximately 10 in. of impacted soil previously removed.

Photograph No. 76

Date: 12/16/06

Time: 1128

Heading: East



Description: Ash removal

Vacuum crew using demolition hammer to remove impacted soil in eastern chute

Photograph No. 77

Date: 12/18/2006

Time: 1138

Heading: Northeast



Description: Ash removal

Vacuum crews removing frozen contaminated soil with demolition hammers at top of lower rock outcrop

Photograph No. 78

Date: 12/19/2006

Time: 1553

Heading: Northwest



Description: Ash removal

Removal of hot spot of contaminated soil at top of lower rock outcrop based on XRF results

Photograph No. 79

Date: 12/28/06

Time: 1059

Heading: North



Description: Ash removal

Twenty-eight in. of snow on the hillside on 12/28/07 and 12/29/07. Crews unable to work safely on hillside.

Photograph No. 80

Date: 01/01/2007

Time: 1125

Heading: Southwest



Description: Ash removal

Snow remaining on hillside after storm on 12/28/06 and 12/29/06. A 4-ft lathe indicates over 2 ft of snow remaining on hillside. Crews unable to work safely on hillside.

Photograph No. 81

Date: 01/04/07

Time: 1054

Heading: Southwest



Description: Ash removal

Hand/vacuum excavation of contaminated soil between former ash pile and incinerator before demobilization for winter. XRF results used to confirm extent of removal.

Photograph No. 82

Date: 01/04/07

Time: 1326

Heading: West



Description: Ash removal

Base of excavation along foundation for smokestack. Utilities for former incinerator building and airport visible in excavation.

Photograph No. 83

Date: 04/12/07

Time: 0954

Heading: Northwest



Description: Ash removal

Emptying Gap Vac vacuum unit following remobilization in spring 2007

Photograph No. 84

Date: 04/13/07

Time: 1252

Heading: Northeast



Description: Ash removal

Spring snowstorm. Work on slopes stopped for safety concerns

Photograph No. 85

Date: 04/15/07

Time: 1113

Heading: East



Description: Ash removal

Collection of soil samples for XRF screening

Photograph No. 86

Date: 04/15/07

Time: 1140

Heading: Southeast



Description: Ash removal

Removal of debris and impacted soil at base of lower rock outcrop

Photograph No. 87

Date: 04/16/07

Time: 1027

Heading: East



Description: Ash removal

Removal of contaminated soil at base of lower rock outcrop. Extent of excavation driven by XRF results.

Photograph No. 88

Date:04/16/07

Time: 1317

Heading: Southwest



Description: Ash removal

Surveyors reestablishing grid point on near vertical section of lower rock outcrop

Photograph No. 89

Date: 04/17/07

Time: 1042

Heading: South



Description: Ash removal

Grid point ready for confirmation sampling at base of lower rock outcrop. Pin flags for XRF samples removed once XRF results indicate grid cleared.

Photograph No. 90

Date: 04/18/07

Time: 1331

Heading: North



Description: Ash removal

Vacuum crew removing impacted soil from rock crevices in lower rock outcrop.

Photograph No. 91
Date: 04/19/07

Time: 1207

Heading: Northwest



Description: Ash removal
Storage trailer and eyewash station in foreground with Gap Vac vacuum unit at load-out area

Photograph No. 92

Date: 04/19/07

Time: 1541

Heading: Southwest



Description: Ash removal

Removal of metal debris and impacted soil using vacuum from bottom of slope. Debris too large for vacuum was placed in bags at bottom of slope.

Photograph No. 93

Date: 04/20/07

Time: 1455

Heading: South



Description: Ash removal

Loosening impacted soil before vacuuming along base of lower rock outcrop

Photograph No. 94

Date: 04/23/07

Time: 1531

Heading: West



Description: Soil sampling

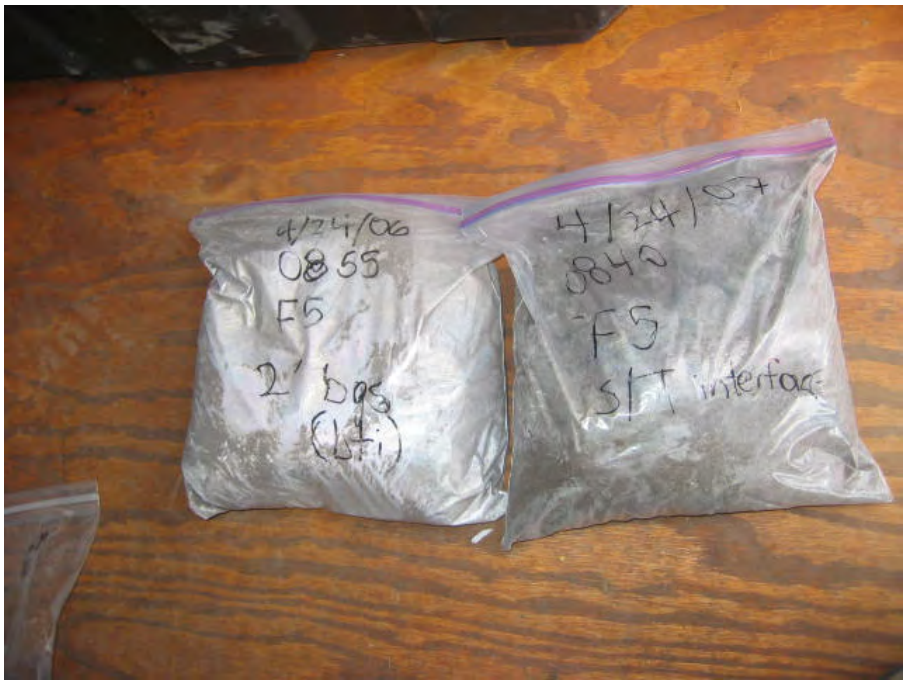
Collecting confirmation soil sample after grid cleared using XRF

Photograph No. 95

Date: 04/24/07

Time: 0824

Heading: Not Applicable



Description: Soil sampling

Bagged soil samples collected from gird point F-5 awaiting processing and packaging.

Photograph No. 96

Date: 04/26/07

Time: 1014

Heading: South



Description: Ash removal

Removal of impacted soil within Grid C-1 using backhoe. Initial confirmation sample from grid point C-1 was above residential SSL for lead.

Photograph No. 97

Date: 04/26/07

Time: 1452

Heading: Southeast



Description: Ash removal

Removal of ash/impacted soil at the top of slope in Grid E-1

Photograph No. 98

Date: 04/26/07

Time: 1542

Heading: North



Description: Ash removal

Bagged debris waiting to be pulled up hill. Debris placed in bags to prevent plugging of vacuum lines.

Photograph No. 99

Date: 04/30/07

Time: 1015

Heading: Northeast



Description: Ash removal

Connection of line from crane to bagged debris

Photograph No. 100

Date: 04/30/07

Time: 1402

Heading: Southeast



Description: Ash removal

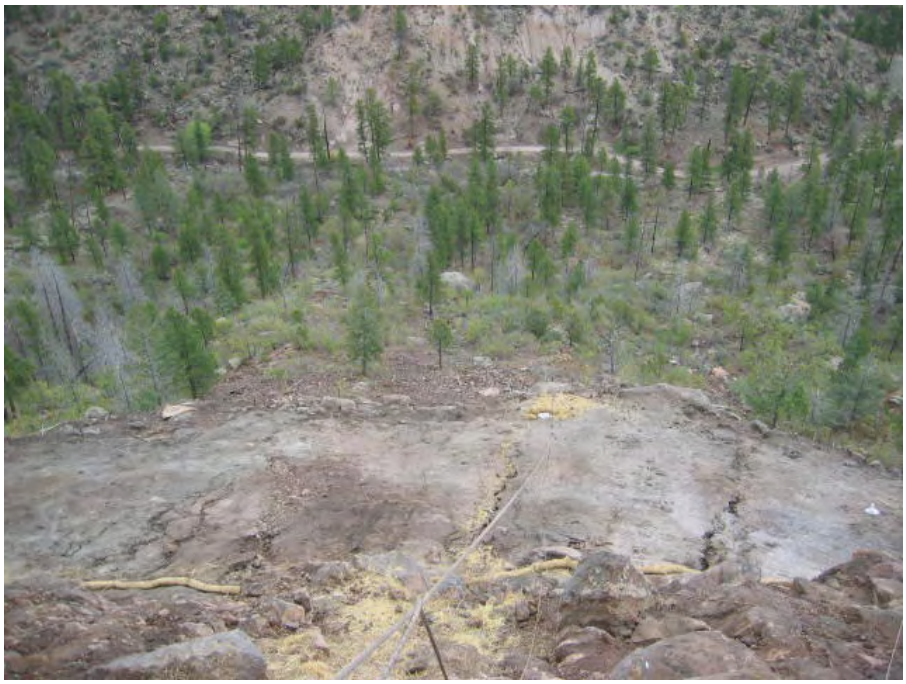
Crane used to hoist unused vacuum pipe to top of hill. Bagged debris from Spring vacuum activities disposed with ash and contaminated soil since impacted soil not removed from debris.

Photograph No. 101

Date: 05/02/07

Time: 0744

Heading: North



Description: Site restoration

Placement of wattle at base of upper rock outcrop for erosion control

Photograph No. 102

Date: 05/02/07

Time: 0922

Heading: Southwest



Description: Ash removal

Removal of impacted soil from SWMU 73-004(b) outfall using vacuum system

Photograph No. 103

Date: 05/03/07

Time: 1129

Heading: Northeast



Description: Site restoration

Placement of semipermanent erosion mat on tuff. All soil removed and unable to revegetate slope.

Photograph No. 104

Date: 05/30/07

Time: 1307

Heading: Northwest



Description: Ash removal

Outfall area following removal of impacted soil using vacuum unit

Photograph No. 105

Date: 05/03/07

Time: 1441

Heading: Southeast



Description: Ash removal

Excavated area in Grid E-1 following additional excavation based on XRF near residential SSL and quick-turn field sample above residential SSL.

Photograph No. 106

Date: 05/03/07

Time: 1457

Heading: Northwest



Description: Soil Sampling

Collecting soil sample from outfall area [SWMU 73-004(b)]

Photograph No. 107

Date: 05/03/07

Time: 1554

Heading: Northeast



Description: Soil Sampling

Collecting confirmation soil sample from Grid E-1 following additional excavation

Photograph No. 108

Date: 05/04/07

Time: 0912

Heading: Northeast



Description: Site restoration

Placement of erosion-control mat completed on former ash pile

Photograph No. 109

Date: 5/04/07

Time: 1002

Heading: South



Description: Site restoration

Site restoration complete with erosion mat visible from aircraft

Photograph No. 110

Date: 05/04/07

Time: 1528

Heading: Northwest



Description: Site restoration

Erosion controls at outfall area associated with SWMU 73-004(b).

Appendix H

Results for VOC Head-Space and
X-Ray Fluorescence Screening and Asbestos Sampling

Table H-1
Summary of XRF Screening Results

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
Grid A-2															
25	11/16/2006 14:52	ppm	A2Cf	89.08	< LOD	< LOD	< LOD	156.51	39.27	< LOD	< LOD	11,624.79	648.8		
26	11/16/2006 14:54	ppm	A2SWf	70.21	< LOD	< LOD	< LOD	153.1	< LOD	< LOD	< LOD	12,698.02	480.91		
30	11/16/2006 15:34	ppm	A2Cb	47.83	< LOD	< LOD	< LOD	147.26	18.13	< LOD	< LOD	9,717.00	386.9		
37	11/17/2006 6:52	ppm	A2Cc	47.48	< LOD	< LOD	< LOD	94.69	< LOD	< LOD	< LOD	10,876.71	446.2		
11	11/17/2006 14:13	ppm	RE73-07-74673 0-1ftb	21.23	< LOD	< LOD	< LOD	42.68	< LOD	46.44	< LOD	7,210.06	275.17		
Grid A-3															
12	11/11/2006 9:26	ppm	A3SWc	29.6	< LOD	< LOD	< LOD	56.03	< LOD	< LOD	< LOD	8,989.09	322.1		
19	11/11/2006 9:52	ppm	A3Sec	180.36	< LOD	< LOD	< LOD	138.91	30.06	< LOD	< LOD	29,768.28	362.29		
20	11/11/2006 9:55	ppm	A3Cec	1369.23	< LOD	81.35	< LOD	984.87	353.86	< LOD	< LOD	254,193.50	2060.31		
13	11/15/2006 15:09	ppm	A3Cf	51	< LOD	< LOD	< LOD	103.68	29.75	< LOD	< LOD	8,398.32	439.23		
25	11/26/2006 10:56	ppm	A3Cf	47.63	< LOD	< LOD	< LOD	97.38	< LOD	< LOD	< LOD	10,575.72	373.85	< LOD	< LOD
26	11/26/2006 10:59	ppm	A3Cef	62.51	< LOD	19.47	< LOD	143.07	< LOD	< LOD	< LOD	12,235.90	351.94	< LOD	53.76
27	11/26/2006 11:01	ppm	A3Sef-R	106.33	< LOD	< LOD	< LOD	172.14	50.11	< LOD	< LOD	16,581.51	489.77	< LOD	< LOD
38	11/27/2006 9:40	ppm	RE73-07-74675 3-4ftc	21.09	< LOD	< LOD	< LOD	54.09	< LOD	< LOD	< LOD	6,857.69	375.98	< LOD	30.41
2	11/28/2006 15:05	ppm	A3Cc lab	60.74	< LOD	< LOD	< LOD	77	< LOD	< LOD	< LOD	9,808.04	373.3	< LOD	48.4
17	12/12/2006 8:38	ppm	A3Cec-R	60.85	< LOD	< LOD	< LOD	95.29	< LOD	< LOD	< LOD	14,585.49	373.34	< LOD	38
32	4/11/2007 8:40	ppm	A3SWc	35.06	< LOD	< LOD	< LOD	85.46	27.73	< LOD	< LOD	10,372.13	310.12	< LOD	60.42
Grid A-4															
4	11/11/2006 8:30	ppm	A4CWc	279.67	< LOD	< LOD	< LOD	501.75	39.47	< LOD	< LOD	23,777.54	328.6		
5	11/11/2006 8:36	ppm	A4Sec	785.25	< LOD	48.4	< LOD	175.57	72.95	< LOD	< LOD	227,276.80	1421.92		
8	11/11/2006 9:10	ppm	A4Cc	39.16	< LOD	< LOD	< LOD	65.8	< LOD	< LOD	< LOD	7,934.83	262.87		
44	11/27/2006 10:48	ppm	A4Cf	85.32	< LOD	< LOD	< LOD	104.77	< LOD	< LOD	< LOD	15,591.12	324.75	< LOD	< LOD
45	11/27/2006 10:50	ppm	A4Cef	469.1	< LOD	< LOD	< LOD	115.81	< LOD	< LOD	< LOD	41,831.80	457.61	< LOD	64.4
3	11/28/2006 15:08	ppm	A4Cc lab	119.3	< LOD	< LOD	< LOD	142.08	148.64	< LOD	< LOD	24,406.32	440.64	< LOD	60.39
8	11/28/2006 8:33	ppm	RE73-07-74677 0-1ft	32.49	< LOD	< LOD	< LOD	54.96	< LOD	< LOD	< LOD	8,432.83	261.13	< LOD	< LOD
9	11/28/2006 8:37	ppm	RE73-07-74678 2.5-3ft	24.18	< LOD	< LOD	< LOD	54.52	< LOD	< LOD	< LOD	9,378.17	211.1	< LOD	< LOD

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
5	12/11/2006 17:24	ppm	A4SEc	34.61	< LOD	< LOD	< LOD	60.15	< LOD	< LOD	< LOD	10,057.29	244.63	< LOD	< LOD
15	12/12/2006 8:17	ppm	A4CEc	27.67	< LOD	10.73	< LOD	65.27	< LOD	< LOD	< LOD	10,570.12	212.4	< LOD	< LOD
27	12/13/2006 8:21	ppm	A4CEc-R	93.28	< LOD	< LOD	< LOD	84.13	27.35	< LOD	< LOD	12,901.84	392.77	< LOD	65.22
28	12/13/2006 8:29	ppm	A4SEc-R	97.21	< LOD	< LOD	< LOD	103.33	27.43	< LOD	< LOD	12,152.94	270.72	< LOD	< LOD
9	4/10/2007 13:39	ppm	A4Cc	246.1	< LOD	< LOD	< LOD	175.32	113.8	< LOD	< LOD	18,684.06	393.8	< LOD	92.2
10	4/10/2007 13:42	ppm	A4NWc	29.17	< LOD	< LOD	< LOD	67.22	28.83	< LOD	< LOD	10,642.61	238.08	< LOD	50.03
11	4/10/2007 13:45	ppm	A4NEc	77.41	< LOD	< LOD	< LOD	97.78	35.8	< LOD	< LOD	13,878.42	298.75	< LOD	70.04
12	4/10/2007 13:49	ppm	A4SCc	87.96	< LOD	< LOD	< LOD	84.26	37.81	< LOD	< LOD	13,722.12	237.99	< LOD	63.56
13	4/10/2007 13:52	ppm	A4SCc	105.49	< LOD	< LOD	< LOD	117.24	39.89	< LOD	< LOD	14,533.34	277.73	< LOD	44.52
31	4/11/2007 8:30	ppm	A4SWc	55.02	< LOD	< LOD	< LOD	157.09	< LOD	< LOD	< LOD	10,148.50	324.23	< LOD	39.6
8	4/26/2007 9:13	ppm	A4Cc	23.71	< LOD	< LOD	< LOD	39.59	< LOD	< LOD	< LOD	9,889.35	248.24	< LOD	< LOD
41	4/27/2007 7:16	ppm	A4c 0-.5	26.42	< LOD	< LOD	< LOD	58.36	< LOD	< LOD	< LOD	9,490.53	302.33	< LOD	< LOD
Grid A-5															
3	11/28/2006 11:24	ppm	A5Cc 0-6in	30.43	< LOD	< LOD	< LOD	64.9	< LOD	< LOD	< LOD	6,696.52	226.63	< LOD	< LOD
15	11/29/2006 13:19	ppm	RE73-07-74780c 0-1.5ft	83.54	< LOD	< LOD	< LOD	112.15	24.77	< LOD	< LOD	14,566.37	417.19	< LOD	34.24
6	12/11/2006 17:31	ppm	A5CEc	47.36	< LOD	< LOD	< LOD	63.97	< LOD	< LOD	< LOD	10,130.35	323.23	< LOD	50.42
11	12/12/2006 7:40	ppm	A5CWc	46.06	< LOD	< LOD	< LOD	75.7	< LOD	< LOD	< LOD	13,926.06	276.1	< LOD	68.44
12	12/12/2006 7:48	ppm	A5CSc	88.43	< LOD	< LOD	< LOD	117.53	< LOD	< LOD	< LOD	14,267.63	412.8	< LOD	51.54
33	4/11/2007 8:53	ppm	A5SEc	64.38	< LOD	< LOD	< LOD	64.78	32.12	< LOD	< LOD	25,643.54	385.68	< LOD	60.82
34	4/11/2007 9:03	ppm	A5SWc	68.68	< LOD	< LOD	< LOD	83.32	34.53	< LOD	< LOD	12,702.46	446.03	< LOD	43.4
35	4/11/2007 9:08	ppm	A5NEc	20.56	< LOD	< LOD	< LOD	49.97	< LOD	< LOD	< LOD	11,173.62	173.11	< LOD	55.53
36	4/11/2007 9:18	ppm	A5Cc	81.05	< LOD	< LOD	< LOD	92.77	27.65	< LOD	< LOD	12,543.92	260.7	< LOD	48.15
37	4/11/2007 9:27	ppm	A5NWc	88.81	< LOD	< LOD	< LOD	92.46	< LOD	< LOD	< LOD	13,702.97	359.32	< LOD	< LOD
7	4/26/2007 8:59	ppm	A5SEc	40.61	< LOD	< LOD	< LOD	57.88	< LOD	< LOD	< LOD	9,030.20	164.18	< LOD	58.34
Grid A-6															
34	12/8/2006 15:55	ppm	A6CEc	108.94	< LOD	< LOD	< LOD	100.31	24.62	< LOD	< LOD	12,896.87	361.92	< LOD	< LOD
35	12/8/2006 15:58	ppm	A6CSc	97.92	< LOD	< LOD	< LOD	98.71	< LOD	< LOD	187.97	17,113.05	487.06	< LOD	63.46
46	12/9/2006 9:10	ppm	A6Cc	124.92	< LOD	< LOD	< LOD	87.43	23.89	< LOD	< LOD	14,537.35	359.22	< LOD	47.11

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
8	12/13/2006 12:41	ppm	A6SEc	437.93	< LOD	< LOD	< LOD	826.29	346.17	< LOD	< LOD	19,710.44	747.12	< LOD	63.49
38	4/11/2007 9:33	ppm	A6SWc	36.38	< LOD	< LOD	< LOD	85.55	33.35	< LOD	< LOD	11,925.51	342.82	< LOD	46.62
39	4/11/2007 9:39	ppm	A6SEc	23.14	< LOD	< LOD	< LOD	47.35	< LOD	< LOD	< LOD	11,505.36	120.98	< LOD	46.56
40	4/11/2007 9:45	ppm	A6NEc	123.95	< LOD	< LOD	< LOD	161.4	69.18	< LOD	< LOD	11,662.47	322.3	< LOD	42.97
41	4/11/2007 9:58	ppm	A6NWc	35.9	< LOD	< LOD	< LOD	78.81	< LOD	< LOD	< LOD	10,852.89	535.31	< LOD	65.66
43	4/11/2007 10:14	ppm	A6SWc	67.74	< LOD	< LOD	< LOD	87.4	< LOD	< LOD	< LOD	11,157.44	245.22	< LOD	< LOD
39	4/27/2007 7:08	ppm	RE73-07-74805c 0-0.5	29.03	< LOD	< LOD	< LOD	52.56	< LOD	< LOD	< LOD	7,877.79	199.3	< LOD	45.89
40	4/27/2007 7:11	ppm	RE73-07-74806c 2-2.5	22	< LOD	< LOD	< LOD	68.21	< LOD	< LOD	< LOD	7,492.28	262.26	< LOD	34.5
Grid A-7															
36	12/8/2006 16:01	ppm	A7SEc	44.83	< LOD	< LOD	< LOD	61.24	< LOD	< LOD	< LOD	11,684.34	344.33	< LOD	46.37
51	12/9/2006 9:29	ppm	A7SWc	50.63	< LOD	< LOD	< LOD	80.02	< LOD	< LOD	< LOD	11,574.14	608.08	< LOD	38.73
39	12/8/2006 16:12	ppm	A7SWc	592.49	< LOD	< LOD	< LOD	1230.41	572.18	83.47	< LOD	38,256.50	958.78	< LOD	105.21
113	12/10/2006 12:35	ppm	A7SWc	1872.54	< LOD	< LOD	< LOD	326.52	100.96	< LOD	221.55	22,364.92	860.51	< LOD	73.2
9	12/13/2006 13:02	ppm	A7SWc-R	39.71	< LOD	< LOD	< LOD	76.02	< LOD	< LOD	< LOD	11,261.74	366.53	< LOD	48.1
11	12/13/2006 13:31	ppm	A7Cc	186.08	< LOD	19.57	< LOD	313.96	107.38	< LOD	< LOD	14,601.20	582.38	< LOD	41.76
13	12/13/2006 13:47	ppm	A7NWc	90.55	< LOD	< LOD	< LOD	87.09	33.33	< LOD	< LOD	13,441.10	491.71	< LOD	58.55
1	12/16/2006 14:24	ppm	A7NEc	36.86	< LOD	< LOD	< LOD	53.31	< LOD	< LOD	< LOD	10,592.85	496.89	< LOD	< LOD
2	12/16/2006 14:31	ppm	A7CSc	501.3	< LOD	< LOD	< LOD	974.03	407.61	67.38	< LOD	22,110.72	873.59	85.21	82.98
27	4/11/2007 7:56	ppm	A7NEc	161.05	< LOD	< LOD	< LOD	201.14	49.34	< LOD	< LOD	15,751.35	554.03	< LOD	56.28
28	4/11/2007 8:04	ppm	A7NWc	43.53	< LOD	< LOD	< LOD	81.03	< LOD	< LOD	< LOD	8,990.62	410.29	< LOD	39.58
29	4/11/2007 8:11	ppm	A7SWc	58.89	< LOD	< LOD	< LOD	59.62	< LOD	< LOD	< LOD	10,129.98	328.03	< LOD	45.3
30	4/11/2007 8:19	ppm	A7Cc	70.69	< LOD	< LOD	< LOD	85.08	< LOD	< LOD	< LOD	11,213.16	703.04	< LOD	40.84
44	4/11/2007 10:16	ppm	A7SEc	90.91	< LOD	< LOD	< LOD	126.38	31.09	< LOD	< LOD	12,768.91	280.6	< LOD	42.82
5	4/25/2007 16:57	ppm	A7SEc-R	23.69	< LOD	< LOD	< LOD	48.25	< LOD	< LOD	< LOD	10,543.43	292.59	< LOD	< LOD
56	4/27/2007 11:41	ppm	RE73-07-74687c 0-0.5	27.51	< LOD	< LOD	< LOD	86.51	< LOD	< LOD	< LOD	8,218.69	240.99	< LOD	46
57	4/27/2007 11:44	ppm	RE73-07-74688c 2-2.5	32.55	< LOD	< LOD	< LOD	69.28	< LOD	< LOD	< LOD	8,583.49	433.63	< LOD	63.48
Grid A-8															
9	12/15/2006 10:09	ppm	A8NEc	60.83	< LOD	< LOD	< LOD	78.44	< LOD	< LOD	< LOD	9,919.73	354.94	< LOD	36.06

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
10	12/15/2006 10:14	ppm	A8Cc	38.31	< LOD	< LOD	< LOD	81.47	< LOD	< LOD	< LOD	9,789.22	335.81	< LOD	44.35
31	12/15/2006 14:56	ppm	A8SEc	129.11	< LOD	< LOD	< LOD	109.41	< LOD	< LOD	< LOD	12,543.70	517.68	< LOD	42.05
29	4/26/2007 15:45	ppm	A8c 0-.5	36.15	< LOD	< LOD	< LOD	75.72	< LOD	< LOD	< LOD	9,027.62	309.39	< LOD	39.09
28	4/26/2007 15:39	ppm	A8c 2-2.5	29.67	< LOD	< LOD	< LOD	79.03	< LOD	< LOD	< LOD	7,719.91	331.87	< LOD	33.71
Grid B-1															
6	11/15/2006 14:34	ppm	B1Cf	94.89	< LOD	< LOD	< LOD	214.82	45.23	< LOD	< LOD	12,454.43	458.87		
7	11/15/2006 14:37	ppm	B1NEf	178.25	< LOD	< LOD	< LOD	282.51	374.9	< LOD	< LOD	22,373.46	420.82		
15	11/16/2006 14:17	ppm	B1Cf	164.99	< LOD	< LOD	< LOD	887.73	52.45	< LOD	< LOD	11,707.78	584.35		
31	11/16/2006 15:37	ppm	B1Cb	125.1	< LOD	< LOD	< LOD	291.35	43.67	< LOD	< LOD	10,441.65	425.96		
38	11/17/2006 6:55	ppm	B1Cc	167.84	< LOD	< LOD	< LOD	357.75	45.28	< LOD	< LOD	12,065.29	334.16		
16	11/16/2006 14:20	ppm	B1SEf	102.23	< LOD	< LOD	< LOD	247.42	37.86	< LOD	< LOD	11,453.38	493.93		
17	11/16/2006 14:23	ppm	B1SWf	51.73	< LOD	< LOD	< LOD	92.74	< LOD	< LOD	< LOD	9,395.06	505.12		
18	11/16/2006 14:26	ppm	B1NWf	59.06	< LOD	< LOD	< LOD	171.6	53.77	< LOD	< LOD	11,317.79	437.56		
19	11/16/2006 14:28	ppm	B1NEf	301.81	< LOD	< LOD	< LOD	483.99	93.16	< LOD	< LOD	18,836.21	480.32		
25	11/17/2006 15:52	ppm	RE73-07-74671b 3.5-5ft	< LOD	< LOD	7.61	< LOD	57.92	< LOD	< LOD	< LOD	12,595.47	199.82		
Grid B-2															
8	11/15/2006 14:40	ppm	B2SEf	98.16	< LOD	< LOD	< LOD	158.76	51.36	< LOD	< LOD	13,289.21	449.85		
9	11/15/2006 14:43	ppm	B2Cf	452.24	< LOD	< LOD	< LOD	704.19	263.43	< LOD	< LOD	20,086.08	789.87		
21	11/16/2006 14:32	ppm	B2Cf-R	289.13	< LOD	< LOD	< LOD	779.66	290.02	< LOD	< LOD	17,199.50	647.94		
32	11/16/2006 15:41	ppm	B2Cb	277.09	< LOD	< LOD	< LOD	740.2	319.01	< LOD	< LOD	18,070.21	597.06		
39	11/17/2006 6:57	ppm	B2Cc	317.54	< LOD	< LOD	< LOD	679.59	216.44	< LOD	< LOD	20,085.66	650.25		
22	11/16/2006 14:38	ppm	B2NEf	122.57	< LOD	< LOD	< LOD	225.94	70.25	< LOD	< LOD	16,731.10	616.62		
21	11/20/2006 16:09	ppm	B2NWf	64.57	< LOD	< LOD	< LOD	116.7	< LOD	< LOD	< LOD	10,713.50	336.13	< LOD	< LOD
22	11/20/2006 16:13	ppm	B2Cf	52.83	< LOD	< LOD	< LOD	98.89	< LOD	< LOD	< LOD	14,263.76	305.92	< LOD	< LOD
4	11/28/2006 15:12	ppm	B2Cc lab	100.09	< LOD	< LOD	< LOD	211.42	28.74	< LOD	< LOD	11,524.11	371.13	< LOD	66.4
22	11/17/2006 15:38	ppm	RE73-07-74729 0-1.5ftb	114.72	< LOD	< LOD	< LOD	232.57	75.61	< LOD	< LOD	11,461.97	260.55		
23	11/17/2006 15:41	ppm	RE73-07-74730 1.5-2.5ftb	27.32	< LOD	< LOD	< LOD	93.57	< LOD	< LOD	< LOD	6,991.90	206.25		
24	11/17/2006 15:44	ppm	RE73-07-74731 3.5-5ftb	17.91	< LOD	< LOD	< LOD	73.48	< LOD	< LOD	< LOD	6,583.60	283.63		

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
Grid B-3															
10	11/15/2006 14:55	ppm	B3SEf	92.89	< LOD	< LOD	< LOD	198.31	42.11	< LOD	< LOD	10,257.69	348.34		
11	11/15/2006 15:01	ppm	B3SWf	54.68	< LOD	< LOD	< LOD	125.84	< LOD	< LOD	< LOD	10,049.40	287.79		
12	11/15/2006 15:04	ppm	B3Cf	981.8	< LOD	< LOD	< LOD	1381.16	426.35	141.91	< LOD	39,850.81	992.16		
24	11/16/2006 14:45	ppm	B3Cf	586.53	< LOD	< LOD	< LOD	1565.33	409.48	< LOD	< LOD	53,746.82	1683.55		
33	11/16/2006 15:44	ppm	B3Cb	502.5	< LOD	30.03	< LOD	1236.09	361.92	< LOD	< LOD	36,214.50	752.88		
40	11/17/2006 7:00	ppm	B3Cc	438.23	< LOD	< LOD	< LOD	916.61	475.85	< LOD	< LOD	42,847.04	650.51		
23	11/16/2006 14:42	ppm	B3SWf-R	58.99	< LOD	< LOD	< LOD	147.9	35.82	< LOD	< LOD	10,735.41	415.42		
19	11/26/2006 10:40	ppm	B3Cf-R	73.46	< LOD	< LOD	< LOD	216.77	65.72	< LOD	< LOD	15,099.18	339.41	< LOD	66.81
20	11/26/2006 10:43	ppm	B3NWf	255.91	< LOD	< LOD	< LOD	155	61.06	< LOD	< LOD	73,366.61	727.61	< LOD	< LOD
21	11/26/2006 10:46	ppm	B3NEf	467.82	< LOD	< LOD	< LOD	742.08	362.19	94.51	< LOD	33,746.06	678.62	< LOD	107.36
22	11/26/2006 10:49	ppm	B3NEf-R	261.26	< LOD	< LOD	< LOD	513.27	206.95	< LOD	< LOD	21,268.27	363.56	< LOD	< LOD
1	11/27/2006 15:26	ppm	B3NWf-R	165.67	< LOD	< LOD	< LOD	114.64	< LOD	< LOD	< LOD	24,688.70	428.22	< LOD	64.39
33	11/27/2006 7:55	ppm	B3Cc-R	122.19	< LOD	< LOD	< LOD	272.52	70.68	< LOD	< LOD	22,328.48	419.1	81.11	93.45
39	11/27/2006 9:44	ppm	RE73-07-74750c 0-1ft	17	< LOD	< LOD	< LOD	61.54	< LOD	< LOD	< LOD	7,169.66	262.87	< LOD	30.14
40	11/27/2006 9:50	ppm	RE73-07-74751c 1-2ft	22.08	< LOD	< LOD	< LOD	63.65	< LOD	< LOD	< LOD	7,913.23	238.23	< LOD	33.33
41	11/27/2006 10:08	ppm	RE73-07-74752c 3-4ft	24.01	< LOD	< LOD	< LOD	62.05	< LOD	< LOD	< LOD	6,716.68	268.56	< LOD	36.48
Grid B-4															
14	11/15/2006 15:14	ppm	B4Cf	183.8	< LOD	< LOD	< LOD	112.98	< LOD	103.18	< LOD	91,544.65	683.99		
46	11/27/2006 10:53	ppm	B4Cf	76.05	< LOD	< LOD	< LOD	225.3	< LOD	< LOD	< LOD	14,445.64	329.67	< LOD	< LOD
47	11/27/2006 10:55	ppm	B4SEf	71.7	< LOD	< LOD	< LOD	207.65	55.69	< LOD	< LOD	13,341.12	525.16	< LOD	< LOD
48	11/27/2006 10:58	ppm	B4NEf	247.24	< LOD	< LOD	< LOD	276.93	105.54	< LOD	< LOD	35,493.90	660.9	< LOD	84.95
10	11/28/2006 8:41	ppm	RE73-07-74765c 0-1.5ft	14.05	< LOD	< LOD	< LOD	46.82	< LOD	< LOD	< LOD	6,957.54	236.14	< LOD	< LOD
11	11/28/2006 8:44	ppm	RE73-07-74766c 2-3ft	18.85	< LOD	< LOD	< LOD	55.33	< LOD	< LOD	< LOD	6,499.01	240.46	< LOD	< LOD
5	11/28/2006 15:16	ppm	B4Cc lab	68.57	< LOD	< LOD	< LOD	83.77	< LOD	< LOD	< LOD	17,721.87	298.87	< LOD	< LOD
Grid B-5															
4	11/28/2006 11:27	ppm	B5Cc 0-6in	28.13	< LOD	< LOD	< LOD	58.4	< LOD	< LOD	< LOD	8,760.53	156.12	< LOD	31.84
16	11/29/2006 13:22	ppm	RE73-07-74783 0-1ft	92.91	< LOD	< LOD	< LOD	142.17	43.8	< LOD	< LOD	12,525.07	272.08	< LOD	< LOD

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
3	12/11/2006 17:00	ppm	B5Cc	71.67	< LOD	< LOD	< LOD	128.92	28.5	< LOD	< LOD	11,915.12	211.38	< LOD	39.82
4	12/11/2006 17:17	ppm	B5NWc	44.69	< LOD	< LOD	< LOD	83.71	31.11	< LOD	< LOD	10,337.38	420.93	< LOD	57.69
9	12/12/2006 7:21	ppm	B5TEST	711.74	< LOD	< LOD	< LOD	945.8	371.81	< LOD	< LOD	22,485.70	771.66	98.16	65.2
50	4/16/2007 14:36	ppm	B5Cc	194.05	< LOD	< LOD	< LOD	242.79	64.4	< LOD	< LOD	12,464.57	321.18	< LOD	55.91
40	4/16/2007 13:47	ppm	B5NECc	176.38	< LOD	< LOD	< LOD	214.45	74.5	< LOD	< LOD	12,053.43	292.48	< LOD	35.31
39	4/16/2007 13:42	ppm	B5NWCc	240.47	< LOD	< LOD	< LOD	294.49	107.66	< LOD	< LOD	13,810.58	331.25	< LOD	40.91
41	4/16/2007 13:50	ppm	B5SECc	601.71	< LOD	< LOD	< LOD	693.01	260.74	70.12	< LOD	26,432.72	448.94	< LOD	71.69
38	4/16/2007 12:33	ppm	B5SWCc	71.79	< LOD	< LOD	< LOD	88.6	< LOD	< LOD	< LOD	9,704.98	161.83	< LOD	54.36
8	4/24/2007 10:09	ppm	B5Cc 6in	36.7	< LOD	< LOD	< LOD	61.66	< LOD	< LOD	< LOD	8,084.01	164.8	< LOD	< LOD
16	4/24/2007 11:07	ppm	B5NEc	18.73	< LOD	< LOD	< LOD	39.32	< LOD	< LOD	< LOD	12,797.58	202.21	< LOD	< LOD
10	4/24/2007 10:31	ppm	B5NWc	33.85	< LOD	< LOD	< LOD	62.19	< LOD	< LOD	< LOD	7,225.44	191.98	< LOD	40.79
9	4/24/2007 10:13	ppm	B5SWc	61.34	< LOD	< LOD	< LOD	60.7	< LOD	< LOD	< LOD	10,992.61	153.13	< LOD	< LOD
7	4/24/2007 10:03	ppm	B5SEc	127.82	< LOD	< LOD	< LOD	135.83	41.55	< LOD	< LOD	13,451.29	220.21	< LOD	54.46
42	4/27/2007 7:19	ppm	B5c 0-.5	33.56	< LOD	< LOD	< LOD	65.22	< LOD	< LOD	< LOD	8,341.18	158.33	< LOD	< LOD
43	4/27/2007 7:22	ppm	B5c 2-2.5	27.77	< LOD	< LOD	< LOD	51.18	< LOD	< LOD	< LOD	8,238.69	322.16	< LOD	37.4
Grid B-6															
31	12/8/2006 15:43	ppm	B6Cc	216.07	< LOD	< LOD	< LOD	515.22	228.81	< LOD	< LOD	23,491.19	554.85	< LOD	51.78
32	12/8/2006 15:47	ppm	B6CSc	1696.82	< LOD	105.22	< LOD	2248.14	1361.39	< LOD	< LOD	79,471.33	1635.73	112.88	70.22
33	12/8/2006 15:50	ppm	B6SWc	51.85	< LOD	< LOD	< LOD	171.04	25.25	< LOD	< LOD	11,465.39	483.84	< LOD	60.77
31	12/8/2006 15:43	ppm	B6Cc	216.07	< LOD	< LOD	< LOD	515.22	228.81	< LOD	< LOD	23,491.19	554.85	< LOD	51.78
32	12/8/2006 15:47	ppm	B6CSc	1696.82	< LOD	105.22	< LOD	2248.14	1361.39	< LOD	< LOD	79,471.33	1635.73	112.88	70.22
63	12/9/2006 12:11	ppm	B6CSc	422.26	< LOD	< LOD	< LOD	680.86	426.79	< LOD	< LOD	22,667.31	569.36	< LOD	61.91
33	12/8/2006 15:50	ppm	B6SWc	51.85	< LOD	< LOD	< LOD	171.04	25.25	< LOD	< LOD	11,465.39	483.84	< LOD	60.77
84	12/10/2006 8:03	ppm	B6CEc	67.47	< LOD	< LOD	< LOD	82.63	< LOD	< LOD	< LOD	11,344.25	479.3	< LOD	45.21
85	12/10/2006 8:12	ppm	B6CWc	58.6	< LOD	< LOD	< LOD	86.72	< LOD	< LOD	< LOD	11,495.71	401.12	< LOD	40.09
19	12/14/2006 10:29	ppm	B6NEc	117.1	< LOD	< LOD	< LOD	132.46	34.73	< LOD	< LOD	11,664.78	419.64	< LOD	45.86
20	12/14/2006 10:35	ppm	B6Cc-R	163.14	< LOD	< LOD	< LOD	197.2	68.68	56.54	< LOD	11,953.23	358.09	< LOD	55.11
3	12/14/2006 13:43	ppm	B6CSc-R	224.49	< LOD	< LOD	< LOD	288.91	117.56	< LOD	< LOD	13,287.42	316.84	< LOD	42.52

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
25	4/15/2007 16:16	ppm	B6Cc	44.08	< LOD	< LOD	< LOD	53.54	< LOD	< LOD	< LOD	10,320.45	182.38	< LOD	< LOD
24	4/15/2007 16:11	ppm	B6NEc	55.41	< LOD	< LOD	< LOD	68.62	< LOD	< LOD	< LOD	9,553.93	213.7	< LOD	45.62
27	4/15/2007 16:46	ppm	B6NWc	37.65	< LOD	< LOD	< LOD	70.07	< LOD	< LOD	< LOD	10,267.28	431.52	< LOD	35.53
23	4/15/2007 16:05	ppm	B6SEc	138.82	< LOD	< LOD	< LOD	185.19	54.17	< LOD	< LOD	11,735.53	219.83	< LOD	50.5
22	4/15/2007 16:00	ppm	B6SWc	64.73	< LOD	< LOD	< LOD	70.14	< LOD	< LOD	< LOD	9,305.40	340.38	< LOD	45.74
23	4/24/2007 11:44	ppm	B6NEc	25.13	< LOD	< LOD	< LOD	55.18	< LOD	< LOD	< LOD	10,753.76	202.06	110.35	44.18
20	4/24/2007 11:32	ppm	B6NWc	27.72	< LOD	< LOD	< LOD	57.38	< LOD	< LOD	< LOD	9,194.89	171.51	< LOD	38.75
17	4/24/2007 11:20	ppm	B6SEc	23.57	< LOD	< LOD	6.57	45.19	< LOD	< LOD	< LOD	10,830.36	130.21	< LOD	< LOD
24	4/24/2007 11:49	ppm	B6SWc 20in	21.6	< LOD	< LOD	< LOD	51.69	50.25	< LOD	< LOD	8,927.39	155.01	< LOD	54.03
22	4/24/2007 11:41	ppm	B6Cc	26.43	< LOD	< LOD	< LOD	47.9	< LOD	< LOD	< LOD	10,572.94	179.12	< LOD	35.82
55	4/27/2007 11:37	ppm	RE73-07-74808c 0-0.5	16.87	< LOD	< LOD	< LOD	80.24	< LOD	< LOD	< LOD	6,587.17	304.32	< LOD	31.71
Grid B-7															
40	12/8/2006 16:16	ppm	B7SEc	156.52	< LOD	< LOD	< LOD	114.35	25.64	< LOD	< LOD	22,140.12	564.98	< LOD	56.08
52	12/9/2006 9:34	ppm	B7CEc	190.19	< LOD	< LOD	< LOD	133.11	< LOD	< LOD	< LOD	18,117.35	520.81	< LOD	75.58
112	12/10/2006 12:30	ppm	B7CNc	122.23	< LOD	< LOD	< LOD	183.5	56.95	< LOD	< LOD	12,593.04	413.62	< LOD	43.88
47	4/12/2007 15:57	ppm	B7SWc	59.74	< LOD	< LOD	< LOD	64.4	< LOD	< LOD	< LOD	10,342.94	363.2	< LOD	53.99
12	4/13/2007 9:27	ppm	B7Cc	43.61	< LOD	< LOD	< LOD	63.12	< LOD	< LOD	< LOD	9,265.53	241.68	93.48	< LOD
10	4/13/2007 9:03	ppm	B7NEc	36.7	< LOD	< LOD	< LOD	74.57	< LOD	< LOD	< LOD	8,094.48	251.89	< LOD	49.63
13	4/13/2007 9:37	ppm	B7NWc	59.33	< LOD	< LOD	< LOD	113.85	32.2	< LOD	< LOD	10,527.57	427.55	< LOD	38.78
8	4/13/2007 8:45	ppm	B7SEc	98.03	< LOD	< LOD	< LOD	119.16	38.38	< LOD	< LOD	11,633.90	309.61	< LOD	< LOD
23	4/25/2007 9:22	ppm	B7NEc	35.23	< LOD	< LOD	< LOD	78.61	< LOD	< LOD	< LOD	9,636.79	205.75	< LOD	49.53
25	4/25/2007 9:43	ppm	B7NEc	89.5	< LOD	< LOD	< LOD	99.47	< LOD	< LOD	< LOD	11,271.81	286.96	< LOD	< LOD
22	4/25/2007 9:19	ppm	B7NWc	45.26	< LOD	< LOD	< LOD	110.65	< LOD	< LOD	< LOD	10,684.99	291.62	< LOD	62.71
21	4/25/2007 9:13	ppm	B7SEc	85.01	< LOD	< LOD	< LOD	96.86	50.44	< LOD	< LOD	10,671.56	424.74	< LOD	< LOD
24	4/25/2007 9:26	ppm	B7SWc	32.97	< LOD	< LOD	7.04	69.19	25.93	< LOD	< LOD	8,777.73	392.9	< LOD	85.16
27	4/26/2007 15:24	ppm	RE73-07-74826c 0-0.5	28.55	< LOD	< LOD	< LOD	75.68	< LOD	< LOD	< LOD	7,322.02	353.81	< LOD	38.16
Grid B-8															
76	12/9/2006 14:55	ppm	B8Cc	85.76	< LOD	< LOD	< LOD	85.72	< LOD	< LOD	< LOD	12,513.83	439.85	< LOD	< LOD

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
78	12/9/2006 15:14	ppm	B8CNc	182.45	< LOD	< LOD	< LOD	90.04	< LOD	< LOD	< LOD	16,389.36	606.89	< LOD	46.49
79	12/9/2006 15:19	ppm	B8CWc	468.04	< LOD	< LOD	< LOD	114.92	< LOD	< LOD	< LOD	26,147.16	597.45	< LOD	< LOD
31	4/12/2007 14:48	ppm	B8Cc	154.45	< LOD	< LOD	< LOD	90.35	28.45	< LOD	< LOD	16,015.82	436.15	< LOD	55.79
32	4/12/2007 14:53	ppm	B8NEc	60.03	< LOD	< LOD	< LOD	86.34	< LOD	< LOD	< LOD	8,309.51	307.83	< LOD	< LOD
33	4/12/2007 14:56	ppm	B8SWc	191.65	< LOD	< LOD	< LOD	125.4	< LOD	< LOD	< LOD	16,185.02	579.91	< LOD	36.06
39	4/12/2007 15:19	ppm	B8SEc	291.07	< LOD	< LOD	< LOD	307.5	121.47	< LOD	< LOD	14,516.19	398.23	< LOD	50.66
40	4/12/2007 15:26	ppm	B8NWc	70.95	< LOD	< LOD	< LOD	67.27	< LOD	< LOD	< LOD	10,596.67	345.62	< LOD	53.06
29	4/25/2007 9:58	ppm	B8Cc	49	< LOD	< LOD	< LOD	90.78	< LOD	< LOD	< LOD	7,802.75	304.98	< LOD	33.51
26	4/25/2007 9:47	ppm	B8NEc	105.86	< LOD	< LOD	< LOD	65.08	< LOD	< LOD	< LOD	11,745.24	411.51	< LOD	< LOD
30	4/25/2007 10:01	ppm	B8NWc	114.86	< LOD	< LOD	< LOD	90.55	< LOD	< LOD	< LOD	11,325.88	285.25	< LOD	< LOD
27	4/25/2007 9:49	ppm	B8SEc	62.82	< LOD	< LOD	< LOD	78.14	< LOD	< LOD	< LOD	10,265.48	363.59	< LOD	50.49
28	4/25/2007 9:53	ppm	B8SWc	99.71	< LOD	< LOD	< LOD	105.61	24.15	< LOD	< LOD	10,345.00	253.29	< LOD	35.71
23	4/26/2007 14:44	ppm	RE73-07-74689c 0-0.5	22.34	< LOD	< LOD	< LOD	63.38	< LOD	< LOD	< LOD	6,277.23	298.18	< LOD	< LOD
24	4/26/2007 14:47	ppm	RE73-07-74690c 2-2.5	32.39	< LOD	< LOD	< LOD	69.74	< LOD	< LOD	< LOD	7,191.04	338.62	< LOD	< LOD
Grid B-9															
16	4/13/2007 9:56	ppm	B9Cc	52.54	< LOD	< LOD	< LOD	85.75	< LOD	< LOD	< LOD	10,039.81	366.13	< LOD	< LOD
9	4/13/2007 8:52	ppm	B9NEc	84.52	< LOD	< LOD	< LOD	78.34	< LOD	< LOD	< LOD	9,667.72	372.75	< LOD	< LOD
15	4/13/2007 9:48	ppm	B9NEc	70.62	< LOD	< LOD	< LOD	84.27	< LOD	< LOD	< LOD	9,771.08	404.22	< LOD	< LOD
14	4/13/2007 9:42	ppm	B9NWc	51.47	< LOD	< LOD	< LOD	86.45	< LOD	< LOD	< LOD	9,792.99	346.27	< LOD	34.35
7	4/13/2007 8:34	ppm	B9SEc	106.85	< LOD	< LOD	< LOD	67.26	33.74	< LOD	< LOD	10,416.90	291.72	< LOD	41.38
6	4/13/2007 8:17	ppm	B9SWc	53.96	< LOD	< LOD	< LOD	78.33	< LOD	< LOD	< LOD	9,010.17	365.11	< LOD	< LOD
Grid C-1															
7	11/11/2006 9:04	ppm	C1NWc	2193.86	< LOD	117.82	< LOD	7361.65	5647.02	< LOD	< LOD	91,292.38	2947		
11	11/11/2006 9:22	ppm	C1SWc	549.62	< LOD	< LOD	< LOD	1176.69	243.24	< LOD	< LOD	19,331.45	807.17		
24	11/11/2006 10:08	ppm	C1Cc	894.24	< LOD	48.79	10.63	1620.19	939.2	< LOD	< LOD	40,164.40	1038.88		
2	11/15/2006 14:24	ppm	C1Cf	94.5	< LOD	< LOD	< LOD	277.57	70.01	< LOD	< LOD	18,144.28	360.33		
3	11/15/2006 14:27	ppm	C1NEf	101.73	< LOD	< LOD	< LOD	170.07	34.98	< LOD	< LOD	15,614.58	372.15		
4	11/15/2006 14:29	ppm	C1SEf	160.07	< LOD	< LOD	< LOD	369.34	88.33	< LOD	< LOD	14,374.90	400.4		

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
5	11/15/2006 14:32	ppm	C1SWf	177.48	< LOD	< LOD	< LOD	509.12	83.61	< LOD	< LOD	13,924.66	433.34		
1	11/17/2006 8:46	ppm	C1Cf-R	80.82	< LOD	< LOD	< LOD	177.94	61.67	78.84	< LOD	14,406.21	413.92		
2	11/17/2006 8:50	ppm	C1SWf	50.9	< LOD	< LOD	< LOD	91.67	49.54	< LOD	< LOD	11,131.22	239.86		
3	11/17/2006 8:54	ppm	C1NWf	111.4	< LOD	< LOD	< LOD	209.78	38.96	< LOD	< LOD	14,072.34	381.06		
4	11/17/2006 8:59	ppm	C1NEf-R	72.1	< LOD	< LOD	< LOD	85.74	36.95	< LOD	< LOD	14,879.49	372.2		
10	11/17/2006 14:11	ppm	C1Cc-R	91.27	< LOD	< LOD	< LOD	170.6	54.85	< LOD	< LOD	13,373.79	351.23		
6	11/28/2006 15:19	ppm	C1Cc lab	88.62	< LOD	15.47	< LOD	211.67	77.33	< LOD	< LOD	14,325.84	323.09	< LOD	90.91
5	4/10/2007 13:24	ppm	C1SEc	56.83	< LOD	< LOD	< LOD	95.23	29.26	< LOD	< LOD	12,151.82	233.01	< LOD	57.08
6	4/10/2007 13:28	ppm	C1SWc	175.38	< LOD	< LOD	< LOD	269.9	131.58	< LOD	< LOD	18,026.08	342.86	< LOD	54.48
7	4/10/2007 13:32	ppm	C1NCc	45.88	< LOD	< LOD	< LOD	112.67	< LOD	< LOD	< LOD	12,782.27	217.06	< LOD	48.43
8	4/10/2007 13:35	ppm	C1Cc	163.77	< LOD	< LOD	< LOD	72.25	27.35	< LOD	< LOD	11,518.61	399.87	< LOD	68.32
35	4/25/2007 13:17	ppm	C1c0-.5	27.93	< LOD	< LOD	< LOD	57.19	< LOD	< LOD	< LOD	22,332.63	283.43	< LOD	50.64
14	4/26/2007 11:58	ppm	C1c0-.5-R	145.19	< LOD	< LOD	< LOD	289.97	77.48	< LOD	< LOD	12,620.64	290.14	< LOD	132.86
16	4/26/2007 12:06	ppm	C1Cc-R	111.88	< LOD	< LOD	< LOD	241.51	51.64	< LOD	< LOD	12,455.38	317.6	89.75	81.39
18	11/17/2006 15:05	ppm	RE73-07-74732 0-1ftb	68.67	< LOD	11.05	< LOD	190.14	49.44	< LOD	< LOD	11,073.60	540.1		
19	11/17/2006 15:11	ppm	RE73-07-74733 1.5-2.5ftb	44.58	< LOD	< LOD	< LOD	120.88	< LOD	< LOD	< LOD	8,336.86	204.49		
20	11/17/2006 15:14	ppm	RE73-07-74734 3.5-4.5ftb	26.88	< LOD	< LOD	< LOD	83.28	< LOD	< LOD	< LOD	7,202.91	266.4		
21	11/17/2006 15:24	ppm	RE73-07-74732 0-1ftc	73.57	< LOD	< LOD	< LOD	148.67	55.73	< LOD	< LOD	11,322.85	319.37		
Grid C-2															
1	11/17/2006 12:13	ppm	C2Cf	183.84	< LOD	< LOD	7.39	488.12	215.34	< LOD	< LOD	19,344.42	398.87		
2	11/17/2006 12:17	ppm	C2NEf	1707.86	< LOD	142.87	< LOD	7570.26	57265.81	< LOD	< LOD	61,954.62	1789.59		
3	11/17/2006 12:20	ppm	C2NWf	202.9	< LOD	< LOD	< LOD	408.46	143.39	< LOD	< LOD	16,726.14	638.05		
4	11/17/2006 12:23	ppm	C2SWf	131.85	< LOD	< LOD	< LOD	188.52	47.15	< LOD	< LOD	14,422.00	327.1		
30	11/19/2006 10:13	ppm	C2CEf	312.93	< LOD	< LOD	< LOD	834.28	182.55	< LOD	< LOD	20,685.52	527.12		
32	11/19/2006 10:16	ppm	C2NEf	416.05	< LOD	< LOD	< LOD	1073.73	260.31	< LOD	< LOD	29,620.14	810.36		
1	11/20/2006 12:50	ppm	C2NEf	246.29	< LOD	< LOD	< LOD	898.67	188.01	< LOD	< LOD	33,995.79	519.24	< LOD	77.97
3	11/20/2006 12:55	ppm	C2CNf	21.11	< LOD	< LOD	< LOD	67.49	< LOD	< LOD	< LOD	10,374.12	< LOD	< LOD	< LOD
4	11/20/2006 12:58	ppm	C2NWf	150.08	< LOD	< LOD	< LOD	331.23	80.89	< LOD	< LOD	20,903.78	578.33	< LOD	59.55

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
5	11/20/2006 13:02	ppm	C2Cf	208.73	< LOD	32.58	< LOD	575.33	159.14	< LOD	< LOD	21,947.62	806.6	< LOD	88.08
6	11/20/2006 13:05	ppm	C2SWf	166.45	< LOD	< LOD	< LOD	274.53	44.25	< LOD	< LOD	14,688.67	409.74	< LOD	71.83
17	11/20/2006 15:53	ppm	C2Cf	71.61	< LOD	< LOD	< LOD	389.06	69.23	< LOD	< LOD	17,561.97	577.07	< LOD	62.63
15	11/17/2006 14:44	ppm	RE73-07-74726 0-1ftb	44.74	< LOD	< LOD	< LOD	159.67	89.96	< LOD	< LOD	9,669.00	153.98		
16	11/17/2006 14:47	ppm	RE73-07-74727 1.5-2.75ftb	14.86	< LOD	< LOD	< LOD	45.46	< LOD	< LOD	< LOD	6,070.10	243.3		
17	11/17/2006 14:51	ppm	RE73-07-74728 3.5-4.5ftb	18.73	< LOD	< LOD	< LOD	65.68	< LOD	< LOD	< LOD	7,513.85	188.12		
Grid C-3															
2	11/20/2006 12:52	ppm	C3SEf	41.17	< LOD	< LOD	< LOD	56.69	< LOD	< LOD	< LOD	13,834.42	258.24	< LOD	< LOD
18	11/20/2006 15:56	ppm	C3Cf	43.78	< LOD	< LOD	< LOD	145.39	< LOD	< LOD	< LOD	11,285.25	347.3	< LOD	< LOD
19	11/20/2006 16:00	ppm	C3SEf-R	308.84	< LOD	< LOD	< LOD	732.22	271.36	< LOD	< LOD	18,576.58	463.54	< LOD	84.44
20	11/20/2006 16:02	ppm	C3CSf	50.4	< LOD	< LOD	< LOD	132.98	48.59	< LOD	< LOD	15,343.75	509.42	< LOD	< LOD
17	11/26/2006 10:31	ppm	C3Cf-R	33.49	< LOD	< LOD	< LOD	68.71	< LOD	< LOD	< LOD	13,292.75	261.17	< LOD	< LOD
18	11/26/2006 10:35	ppm	C3NWf	135.49	< LOD	< LOD	< LOD	314.99	71.19	< LOD	< LOD	12,949.62	336.1	< LOD	78.12
34	11/27/2006 7:58	ppm	C3Cc	27.92	< LOD	< LOD	< LOD	60.79	< LOD	< LOD	< LOD	10,631.40	340.68	< LOD	44.92
58	11/27/2006 13:13	ppm	RE73-07-74753 0-1.5ft	29.8	< LOD	< LOD	< LOD	48.45	< LOD	< LOD	< LOD	14,518.36	160.36	< LOD	49.72
59	11/27/2006 13:17	ppm	RE73-07-74754 2.25-3ft	30.27	< LOD	< LOD	< LOD	38.43	< LOD	< LOD	< LOD	9,379.22	261	< LOD	< LOD
60	11/27/2006 13:22	ppm	RE73-07-74755 4-5.5ft	25.69	< LOD	< LOD	< LOD	55.85	< LOD	< LOD	< LOD	6,866.51	275.51	< LOD	30.15
7	11/28/2006 15:22	ppm	C3Cc lab	57.1	< LOD	< LOD	< LOD	54.27	< LOD	< LOD	< LOD	10,479.65	189.46	< LOD	41.36
Grid C-4															
15	11/15/2006 15:17	ppm	C4Cf	562.38	< LOD	< LOD	< LOD	1381.92	382.06	< LOD	< LOD	134,727.95	2188.28		
23	11/26/2006 10:51	ppm	C4SWf	54.49	< LOD	< LOD	< LOD	131.78	< LOD	< LOD	< LOD	9,554.28	253.93	< LOD	49.02
24	11/26/2006 10:53	ppm	C4Cf	32.67	< LOD	< LOD	< LOD	251.76	< LOD	< LOD	< LOD	9,529.08	232.72	< LOD	< LOD
6	11/27/2006 15:33	ppm	C4NWf	278.88	< LOD	< LOD	< LOD	349.11	107.82	< LOD	< LOD	30,881.77	535.77	< LOD	76.52
7	11/27/2006 15:35	ppm	C4NEf-R	45.26	< LOD	< LOD	< LOD	90.01	36.49	< LOD	< LOD	13,901.81	422.84	< LOD	< LOD
49	11/27/2006 11:02	ppm	C4NEf	406.69	< LOD	< LOD	< LOD	566.81	145.04	< LOD	< LOD	33,474.87	517.65	< LOD	< LOD
13	11/28/2006 8:51	ppm	RE73-07-74769 1.5-3ft	20.17	< LOD	< LOD	< LOD	55.06	< LOD	< LOD	< LOD	6,741.62	280.27	< LOD	< LOD
12	11/28/2006 8:48	ppm	RE73-07-74768 0-1.5ft	16.27	< LOD	< LOD	< LOD	67.16	< LOD	< LOD	< LOD	8,103.07	313.22	< LOD	30.31

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
14	11/28/2006 8:55	ppm	RE73-07-74770 3-4ft	18.24	< LOD	< LOD	< LOD	63.11	< LOD	< LOD	< LOD	6,872.11	290.67	< LOD	< LOD
5	12/13/2006 11:26	ppm	C4NWc	26.09	< LOD	< LOD	< LOD	51.35	< LOD	< LOD	< LOD	9,747.97	220.66	< LOD	< LOD
6	12/13/2006 11:33	ppm	C4CNc-R	44.33	< LOD	< LOD	< LOD	125.7	< LOD	< LOD	< LOD	10,683.43	281.51	< LOD	40.84
Grid C-5															
5	11/28/2006 11:32	ppm	C5Cc 0-6in	132.94	< LOD	< LOD	< LOD	152.49	53.53	< LOD	< LOD	25,062.70	272.16	< LOD	60.87
17	11/29/2006 13:34	ppm	RE73-07-74790 0-1.5ft	49.78	< LOD	< LOD	< LOD	73.74	< LOD	< LOD	< LOD	12,822.89	226.17	< LOD	41.8
18	11/29/2006 13:39	ppm	RE73-07-74791 2-3.5ft	84.26	< LOD	< LOD	< LOD	181.67	< LOD	< LOD	< LOD	17,145.62	258.32	< LOD	< LOD
87	12/10/2006 8:32	ppm	C5CSc	25	< LOD	< LOD	< LOD	58.74	< LOD	< LOD	< LOD	9,436.55	249.54	< LOD	43.15
101	12/10/2006 10:55	ppm	C5CWc	110.61	< LOD	< LOD	< LOD	159.42	51.75	< LOD	< LOD	12,103.82	400.84	< LOD	< LOD
2	12/11/2006 16:46	ppm	C5NWc	25.22	< LOD	< LOD	< LOD	64.23	30.54	< LOD	< LOD	8,819.60	104.88	< LOD	37.38
13	12/12/2006 8:01	ppm	C5CNc	615.39	< LOD	< LOD	< LOD	519.57	167.92	< LOD	< LOD	34,831.48	566.41	< LOD	73.59
14	12/12/2006 8:08	ppm	C5NEc	795.31	< LOD	< LOD	< LOD	845.4	225.99	< LOD	< LOD	42,409.36	802.07	< LOD	109.01
16	12/12/2006 8:25	ppm	C5NNEc	1013.59	< LOD	< LOD	< LOD	1217.12	287.14	< LOD	< LOD	45,489.09	671.12	< LOD	160.34
18	12/12/2006 10:34	ppm	C5Nc-R	723.74	< LOD	< LOD	< LOD	1001.73	222.97	76.99	< LOD	38,867.13	762.84	< LOD	136.21
14	12/14/2006 8:42	ppm	C5CWc-R	256.64	< LOD	< LOD	< LOD	457.27	136.33	< LOD	< LOD	14,435.72	325.64	< LOD	51.59
42	4/16/2007 14:00	ppm	C5Cc	56.5	< LOD	< LOD	< LOD	74.78	29.13	< LOD	< LOD	10,173.23	241.01	< LOD	< LOD
49	4/16/2007 14:32	ppm	C5NECc	318.2	< LOD	< LOD	< LOD	424.89	110.12	< LOD	< LOD	18,018.29	380.41	< LOD	64.72
48	4/16/2007 14:29	ppm	C5NWCc	278.98	< LOD	< LOD	< LOD	187.2	59.39	< LOD	< LOD	27,738.51	363.05	< LOD	39.21
46	4/16/2007 14:15	ppm	C5SECc	31.22	< LOD	< LOD	< LOD	73.11	< LOD	< LOD	< LOD	9,588.85	211.05	< LOD	34.6
47	4/16/2007 14:24	ppm	C5SWCc	104.59	< LOD	< LOD	< LOD	146.58	53.74	< LOD	< LOD	11,260.60	249.73	< LOD	38.3
Grid C-6															
77	12/9/2006 15:07	ppm	C6CNc	339.41	< LOD	< LOD	< LOD	447.41	129.56	< LOD	< LOD	24,203.91	516.98	< LOD	51.6
80	12/9/2006 15:24	ppm	C6CEc	421.14	< LOD	< LOD	< LOD	218.98	69.04	< LOD	< LOD	23,160.32	522.54	< LOD	72.79
91	12/10/2006 9:12	ppm	C6CWc	48.94	< LOD	< LOD	< LOD	81.39	26.37	< LOD	< LOD	11,750.32	357.26	< LOD	45.56
116	12/10/2006 12:51	ppm	C6CNc	393.18	< LOD	< LOD	< LOD	471.52	158.84	< LOD	< LOD	25,788.52	489.59	< LOD	76.58
109	12/10/2006 11:53	ppm	C6Cc	110.93	< LOD	< LOD	< LOD	53.04	24.16	< LOD	< LOD	12,622.20	375.13	< LOD	< LOD
1	12/11/2006 16:35	ppm	C6CbTREE	24.84	< LOD	< LOD	< LOD	31.8	< LOD	< LOD	< LOD	9,731.70	140.03	< LOD	39.06
19	4/12/2007 14:02	ppm	C6SEc	307.73	< LOD	< LOD	< LOD	242.18	84.86	< LOD	< LOD	15,544.34	538.22	< LOD	67.07

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
28	4/12/2007 14:33	ppm	C6SWc	62.97	< LOD	< LOD	< LOD	82.21	26.56	< LOD	< LOD	9,106.28	175.58	< LOD	< LOD
29	4/12/2007 14:38	ppm	C6NWc	50.22	< LOD	< LOD	< LOD	57.54	< LOD	< LOD	< LOD	9,485.72	248.35	< LOD	39.45
30	4/12/2007 14:42	ppm	C6Cc	30.17	< LOD	< LOD	< LOD	55.72	< LOD	< LOD	< LOD	8,334.90	150.06	< LOD	36.38
6	4/15/2007 9:59	ppm	C6NEc	32.53	< LOD	< LOD	< LOD	52.51	< LOD	< LOD	< LOD	11,649.98	292.64	< LOD	< LOD
11	4/19/2007 7:36	ppm	C6Cc	92.95	< LOD	< LOD	< LOD	69.96	< LOD	< LOD	< LOD	10,265.44	210.69	< LOD	59.19
13	4/19/2007 7:44	ppm	C6NWc	46.91	< LOD	< LOD	< LOD	69.84	23.9	< LOD	< LOD	10,512.74	365.59	< LOD	45.68
8	4/19/2007 7:17	ppm	C6SEc	105.97	< LOD	< LOD	< LOD	96.03	< LOD	< LOD	< LOD	12,555.82	300.61	< LOD	49.05
7	4/19/2007 7:14	ppm	C6SWc	83.92	< LOD	< LOD	< LOD	89.65	27.15	< LOD	< LOD	10,860.60	342.35	< LOD	52.02
71	4/23/2007 14:48	ppm	C6Cb 12in	30.22	< LOD	< LOD	< LOD	50.39	33.31	< LOD	< LOD	9,669.30	127.32	< LOD	< LOD
72	4/23/2007 14:49	ppm	C6Cb 12in	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	8,985.20	158.05		
65	4/23/2007 14:24	ppm	C6Cb 24in	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	10,499.79	< LOD		
66	4/23/2007 14:27	ppm	C6Cb 24in	16.34	< LOD	< LOD	< LOD	44.64	< LOD	< LOD	< LOD	10,190.50	140.76	< LOD	37.08
62	4/23/2007 13:59	ppm	C6Cc 12in	27.3	< LOD	< LOD	< LOD	38.96	< LOD	< LOD	< LOD	10,268.59	138.05	< LOD	< LOD
61	4/23/2007 13:51	ppm	C6Cc 24in	24.51	< LOD	< LOD	< LOD	61.47	< LOD	< LOD	< LOD	11,130.93	194.41	< LOD	38.57
68	4/23/2007 14:38	ppm	C6NEc	115.36	< LOD	< LOD	< LOD	90.46	< LOD	< LOD	< LOD	14,560.58	222.61	< LOD	87.74
63	4/23/2007 14:13	ppm	C6NWc 4in	33.83	< LOD	< LOD	< LOD	51.59	< LOD	< LOD	< LOD	12,451.71	221.55	124.17	76.18
69	4/23/2007 14:41	ppm	C6SEc	51.63	< LOD	< LOD	< LOD	91.94	28.24	< LOD	< LOD	11,660.34	253.68	< LOD	54.09
64	4/23/2007 14:23	ppm	C6SEc 4in	50.05	< LOD	< LOD	< LOD	78.18	37.82	< LOD	< LOD	12,259.32	242.08	< LOD	49.11
75	4/23/2007 15:51	ppm	C6SWb	23.07	< LOD	< LOD	< LOD	47.73	26.47	< LOD	< LOD	9,587.50	123.58	< LOD	< LOD
67	4/23/2007 14:35	ppm	C6SWc	614.88	< LOD	< LOD	< LOD	184.41	70.48	< LOD	< LOD	16,330.09	244.82	< LOD	54.94
73	4/23/2007 15:41	ppm	C6SWc-R	23.72	< LOD	< LOD	< LOD	49.43	< LOD	< LOD	< LOD	9,905.20	159.31	< LOD	< LOD
74	4/23/2007 15:44	ppm	C6SWc-R	22.12	< LOD	< LOD	< LOD	51.94	29.74	< LOD	< LOD	10,179.66	220.12	< LOD	32.8
9	4/26/2007 10:22	ppm	RE73-07-74811c 0-0.5	25	< LOD	< LOD	< LOD	50.11	< LOD	< LOD	< LOD	11,969.02	199.28	< LOD	49.44
10	4/26/2007 10:25	ppm	RE73-07-74812c 2-2.5	21.25	< LOD	< LOD	< LOD	56.21	< LOD	< LOD	< LOD	7,273.48	298.92	< LOD	< LOD
Grid C-7															
37	12/8/2006 16:05	ppm	C7Cc	431.94	< LOD	< LOD	< LOD	493.68	176.81	< LOD	< LOD	35,959.66	722.51	< LOD	60.01
38	12/8/2006 16:09	ppm	C7Cc2	97.4	< LOD	< LOD	< LOD	99.84	35.68	< LOD	< LOD	14,188.27	490.17	< LOD	48.6
41	12/8/2006 16:19	ppm	C7CEc	247.54	< LOD	< LOD	< LOD	339.34	159.43	< LOD	< LOD	19,598.11	608.67	< LOD	57.01

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
49	12/9/2006 9:21	ppm	C7CSc	655.84	< LOD	< LOD	< LOD	704.64	264.23	< LOD	< LOD	37,214.18	666.86	< LOD	100.91
106	12/10/2006 11:35	ppm	C7Cc-R	545.77	< LOD	< LOD	< LOD	578.95	246.91	< LOD	< LOD	57,305.86	839.12	< LOD	69.5
111	12/10/2006 12:24	ppm	C7CScR	394.96	< LOD	< LOD	< LOD	455.21	110.35	< LOD	< LOD	27,869.13	436.82	< LOD	54.44
15	4/12/2007 13:11	ppm	C7SWc	50.79	< LOD	< LOD	< LOD	75.88	< LOD	< LOD	< LOD	10,247.63	494.37	< LOD	46.52
16	4/12/2007 13:20	ppm	C7Cc	339.08	< LOD	< LOD	< LOD	295.31	103.83	< LOD	< LOD	16,006.05	478.09	< LOD	< LOD
17	4/12/2007 13:29	ppm	C7NEc	236.16	< LOD	< LOD	< LOD	138.04	73.24	< LOD	< LOD	14,982.08	303.09	< LOD	< LOD
18	4/12/2007 13:34	ppm	C7NWc	192.61	< LOD	< LOD	< LOD	250.66	96.7	< LOD	< LOD	15,569.22	510.55	< LOD	60.47
25	4/12/2007 14:22	ppm	C7SEc	40.59	< LOD	< LOD	< LOD	68.75	< LOD	< LOD	< LOD	10,333.39	290.27	< LOD	< LOD
26	4/12/2007 14:26	ppm	C7NEc	34.02	< LOD	< LOD	< LOD	56.2	< LOD	< LOD	< LOD	11,766.83	309.87	< LOD	56.88
9	4/19/2007 7:20	ppm	C7NEc	291.77	< LOD	< LOD	< LOD	134.35	58.85	< LOD	< LOD	15,398.38	400.24	< LOD	< LOD
15	4/24/2007 11:00	ppm	C7C6c	31.12	< LOD	< LOD	< LOD	59.03	< LOD	< LOD	204.55	12,768.19	165.57	< LOD	70.51
11	4/24/2007 10:38	ppm	C7NEc	26.41	< LOD	< LOD	< LOD	65.6	< LOD	< LOD	< LOD	9,107.33	276.51	< LOD	56.38
12	4/24/2007 10:42	ppm	C7NWc	33.06	< LOD	< LOD	< LOD	65.54	< LOD	< LOD	< LOD	10,805.83	218.79	< LOD	< LOD
13	4/24/2007 10:51	ppm	C7SEc	23.04	< LOD	< LOD	< LOD	49.77	< LOD	< LOD	< LOD	10,390.59	389.77	< LOD	< LOD
14	4/24/2007 10:56	ppm	C7SWc	25.87	< LOD	< LOD	< LOD	47.21	24.56	< LOD	< LOD	11,386.10	190.92	< LOD	52.54
11	4/26/2007 11:06	ppm	RE73-07-74829c 0-0.5	24.66	< LOD	< LOD	6.64	76.56	32.51	< LOD	< LOD	10,253.87	327.89	< LOD	65.37
12	4/26/2007 11:23	ppm	RE73-07-74830c 2-2.5	23.49	< LOD	< LOD	< LOD	80.71	< LOD	< LOD	< LOD	8,223.77	285.48	< LOD	35.6
Grid C-8															
92	12/10/2006 9:22	ppm	C8CWc	570.4	< LOD	< LOD	< LOD	214.58	34.65	< LOD	381.35	49,533.57	1393.21	< LOD	79.79
95	12/10/2006 9:58	ppm	C8CNc	478.51	< LOD	< LOD	< LOD	795.81	246.97	< LOD	< LOD	60,577.36	748.04	< LOD	111.45
96	12/10/2006 10:07	ppm	C8SWc	492.11	< LOD	< LOD	< LOD	177.92	48.44	< LOD	337.16	42,841.71	771.19	< LOD	68.94
94	12/10/2006 9:35	ppm	C8CWc	474.37	< LOD	< LOD	< LOD	230.38	60	< LOD	< LOD	26,327.03	1212.53	< LOD	< LOD
44	4/12/2007 15:43	ppm	C8Cc	60.71	< LOD	< LOD	< LOD	72.32	< LOD	< LOD	< LOD	10,966.12	355.42	< LOD	60.06
45	4/12/2007 15:48	ppm	C8NWc	64.39	< LOD	< LOD	< LOD	86	< LOD	< LOD	< LOD	10,277.99	404.2	< LOD	44.56
46	4/12/2007 15:54	ppm	C8SWc	357.48	< LOD	< LOD	< LOD	121.47	27.86	< LOD	< LOD	19,223.16	529.22	< LOD	72.86
48	4/12/2007 16:02	ppm	C8NEc	176.09	< LOD	< LOD	< LOD	166.77	43.93	< LOD	< LOD	14,939.88	353.47	< LOD	52.89
49	4/12/2007 16:05	ppm	C8SEc	205.78	< LOD	< LOD	< LOD	94.27	29.61	< LOD	< LOD	18,041.57	425.29	< LOD	80.64
33	4/25/2007 11:30	ppm	C8SWc	25.43	< LOD	< LOD	< LOD	58.7	< LOD	< LOD	< LOD	9,869.81	248.96	< LOD	47.62

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
15	4/26/2007 12:03	ppm	RE73-07-74691c 0-0.5	30.81	< LOD	< LOD	< LOD	68.18	< LOD	< LOD	< LOD	9,420.23	290.8	< LOD	32.41
13	4/26/2007 11:42	ppm	RE73-07-74692c 2-2.5	25.56	< LOD	< LOD	< LOD	99.02	< LOD	< LOD	< LOD	8,519.97	256.37	< LOD	38.29
Grid C-9															
14	12/15/2006 10:29	ppm	C9Cc	48.25	< LOD	< LOD	< LOD	70.33	< LOD	< LOD	< LOD	11,121.94	412.84	< LOD	< LOD
15	12/15/2006 10:31	ppm	C9SEc	418.66	< LOD	< LOD	< LOD	136.66	< LOD	91.58	< LOD	27,284.37	539.91	< LOD	43.95
16	12/15/2006 10:34	ppm	C9NEc	616.14	< LOD	< LOD	< LOD	165.68	63.52	< LOD	< LOD	36,424.54	1061	< LOD	51.59
17	12/15/2006 10:37	ppm	C9NWc	154.96	< LOD	< LOD	< LOD	122.19	38.39	< LOD	< LOD	11,524.03	407.35	< LOD	46.4
18	12/15/2006 11:40	ppm	C9SWc	153.85	< LOD	< LOD	< LOD	108.75	< LOD	< LOD	< LOD	12,703.79	1260.06	< LOD	< LOD
20	4/13/2007 10:19	ppm	C9NEc-R	136.64	< LOD	< LOD	< LOD	190.23	41.08	< LOD	< LOD	13,707.92	283.43	< LOD	< LOD
17	4/13/2007 10:01	ppm	C9NWc	70	< LOD	< LOD	< LOD	85.08	< LOD	< LOD	< LOD	10,247.01	332.94	96.6	< LOD
19	4/13/2007 10:12	ppm	C9SEc-R	177.28	< LOD	< LOD	< LOD	174.99	59.47	< LOD	< LOD	15,550.76	288.74	< LOD	44.3
18	4/13/2007 10:08	ppm	C9SWc	109.18	< LOD	< LOD	< LOD	105.83	23.73	< LOD	< LOD	11,556.32	419.52	< LOD	< LOD
44	4/16/2007 14:07	ppm	C9Cc	55.83	< LOD	< LOD	< LOD	69.65	< LOD	< LOD	< LOD	11,091.27	337.73	< LOD	52.54
26	4/26/2007 14:57	ppm	C9c 0-.5	52.97	< LOD	< LOD	< LOD	88.72	< LOD	< LOD	< LOD	9,828.67	275.9	< LOD	46.31
25	4/26/2007 14:50	ppm	C9c 2-2.5	33.5	< LOD	< LOD	< LOD	73.82	< LOD	< LOD	< LOD	10,895.47	313.94	< LOD	35.6
Grid C-10															
7	12/17/2006 8:18	ppm	C10Cc	101.85	< LOD	< LOD	< LOD	220.43	39.01	< LOD	< LOD	13,713.05	415.43	< LOD	51.51
15	4/15/2007 13:23	ppm	C10Sc	115.45	< LOD	< LOD	< LOD	302.63	42.69	< LOD	189.62	13,828.18	355.99	< LOD	76.71
13	4/15/2007 13:11	ppm	C10SECc	33.17	< LOD	< LOD	< LOD	51.51	< LOD	< LOD	< LOD	9,492.15	229.2	< LOD	43
14	4/15/2007 13:19	ppm	C10SWCc	127.29	< LOD	< LOD	< LOD	290.13	< LOD	< LOD	< LOD	14,711.43	395.17	< LOD	124.44
Grid D-1															
9	11/11/2006 9:14	ppm	D1SEf	197.09	< LOD	< LOD	< LOD	326.01	83.78	< LOD	< LOD	16,791.60	379.25		
13	11/11/2006 9:30	ppm	D1SWf	151.1	< LOD	< LOD	< LOD	193.59	51.05	< LOD	< LOD	12,255.51	253.85		
17	11/11/2006 9:44	ppm	D1Cc	1023.91	< LOD	59.11	< LOD	2284.14	576.59	< LOD	451.99	97,992.38	1095.76		
27	11/16/2006 15:01	ppm	D1Cf	679.81	< LOD	55.82	< LOD	1258.11	226.08	< LOD	< LOD	16,758.95	690.17		
22	12/1/2006 13:41	ppm	D1Cf-R	55.62	< LOD	< LOD	< LOD	82.78	< LOD	< LOD	< LOD	13,364.28	300.41	< LOD	69.17
23	12/1/2006 13:43	ppm	D1Cf	71.88	< LOD	< LOD	< LOD	104.42	< LOD	< LOD	< LOD	11,360.26	327.36	< LOD	72.99
24	12/1/2006 13:44	ppm	D1Cf	102.54	< LOD	< LOD	< LOD	145.17	71.38	< LOD	< LOD	12,956.76	224.67	< LOD	56.67

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
25	12/1/2006 14:06	ppm	D1CEf	70	< LOD	< LOD	< LOD	122.35	< LOD	< LOD	< LOD	12,371.58	272.36	< LOD	< LOD
26	12/1/2006 14:08	ppm	D1NWf	25.6	< LOD	< LOD	< LOD	45.74	< LOD	< LOD	< LOD	11,220.83	341.18	< LOD	< LOD
54	12/9/2006 9:45	ppm	RE73-07-74841 0-1ft	35.3	< LOD	< LOD	< LOD	69.49	< LOD	< LOD	< LOD	13,263.96	338.98	< LOD	64.49
55	12/9/2006 9:48	ppm	RE73-07-74842 1-2ft	22.57	< LOD	< LOD	< LOD	52.8	< LOD	< LOD	< LOD	10,583.20	299.04	< LOD	39.22
Grid D-2															
28	11/16/2006 15:05	ppm	D2Cf	89.81	< LOD	< LOD	< LOD	208.83	77.56	< LOD	< LOD	22,306.60	442.2		
29	11/16/2006 15:06	ppm	D2Cf-R	25.21	< LOD	< LOD	< LOD	46.19	< LOD	< LOD	< LOD	7,819.82	398.08		
5	11/17/2006 9:01	ppm	D2SWf	271.59	< LOD	< LOD	< LOD	627.61	162.64	< LOD	444.75	52,151.40	771.25		
6	11/17/2006 9:07	ppm	D2NEf	735.96	< LOD	< LOD	< LOD	1475.64	371.32	93.5	< LOD	35,561.65	817.99		
7	11/17/2006 9:10	ppm	D2SEf	136.21	< LOD	< LOD	< LOD	235.96	60	< LOD	< LOD	16,262.95	568.03		
6	11/17/2006 13:58	ppm	D2Cc	322.74	< LOD	< LOD	< LOD	627.41	160.85	< LOD	< LOD	26,379.05	633.42		
33	11/19/2006 10:29	ppm	D2CWf	30.27	< LOD	< LOD	< LOD	104.6	39.93	< LOD	< LOD	19,880.37	201.26		
34	11/19/2006 10:32	ppm	D2Cf-R	119.22	< LOD	< LOD	< LOD	275.91	64.33	< LOD	< LOD	19,817.11	366.98		
35	11/19/2006 10:42	ppm	D2CEf	134.85	< LOD	< LOD	< LOD	538.52	272.84	< LOD	< LOD	18,636.14	334.94		
1	11/19/2006 12:51	ppm	D2NEf-R	50.91	< LOD	< LOD	< LOD	95.52	49.46	< LOD	< LOD	14,451.72	209.81		
4	11/19/2006 12:59	ppm	D2NWf	129.3	< LOD	24.64	< LOD	307.38	53.26	< LOD	< LOD	13,829.45	367.49		
29	11/21/2006 8:15	ppm	RE73-07-74747 0-2ft	16.87	< LOD	< LOD	< LOD	35.29	< LOD	< LOD	< LOD	12,242.39	254.42	< LOD	< LOD
30	11/21/2006 8:23	ppm	RE73-07-74748 2-3ft	17.08	< LOD	< LOD	< LOD	26.57	< LOD	< LOD	< LOD	10,310.57	244.72	< LOD	44.71
31	11/21/2006 8:33	ppm	RE73-07-74749 3-5ft	15.82	< LOD	< LOD	< LOD	39.44	< LOD	< LOD	< LOD	12,491.36	286.4	< LOD	39.79
8	11/28/2006 15:25	ppm	D2Cc lab	111.18	< LOD	< LOD	< LOD	235.16	30.04	< LOD	< LOD	18,632.52	449.29	< LOD	91.3
Grid D-3															
2	11/19/2006 12:54	ppm	D3SEf	87.18	< LOD	< LOD	< LOD	162.77	59.35	105.89	< LOD	17,114.27	305.78		
3	11/19/2006 12:56	ppm	D3CSf	76.4	< LOD	< LOD	< LOD	360.21	< LOD	< LOD	< LOD	9,702.52	143.63		
2	11/26/2006 9:48	ppm	D3SWf	79.38	< LOD	< LOD	< LOD	170.39	40.93	< LOD	< LOD	14,630.24	330.27	< LOD	< LOD
4	11/26/2006 9:54	ppm	D3SEf	113.69	< LOD	< LOD	< LOD	284.83	61.63	< LOD	< LOD	27,845.48	403.56	< LOD	71
8	11/26/2006 10:07	ppm	D3NEf	189.33	< LOD	< LOD	< LOD	411.23	93.11	< LOD	< LOD	14,564.89	434.79	< LOD	77.96
9	11/26/2006 10:10	ppm	D3Cf	133.37	< LOD	< LOD	< LOD	327.16	93.49	< LOD	< LOD	21,308.69	322.05	< LOD	< LOD
36	11/27/2006 8:07	ppm	D3Cc	80.68	< LOD	< LOD	< LOD	157.52	32.77	< LOD	< LOD	12,525.06	223.82	< LOD	58.27

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
61	11/27/2006 13:26	ppm	RE73-07-74756 0-2.5ft	24.07	< LOD	< LOD	< LOD	52.4	< LOD	< LOD	< LOD	9,079.61	278.55	< LOD	40.79
62	11/27/2006 13:36	ppm	RE73-07-74757 3-4ft	24.45	< LOD	< LOD	< LOD	48.47	< LOD	< LOD	< LOD	7,904.19	294.33	< LOD	29.54
Grid D-4															
17	11/15/2006 15:25	ppm	D4Cf	337.38	< LOD	< LOD	< LOD	704.17	836.57	< LOD	< LOD	37,194.41	690.86		
14	11/26/2006 10:24	ppm	D4Cf	86.06	< LOD	< LOD	< LOD	173.35	50.38	< LOD	< LOD	13,463.99	266.65	< LOD	< LOD
15	11/26/2006 10:26	ppm	D4SEf	269.41	< LOD	< LOD	< LOD	736.74	393.28	< LOD	< LOD	23,066.40	564.85	< LOD	54.74
16	11/26/2006 10:29	ppm	D4SWf	54.05	< LOD	< LOD	< LOD	82.63	< LOD	< LOD	< LOD	10,991.49	195.06	< LOD	< LOD
7	11/28/2006 11:44	ppm	RE73-07-74771 0-1.5ft	55.12	< LOD	< LOD	< LOD	68.41	< LOD	< LOD	< LOD	10,302.98	345.39	< LOD	36.74
8	11/28/2006 11:48	ppm	RE73-07-74772 2-3ft	21.13	< LOD	< LOD	< LOD	69.19	< LOD	< LOD	< LOD	7,660.14	260.86	< LOD	35.03
13	12/14/2006 8:35	ppm	D4NWc	29.62	< LOD	< LOD	< LOD	64.75	< LOD	< LOD	< LOD	11,548.14	342.06	< LOD	40.18
Grid D-5															
16	11/15/2006 15:22	ppm	D5SEf	137.13	< LOD	< LOD	< LOD	234.75	175.76	< LOD	< LOD	29,100.13	508.76		
8	11/27/2006 15:38	ppm	D5Cf	510.41	< LOD	< LOD	< LOD	515.26	135.48	113.84	< LOD	76,623.38	726.7	< LOD	< LOD
6	11/28/2006 11:35	ppm	D5Cc 0-6in	23.39	< LOD	< LOD	< LOD	61.09	< LOD	< LOD	< LOD	8,248.52	167.31	< LOD	< LOD
19	11/29/2006 13:43	ppm	RE73-07-74793 0-1ft	14.79	< LOD	< LOD	< LOD	45.97	< LOD	< LOD	< LOD	7,042.97	215.74	< LOD	55.6
20	11/29/2006 13:46	ppm	RE73-07-74794 2-3ft	20.99	< LOD	< LOD	< LOD	52.93	< LOD	< LOD	< LOD	6,525.60	297.76	< LOD	44.64
97	12/10/2006 10:31	ppm	D5SWc	77.72	< LOD	< LOD	< LOD	99.96	26.61	< LOD	< LOD	12,176.87	281.25	< LOD	< LOD
98	12/10/2006 10:40	ppm	D5CWc	66.66	< LOD	< LOD	< LOD	119.61	< LOD	< LOD	< LOD	12,258.01	184.6	< LOD	< LOD
103	12/10/2006 11:07	ppm	D5CSc	84.98	< LOD	< LOD	< LOD	174.42	47.21	< LOD	< LOD	10,887.24	212.52	< LOD	38.98
6	4/18/2007 8:18	ppm	D5 NEc	58.29	< LOD	< LOD	< LOD	79.48	< LOD	< LOD	< LOD	9,833.86	168.68	< LOD	41.74
7	4/18/2007 8:25	ppm	D5 NESc	277	< LOD	< LOD	< LOD	388.95	126.58	< LOD	< LOD	15,311.09	379.38	< LOD	57.19
Grid D-6															
47	12/9/2006 9:14	ppm	D6CEc	183.26	< LOD	< LOD	9.49	108.63	57.59	< LOD	< LOD	14,495.70	240.04	< LOD	68.76
50	12/9/2006 9:24	ppm	D6CSc	141.72	< LOD	< LOD	< LOD	200.37	< LOD	< LOD	< LOD	13,065.33	278.31	< LOD	42.65
68	12/9/2006 13:37	ppm	D6SEc	107.12	< LOD	< LOD	< LOD	143.56	32	< LOD	< LOD	15,232.23	693.21	< LOD	73.54
48	12/16/2006 9:49	ppm	D6NEc	151.5	< LOD	< LOD	< LOD	206.21	47.71	< LOD	< LOD	13,433.45	704.16	< LOD	66.62
9	4/12/2007 12:35	ppm	D6SCc	62.2	< LOD	< LOD	< LOD	74.76	< LOD	< LOD	< LOD	10,313.83	238.76	< LOD	46.27
10	4/12/2007 12:42	ppm	D6NEc	370.94	< LOD	< LOD	< LOD	159.74	72.82	< LOD	< LOD	15,428.13	355.3	< LOD	73.71

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
15	4/19/2007 7:55	ppm	D6Cc	30.52	< LOD	< LOD	< LOD	54.88	< LOD	< LOD	< LOD	9,176.78	237.42	88.08	< LOD
10	4/19/2007 7:28	ppm	D6NEc-R	34.07	< LOD	< LOD	< LOD	53.26	< LOD	< LOD	< LOD	9,972.86	325.79	< LOD	< LOD
6	4/19/2007 7:10	ppm	D6NWc	330.46	< LOD	< LOD	< LOD	260.83	105.25	< LOD	< LOD	21,581.68	441.91	< LOD	48.36
14	4/19/2007 7:51	ppm	D6SEc	195.44	< LOD	< LOD	< LOD	207.41	56.22	< LOD	< LOD	17,139.85	429.43	< LOD	64.3
12	4/19/2007 7:39	ppm	D6SWc	158.74	< LOD	< LOD	< LOD	225.41	71.51	< LOD	< LOD	12,729.82	241.56	< LOD	65.7
40	4/25/2007 14:25	ppm	RE73-07-74814c 0-0.5	43.72	< LOD	< LOD	< LOD	55.37	< LOD	< LOD	< LOD	10,129.29	200.07	< LOD	44.52
39	4/25/2007 13:58	ppm	RE73-07-74815c 2-2.5	30.47	< LOD	< LOD	< LOD	51	< LOD	< LOD	< LOD	9,782.87	168.55	< LOD	57.42
Grid D-7															
90	12/10/2006 9:00	ppm	D7CWc	133.85	< LOD	< LOD	< LOD	115.44	< LOD	< LOD	< LOD	13,768.29	511.76	< LOD	75.06
104	12/10/2006 11:18	ppm	D7CWc	174.08	< LOD	< LOD	< LOD	83.2	31.57	< LOD	< LOD	11,117.35	565.28	< LOD	46.26
114	12/10/2006 12:40	ppm	D7SWc	150.01	< LOD	< LOD	< LOD	127.76	30.84	< LOD	< LOD	12,493.92	687.75	< LOD	99.65
49	12/16/2006 9:59	ppm	D7SEc	68.08	< LOD	< LOD	< LOD	50.34	< LOD	< LOD	< LOD	11,347.92	361.88	< LOD	51.84
8	4/12/2007 12:24	ppm	D7 SWc	57.39	< LOD	< LOD	< LOD	77.48	35.54	< LOD	< LOD	11,212.80	432.44	< LOD	67.02
11	4/12/2007 12:48	ppm	D7 C	65.72	< LOD	< LOD	< LOD	99.06	< LOD	< LOD	< LOD	10,890.27	449.16	< LOD	57.59
12	4/12/2007 12:55	ppm	D7 NEc	309.2	< LOD	< LOD	< LOD	130.49	< LOD	< LOD	< LOD	11,522.58	499.28	< LOD	59.77
13	4/12/2007 13:01	ppm	D7 SE c	56.96	< LOD	< LOD	< LOD	72.76	24.78	< LOD	< LOD	9,728.77	384.37	< LOD	43.31
14	4/12/2007 13:07	ppm	D7 NWc	247.19	< LOD	< LOD	< LOD	323.45	94.88	59.49	< LOD	16,287.14	523.39	131.16	88.87
44	4/20/2007 7:29	ppm	D7 Cc	76.34	< LOD	< LOD	< LOD	108.88	33.09	< LOD	< LOD	10,406.23	468.08	< LOD	40.65
49	4/20/2007 8:01	ppm	D7 NEc	104.02	< LOD	< LOD	< LOD	120.01	< LOD	< LOD	< LOD	11,439.69	488.4	< LOD	75.65
56	4/20/2007 8:43	ppm	D7 NWc	130.8	< LOD	< LOD	< LOD	103.43	27.64	< LOD	< LOD	14,287.04	320.38	< LOD	54.05
53	4/20/2007 8:27	ppm	D7 SEc	45.18	< LOD	< LOD	< LOD	93.21	< LOD	< LOD	< LOD	10,858.90	887.09	< LOD	61.28
42	4/20/2007 7:19	ppm	D7 SWc	230.48	< LOD	< LOD	< LOD	276.74	69.24	< LOD	< LOD	17,937.96	468.21	< LOD	116.91
11	4/20/2007 15:06	ppm	D7 NWc	24.79	< LOD	< LOD	< LOD	43.85	< LOD	< LOD	< LOD	10,754.10	199.55	< LOD	50.33
12	4/20/2007 15:22	ppm	D7 SEc	44.17	< LOD	< LOD	< LOD	57.48	28.34	< LOD	< LOD	10,105.41	351.77	< LOD	< LOD
1	4/25/2007 16:16	ppm	RE73-07-74833c 0-0.5	22.08	< LOD	< LOD	< LOD	76.5	< LOD	< LOD	< LOD	7,247.54	319.25	< LOD	46.69
2	4/25/2007 16:20	ppm	RE73-07-74834 2-2.5c	44.05	< LOD	< LOD	< LOD	71.35	< LOD	< LOD	< LOD	8,430.75	368.32	< LOD	40.72
Grid D-8															
125	12/10/2006 13:42	ppm	D8CNc	28.86	< LOD	< LOD	< LOD	68.82	< LOD	< LOD	< LOD	9,103.13	434.06	< LOD	< LOD

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
128	12/10/2006 13:59	ppm	D8SEc	99.09	< LOD	14.92	< LOD	114.52	34.45	< LOD	< LOD	12,157.55	910.75	< LOD	< LOD
7	12/15/2006 9:58	ppm	D8NWc	597.84	< LOD	< LOD	< LOD	344.1	130.04	< LOD	365.12	40,521.55	688.07	< LOD	45.04
8	12/15/2006 10:05	ppm	D8CNc	50.36	< LOD	< LOD	< LOD	80.68	< LOD	< LOD	< LOD	11,218.85	330.78	< LOD	75.66
11	12/15/2006 10:19	ppm	D8Cc	142.33	< LOD	< LOD	< LOD	124.45	< LOD	< LOD	< LOD	11,462.45	531.17	< LOD	52.44
38	4/12/2007 15:15	ppm	D8SEc	121.73	< LOD	< LOD	< LOD	85.45	35.11	< LOD	< LOD	10,439.43	440.57	< LOD	< LOD
41	4/12/2007 15:29	ppm	D8NEc	181.42	< LOD	< LOD	< LOD	76.4	< LOD	< LOD	< LOD	16,191.91	720.54	< LOD	47.59
42	4/12/2007 15:33	ppm	D8NWc-RE	165.28	< LOD	< LOD	< LOD	157.28	54.41	< LOD	< LOD	19,203.41	368.19	< LOD	37.47
43	4/12/2007 15:38	ppm	D8Cc	100.86	< LOD	17.42	< LOD	114.52	< LOD	< LOD	< LOD	12,891.75	419.27	< LOD	44.57
28	4/15/2007 16:57	ppm	D8SWc	336.47	< LOD	< LOD	< LOD	85.78	< LOD	< LOD	< LOD	10,196.46	364.44	< LOD	< LOD
14	4/21/2007 13:58	ppm	D8W 8 in	41.34	< LOD	< LOD	< LOD	73.62	< LOD	< LOD	< LOD	7,122.28	273.04	< LOD	35.74
16	4/21/2007 14:14	ppm	D8Cc 7 in	33.22	< LOD	< LOD	< LOD	71.1	< LOD	< LOD	< LOD	8,543.09	304.56	< LOD	40.97
24	4/21/2007 14:59	ppm	D8NWc 8 in	409.36	< LOD	< LOD	< LOD	138.14	37.45	< LOD	< LOD	60,359.84	665.24	< LOD	58.45
25	4/21/2007 15:14	ppm	D8NWc 8 in-1	445.03	< LOD	< LOD	< LOD	140.02	54.74	< LOD	< LOD	32,246.79	546.58	95.68	< LOD
34	4/21/2007 16:02	ppm	D8Wb 8 in	44.76	< LOD	< LOD	< LOD	59.05	< LOD	< LOD	< LOD	7,117.87	414.43	< LOD	51.01
27	4/21/2007 15:25	ppm	D8NWb	379.78	< LOD	< LOD	< LOD	129.17	< LOD	< LOD	335.24	37,518.03	557.91	< LOD	58.25
48	4/23/2007 9:09	ppm	D8Cb 7in	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	9,188.41	< LOD		
49	4/23/2007 9:11	ppm	D8Cb 7in	29.57	< LOD	< LOD	< LOD	80.5	< LOD	< LOD	< LOD	7,820.73	414.44	< LOD	< LOD
50	4/23/2007 9:12	ppm	D8Cb 7in	31.79	< LOD	< LOD	< LOD	69.2	< LOD	< LOD	< LOD	7,849.70	362.2	< LOD	46.51
51	4/23/2007 9:14	ppm	D8Cb 7in	25.46	< LOD	< LOD	< LOD	64.94	26.82	< LOD	< LOD	7,075.21	280.81	< LOD	32.43
47	4/23/2007 8:27	ppm	D8Cc-1	33.62	< LOD	< LOD	< LOD	70.02	< LOD	< LOD	< LOD	8,082.97	305.15	< LOD	29.81
11	4/24/2007 17:20	ppm	D8NWc-R	183.35	< LOD	< LOD	< LOD	116.57	< LOD	< LOD	< LOD	17,898.02	559.08	< LOD	67.21
18	4/25/2007 8:28	ppm	D8 NEc	53.26	< LOD	< LOD	< LOD	101.75	< LOD	< LOD	< LOD	8,054.79	358.08	< LOD	32.96
19	4/25/2007 8:33	ppm	D8 SEc	44.42	< LOD	< LOD	< LOD	85.22	< LOD	< LOD	< LOD	8,525.26	252.45	< LOD	42.47
20	4/25/2007 8:37	ppm	D8 SWc	67.34	< LOD	< LOD	< LOD	59	< LOD	< LOD	< LOD	11,714.17	391.84	< LOD	< LOD
11	4/24/2007 17:20	ppm	D8c-R	183.35	< LOD	< LOD	< LOD	116.57	< LOD	< LOD	< LOD	17,898.02	559.08	< LOD	67.21
3	4/25/2007 16:25	ppm	'RE73-07-74693c 0-0.5	40.83	< LOD	< LOD	< LOD	92.24	< LOD	< LOD	< LOD	7,746.87	355.74	< LOD	38.61
4	4/25/2007 16:29	ppm	RE73-07-74694c 2-2.5	34.02	< LOD	< LOD	< LOD	119.81	< LOD	< LOD	< LOD	7,383.55	360.01	< LOD	29.43

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
Grid D-9															
11	4/15/2007 12:58	ppm	D9 Cc	83.16	< LOD	< LOD	< LOD	135.47	24.43	< LOD	< LOD	11,007.25	348.21	< LOD	< LOD
12	4/15/2007 13:02	ppm	D9 NEc	125.11	< LOD	< LOD	< LOD	88.48	< LOD	< LOD	< LOD	9,182.42	494.85	< LOD	< LOD
8	4/15/2007 12:25	ppm	D9 NWc	122.69	< LOD	< LOD	< LOD	151.37	48.27	< LOD	< LOD	14,526.38	277.55	< LOD	< LOD
9	4/15/2007 12:51	ppm	D9 SEc	44.88	< LOD	< LOD	< LOD	87.21	23.87	< LOD	< LOD	9,435.97	371.82	< LOD	35.28
10	4/15/2007 12:55	ppm	D9 SWc	150.76	< LOD	< LOD	< LOD	168.86	58.62	< LOD	< LOD	14,635.18	359.94	< LOD	44.54
Grid D-10															
16	4/15/2007 13:26	ppm	D10 Cc	134.85	< LOD	< LOD	< LOD	148.49	< LOD	< LOD	< LOD	13,338.87	524.92	< LOD	< LOD
Grid E-1															
14	11/11/2006 9:34	ppm	E1Cf	768.38	< LOD	< LOD	< LOD	832.66	155.53	< LOD	< LOD	14,812.27	576.43		
15	11/11/2006 9:37	ppm	E1NWf	342.7	< LOD	< LOD	< LOD	813.95	287.75	< LOD	< LOD	26,673.02	649.14		
18	11/11/2006 9:48	ppm	E1NEf	809.59	< LOD	< LOD	< LOD	1674.8	402.9	< LOD	< LOD	29,400.63	690.38		
8	11/17/2006 9:13	ppm	E1Cf	404.66	< LOD	< LOD	< LOD	1059.53	627.37	< LOD	< LOD	26,301.53	594.16		
22	11/19/2006 9:48	ppm	E1NEf	215.26	< LOD	< LOD	< LOD	359.57	78.46	< LOD	< LOD	14,759.57	421.33		
23	11/19/2006 9:50	ppm	E1NWf	250.48	< LOD	< LOD	< LOD	383.14	106.32	87.11	< LOD	15,332.30	499.82		
28	11/19/2006 10:07	ppm	E1Cf	542.39	< LOD	< LOD	< LOD	875.25	245.83	99.85	< LOD	29,754.62	607.14		
31	4/26/2007 16:08	ppm	E1c	63.66	< LOD	< LOD	< LOD	95.19	45.56	< LOD	< LOD	11,334.09	341.79	< LOD	43.44
1	4/27/2007 14:44	ppm	E1Ec	23.63	< LOD	< LOD	< LOD	56.81	< LOD	< LOD	< LOD	10,873.11	292.7	< LOD	40.92
2	4/27/2007 14:49	ppm	E1NEc	57.71	< LOD	< LOD	< LOD	80.38	< LOD	< LOD	< LOD	11,316.04	304.73	< LOD	59.86
3	4/27/2007 14:54	ppm	E1SEc	23.83	< LOD	< LOD	< LOD	47.05	< LOD	< LOD	< LOD	11,488.38	355.14	< LOD	48.2
4	4/27/2007 14:57	ppm	E1Wc	25.5	< LOD	< LOD	< LOD	61.21	< LOD	< LOD	< LOD	9,939.93	215.77	< LOD	48.01
5	4/27/2007 15:07	ppm	E1NCc	121.77	< LOD	< LOD	< LOD	164.21	82.32	< LOD	< LOD	13,416.18	374.54	< LOD	36.45
6	4/27/2007 15:11	ppm	E1NWc	108.44	< LOD	< LOD	< LOD	175.91	43.83	< LOD	< LOD	12,372.59	314.46	< LOD	98.36
47	4/27/2007 8:59	ppm	E1NEc	200.32	< LOD	< LOD	< LOD	303.06	59.56	< LOD	< LOD	11,311.75	331.56	< LOD	114.62
46	4/27/2007 8:55	ppm	E1NWc	53.45	< LOD	< LOD	< LOD	126.36	26.19	< LOD	< LOD	10,856.88	256.48	< LOD	< LOD
44	4/27/2007 8:49	ppm	E1SEc	28.26	< LOD	< LOD	< LOD	78	< LOD	< LOD	< LOD	13,358.16	312.42	< LOD	48.16
45	4/27/2007 8:52	ppm	E1SWc	93.36	< LOD	< LOD	< LOD	188.44	47.78	< LOD	< LOD	12,859.41	270.04	< LOD	37.95

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
Grid E-2															
8	11/17/2006 9:18	ppm	E2Cf	110.69	< LOD	23.98	< LOD	346.82	46.09	< LOD	< LOD	19,674.59	260.18		
9	11/17/2006 14:07	ppm	E2Cc	54.62	< LOD	< LOD	< LOD	114.98	< LOD	< LOD	< LOD	12,900.50	151.93		
10	11/17/2006 9:22	ppm	E2NEf	602.95	< LOD	< LOD	< LOD	1786.92	296.77	92.64	< LOD	31,579.34	798.14		
11	11/17/2006 9:25	ppm	E2NWf	1268.85	< LOD	< LOD	< LOD	3753.74	2293.84	181.7	< LOD	75,470.59	1120.57		
25	11/19/2006 9:53	ppm	E2Cf	497.16	< LOD	40.48	8.91	1013.94	187.47	< LOD	< LOD	20,825.89	555.73		
10	11/20/2006 8:55	ppm	E2Cf	524.12	< LOD	< LOD	< LOD	567.74	109.94	< LOD	< LOD	20,531.39	621.97	< LOD	139.96
11	11/20/2006 9:01	ppm	E2NEf-R	124.9	< LOD	< LOD	< LOD	230.23	< LOD	< LOD	< LOD	16,383.72	365.53	< LOD	128.52
13	11/20/2006 9:15	ppm	E2NWf-R	75.31	< LOD	< LOD	< LOD	170.91	47.99	< LOD	< LOD	15,244.32	226.58	< LOD	< LOD
14	11/20/2006 9:20	ppm	E2Cf-R	< LOD	< LOD	< LOD	< LOD	43.12	< LOD	< LOD	< LOD	13,947.38	225	< LOD	< LOD
32	11/21/2006 8:36	ppm	RE73-07-74744 0-1ft	15.75	< LOD	< LOD	< LOD	49.77	< LOD	< LOD	< LOD	7,288.53	260.68	< LOD	30.85
33	11/21/2006 8:43	ppm	RE73-07-74745 1-2.5ft	12.37	< LOD	< LOD	< LOD	43.13	< LOD	< LOD	< LOD	7,225.59	328.3	< LOD	< LOD
34	11/21/2006 8:47	ppm	RE73-07-74746 3-4ft	22.2	< LOD	< LOD	< LOD	46.64	< LOD	< LOD	< LOD	6,933.03	299.84	< LOD	31.84
10	11/28/2006 15:31	ppm	E2Cc lab	22.22	< LOD	< LOD	< LOD	54.99	< LOD	< LOD	< LOD	8,114.77	206.37	< LOD	< LOD
Grid E-3															
12	11/20/2006 9:04	ppm	F3SWf	140.91	< LOD	< LOD	< LOD	348.23	95.25	< LOD	< LOD	13,340.23	444.62	< LOD	100.68
15	11/20/2006 9:25	ppm	E3Cf	1252.09	< LOD	< LOD	< LOD	1891	728.7	124.41	< LOD	42,247.87	1064	156.13	118.55
1	11/26/2006 9:43	ppm	E3SWf	40.55	< LOD	< LOD	< LOD	179.44	< LOD	< LOD	< LOD	11,402.56	281.17	< LOD	< LOD
3	11/26/2006 9:51	ppm	E3CSf	61.59	< LOD	< LOD	< LOD	143.59	36.63	< LOD	< LOD	13,167.01	357.52	< LOD	< LOD
5	11/26/2006 9:58	ppm	E3Cf-R	296.14	< LOD	43.3	< LOD	642.86	255.18	< LOD	< LOD	18,696.49	479.08	< LOD	68.37
6	11/26/2006 10:03	ppm	E3NEf	576	< LOD	< LOD	< LOD	1479.42	375.29	106.7	< LOD	20,518.69	784.97	< LOD	163.57
7	11/26/2006 10:05	ppm	E3NWf	257.7	< LOD	< LOD	< LOD	536.06	187.19	< LOD	< LOD	14,280.36	455.57	< LOD	< LOD
10	11/26/2006 10:13	ppm	E3NEf-R	131.31	< LOD	< LOD	< LOD	235.71	64.59	< LOD	< LOD	10,417.52	463.41	< LOD	53.93
35	11/27/2006 8:02	ppm	E3Cc	636.2	< LOD	< LOD	< LOD	1117.96	996.49	< LOD	< LOD	20,658.95	614.8	82.92	73.87
9	11/28/2006 15:28	ppm	E3Cc lab	143.47	< LOD	< LOD	< LOD	389.09	140.52	94.5	< LOD	11,746.11	411.3	< LOD	42.91
63	11/27/2006 13:41	ppm	RE73-07-74759 0-1.5ft	44.47	< LOD	< LOD	< LOD	54.78	< LOD	< LOD	< LOD	7,097.18	316.3	< LOD	< LOD
64	11/27/2006 13:49	ppm	RE73-07-74760 2-3ft	37.5	< LOD	< LOD	< LOD	61.2	< LOD	< LOD	< LOD	7,252.21	310.17	< LOD	29.37

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
Grid E-4															
8	11/16/2006 7:40	ppm	E4SWb	663.06	< LOD	46.36	< LOD	2364.29	485.71	54.99	< LOD	31,163.85	680.4		
9	11/16/2006 8:18	ppm	E4SWc	790.56	< LOD	< LOD	< LOD	2192.1	1191.1	91.64	< LOD	37,302.84	824.02		
11	11/26/2006 10:16	ppm	E4SEf	132.43	< LOD	< LOD	< LOD	288.05	519.8	< LOD	< LOD	15,285.20	466.25	< LOD	< LOD
12	11/26/2006 10:18	ppm	E4Cf	121.84	< LOD	< LOD	< LOD	242.92	89.64	< LOD	< LOD	10,452.16	264.71	< LOD	< LOD
16	11/27/2006 16:20	ppm	E4Cf	194.09	< LOD	< LOD	< LOD	723.32	94.64	< LOD	< LOD	22,693.16	454.96	< LOD	< LOD
37	11/27/2006 8:11	ppm	E4Cc	115.38	< LOD	< LOD	< LOD	228.14	77.47	< LOD	< LOD	14,852.55	332.52	< LOD	48.5
15	11/28/2006 9:01	ppm	RE73-07-74774 0-2ft	23.95	< LOD	< LOD	< LOD	50.74	< LOD	< LOD	< LOD	7,610.91	336.89	< LOD	< LOD
16	11/28/2006 9:05	ppm	RE73-07-74775 2.5-4f	13.38	< LOD	8.99	< LOD	59.13	< LOD	< LOD	< LOD	7,397.75	320.7	< LOD	< LOD
21	12/12/2006 16:32	ppm	E4NWc	431.45	< LOD	< LOD	< LOD	713.21	298.45	< LOD	< LOD	18,093.64	494.38	< LOD	57.75
22	12/12/2006 16:36	ppm	E4CNc	370.28	< LOD	< LOD	< LOD	674.43	182.64	< LOD	< LOD	16,883.07	483.97	< LOD	69.37
23	12/12/2006 16:46	ppm	E4SEc	844.71	< LOD	< LOD	< LOD	1719.19	380.05	66.23	< LOD	20,775.94	734.78	89.32	139.18
1	12/13/2006 14:34	ppm	E4Cc	29.31	< LOD	< LOD	< LOD	65.19	< LOD	< LOD	< LOD	8,244.25	245.04	< LOD	39.41
2	12/13/2006 14:54	ppm	E4SWc	33.02	< LOD	< LOD	< LOD	81.58	< LOD	< LOD	< LOD	9,950.03	260.22	< LOD	54.29
3	12/13/2006 15:04	ppm	E4NWc	26.88	< LOD	< LOD	< LOD	49.82	25.08	< LOD	< LOD	7,887.34	272.72	< LOD	32.08
4	12/13/2006 15:10	ppm	E4SEc	394.03	< LOD	< LOD	< LOD	647.6	183.91	< LOD	< LOD	14,952.46	533.96	109.99	58.83
8	12/14/2006 7:34	ppm	E4NEc	631.89	< LOD	< LOD	< LOD	1109.86	292.08	< LOD	< LOD	22,743.79	623.19	< LOD	56.98
19	12/15/2006 12:47	ppm	E4NWc	20.86	< LOD	< LOD	< LOD	60.56	< LOD	< LOD	< LOD	8,046.50	220.61	< LOD	< LOD
20	12/15/2006 13:26	ppm	E4SWc	41.63	< LOD	< LOD	8.48	70.21	< LOD	< LOD	< LOD	10,113.67	302.98	< LOD	35.16
23	12/15/2006 13:50	ppm	E4Cc-R	31.04	< LOD	< LOD	< LOD	71.25	< LOD	< LOD	< LOD	8,283.87	339.49	< LOD	< LOD
24	12/15/2006 13:54	ppm	E4NEc-R	137.05	< LOD	< LOD	< LOD	206.26	80.72	< LOD	< LOD	10,115.43	351.32	< LOD	54.08
25	12/15/2006 14:00	ppm	E4SEc-R	34.83	< LOD	< LOD	< LOD	84.21	< LOD	< LOD	< LOD	7,907.15	312.62	< LOD	40.45
Grid E-5															
119	12/10/2006 13:07	ppm	E5CNc	215.25	< LOD	< LOD	< LOD	1394.78	93.39	< LOD	< LOD	15,744.81	448.63	< LOD	48.82
120	12/10/2006 13:14	ppm	E5CWc	1393.04	< LOD	< LOD	< LOD	2010.13	645.36	< LOD	< LOD	72,678.45	1297.07	< LOD	107.75
121	12/10/2006 13:20	ppm	E5CNc	218.22	< LOD	< LOD	< LOD	232.71	47.59	< LOD	231.66	14,820.34	538.64	< LOD	< LOD
122	12/10/2006 13:27	ppm	E5NEc	658.38	< LOD	< LOD	< LOD	1041.67	322.52	< LOD	474	44,255.73	1030.83	< LOD	64.24
9	12/14/2006 7:38	ppm	E5Cc	434.44	< LOD	< LOD	< LOD	792.58	281.11	< LOD	< LOD	16,270.92	430.58	104.2	56.63

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
10	12/14/2006 7:52	ppm	E5NEc	121	< LOD	< LOD	< LOD	120.72	30.47	< LOD	< LOD	12,911.50	344.73	< LOD	50.85
11	12/14/2006 7:58	ppm	E5SEc	104.73	< LOD	< LOD	< LOD	164.27	37.88	< LOD	< LOD	11,788.33	235.27	< LOD	30.57
12	12/14/2006 8:07	ppm	E5NWc	922.45	< LOD	< LOD	< LOD	978.62	297.97	< LOD	< LOD	58,496.27	935.64	< LOD	54.37
15	12/14/2006 8:51	ppm	E5SWc	114.56	< LOD	< LOD	< LOD	162.85	46.29	< LOD	< LOD	10,196.38	234.09	< LOD	46.24
16	12/14/2006 9:10	ppm	E5NEc	61.49	< LOD	< LOD	< LOD	93.56	24.41	< LOD	< LOD	10,104.53	178.65	< LOD	48.6
21	12/15/2006 13:33	ppm	E5SWc-R	129.55	< LOD	< LOD	< LOD	204.01	53.15	< LOD	< LOD	11,652.77	441.02	69.88	33.55
22	12/15/2006 13:43	ppm	E5SEc-R	74.14	< LOD	< LOD	< LOD	141.47	39.25	< LOD	< LOD	10,093.42	252.52	< LOD	33.24
28	12/15/2006 14:36	ppm	E5NWc-R	846.55	< LOD	< LOD	< LOD	919.84	274.32	< LOD	< LOD	39,861.69	779.24	< LOD	76.99
47	12/16/2006 8:48	ppm	E5NEc	774.62	< LOD	< LOD	< LOD	6024.98	102.75	79.5	< LOD	44,907.22	5552.38	< LOD	77.32
52	12/16/2006 11:49	ppm	E5Cc-R	175.64	< LOD	< LOD	< LOD	334.21	117.13	< LOD	< LOD	9,911.89	281.8	89.89	42.89
24	12/17/2006 13:43	ppm	E5NEc	832.31	< LOD	< LOD	< LOD	906.96	263.08	< LOD	< LOD	42,918.70	887.48	94.26	62.2
11	4/13/2007 9:13	ppm	E5NEc-R	70.68	< LOD	< LOD	< LOD	104.58	< LOD	55.47	< LOD	11,600.52	349.51	< LOD	40.44
Grid E-6															
48	12/9/2006 9:17	ppm	E6CSc	592.57	< LOD	< LOD	< LOD	379.41	141.24	< LOD	331.71	40,467.95	567.94	< LOD	58.17
53	12/9/2006 9:37	ppm	E6CSc	356.74	< LOD	< LOD	< LOD	513.08	144.86	< LOD	< LOD	34,021.23	577.74	< LOD	79.67
12	12/15/2006 10:23	ppm	E6NWc	51.52	< LOD	< LOD	< LOD	75.09	< LOD	< LOD	< LOD	9,971.04	315.04	< LOD	48.99
35	12/15/2006 15:56	ppm	E6SEc	39.94	< LOD	< LOD	< LOD	60.15	< LOD	< LOD	< LOD	8,556.42	284.74	68.75	43.31
50	12/16/2006 10:06	ppm	E6SWc	528.15	< LOD	< LOD	< LOD	107.01	48.95	< LOD	< LOD	11,993.77	364.02	< LOD	< LOD
51	12/16/2006 10:12	ppm	E6Cc	121.35	< LOD	< LOD	< LOD	116.53	25.21	< LOD	< LOD	10,675.96	459.28	< LOD	61.96
16	12/17/2006 12:51	ppm	E6NEc	84.37	< LOD	< LOD	< LOD	115.82	28.93	< LOD	< LOD	10,443.30	457.29	< LOD	< LOD
17	12/17/2006 12:58	ppm	E6NWc	608.92	< LOD	< LOD	< LOD	1014.47	319.71	< LOD	< LOD	19,107.50	527.01	93.71	51.02
45	4/16/2007 14:10	ppm	E6SEc	43.86	< LOD	< LOD	< LOD	57.59	< LOD	< LOD	< LOD	9,197.05	272.67	< LOD	52.17
Grid E-7															
60	12/9/2006 10:43	ppm	E7Cc	53.25	< LOD	< LOD	< LOD	66.28	< LOD	< LOD	< LOD	9,888.81	339.6	< LOD	< LOD
61	12/9/2006 10:47	ppm	E7Cc	49.96	< LOD	< LOD	< LOD	67.29	< LOD	< LOD	< LOD	10,039.97	338.98	< LOD	51.79
62	12/9/2006 11:00	ppm	E7NEc	77.52	< LOD	< LOD	< LOD	103.08	26.3	< LOD	< LOD	10,492.27	510.99	< LOD	< LOD
69	12/9/2006 13:50	ppm	E7CNc	26.31	< LOD	< LOD	< LOD	53.82	33.7	< LOD	< LOD	10,856.50	302.46	< LOD	42.69
126	12/10/2006 13:48	ppm	E7CNc	24.4	< LOD	< LOD	< LOD	48.62	< LOD	< LOD	< LOD	9,584.27	278.25	< LOD	49.16

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
20	4/12/2007 14:06	ppm	E7 NWc	40.28	< LOD	< LOD	< LOD	55.97	< LOD	< LOD	< LOD	10,001.99	171.68	< LOD	36.33
22	4/12/2007 14:13	ppm	E7 Cc	22.66	< LOD	< LOD	< LOD	53.51	< LOD	< LOD	< LOD	10,372.21	536.9	< LOD	51.06
23	4/12/2007 14:16	ppm	E7 NEc	45.23	< LOD	< LOD	< LOD	46.3	24.11	< LOD	< LOD	10,498.37	325.07	< LOD	40.8
24	4/12/2007 14:19	ppm	E7 SEc	28.02	< LOD	< LOD	< LOD	38.07	< LOD	< LOD	< LOD	8,481.09	206.12	< LOD	31.59
43	4/16/2007 14:03	ppm	E7 SWc	283.6	< LOD	< LOD	< LOD	86.55	35.79	< LOD	< LOD	10,547.60	350.11	< LOD	< LOD
10	4/18/2007 8:57	ppm	E7 SEOCc	23.19	< LOD	< LOD	< LOD	43.09	< LOD	< LOD	< LOD	8,850.80	335.12	< LOD	46.64
13	4/18/2007 9:12	ppm	E7 Cc	31.45	< LOD	< LOD	< LOD	56.64	< LOD	< LOD	< LOD	9,400.06	169.36	< LOD	< LOD
34	4/25/2007 12:39	ppm	RE73-07-74835c 0-0.5	53.26	< LOD	< LOD	< LOD	64.83	< LOD	< LOD	< LOD	10,249.68	299.97	< LOD	50.63
Grid E-8															
73	12/9/2006 14:29	ppm	E8SEc	38.51	< LOD	< LOD	< LOD	65.87	< LOD	< LOD	< LOD	7,489.20	287.81	< LOD	28.42
86	12/10/2006 8:25	ppm	E8Cc	61.22	< LOD	< LOD	< LOD	92.83	24.38	< LOD	< LOD	9,685.83	387.88	< LOD	< LOD
118	12/10/2006 13:02	ppm	E8CSc	49.29	< LOD	< LOD	< LOD	71.08	< LOD	< LOD	< LOD	9,895.26	359.97	< LOD	< LOD
13	12/15/2006 10:25	ppm	E8SEc	124.17	< LOD	< LOD	< LOD	114.69	< LOD	< LOD	< LOD	11,813.49	465.38	< LOD	75.6
55	4/20/2007 8:37	ppm	E8Cc	149.32	< LOD	< LOD	< LOD	93.65	< LOD	< LOD	< LOD	9,571.18	380.32	< LOD	33.74
50	4/20/2007 8:07	ppm	E8NEc	40.51	< LOD	< LOD	< LOD	59.51	< LOD	< LOD	132.66	8,188.03	456.49	< LOD	52.02
54	4/20/2007 8:31	ppm	E8NWc	54.45	< LOD	< LOD	< LOD	78.39	22.79	< LOD	< LOD	9,231.67	317.94	< LOD	37.02
52	4/20/2007 8:16	ppm	E8SEc	40.81	< LOD	< LOD	< LOD	73.71	< LOD	< LOD	< LOD	8,210.29	352.28	< LOD	45.18
51	4/20/2007 8:12	ppm	E8SWc	75.76	< LOD	< LOD	< LOD	72.26	< LOD	< LOD	< LOD	7,958.88	289.68	< LOD	30.38
17	4/21/2007 14:25	ppm	E8Cc 12 in	34.65	< LOD	< LOD	< LOD	86.76	< LOD	< LOD	< LOD	7,495.75	321.89	< LOD	< LOD
13	4/21/2007 13:54	ppm	E8Cc 8 in	29.72	< LOD	< LOD	< LOD	77.31	< LOD	< LOD	< LOD	7,533.23	339.86	< LOD	< LOD
31	4/21/2007 15:48	ppm	E8Cc 8 in	65.49	< LOD	< LOD	< LOD	62.66	< LOD	< LOD	< LOD	11,289.10	421.43	< LOD	36.43
59	4/23/2007 9:47	ppm	E8Cb 12in	31.14	< LOD	< LOD	< LOD	61.98	< LOD	< LOD	< LOD	6,841.37	327.2	< LOD	< LOD
32	4/25/2007 11:04	ppm	RE73-07-74695c 0-0.5	36.82	< LOD	< LOD	< LOD	98.67	< LOD	< LOD	< LOD	7,679.32	347.65	< LOD	< LOD
31	4/25/2007 10:53	ppm	RE73-07-74696c 2-2-.5	35.02	< LOD	< LOD	< LOD	85.9	< LOD	< LOD	< LOD	8,661.20	372.87	< LOD	32.61
Grid F-1															
12	11/17/2006 9:30	ppm	F1Cf	69.45	< LOD	< LOD	< LOD	108.6	< LOD	< LOD	< LOD	11,905.70	232.56		
7	11/17/2006 14:01	ppm	F1Cc	42.08	< LOD	< LOD	6.65	92.3	< LOD	< LOD	< LOD	13,056.82	286.63		
31	11/18/2006 8:35	ppm	F1NWf	307.12	< LOD	28.29	< LOD	938.37	246.21	< LOD	< LOD	17,387.82	674.51		

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
35	11/21/2006 8:52	ppm	RE73-07-74679 0-1ft	25.89	< LOD	< LOD	< LOD	59.15	< LOD	< LOD	< LOD	11,879.69	252.63	< LOD	35.35
36	11/21/2006 8:57	ppm	RE73-07-74680 3-4ft	80.39	< LOD	< LOD	< LOD	101.8	< LOD	< LOD	< LOD	10,418.92	363.97	< LOD	96.28
Grid F-2															
10	11/16/2006 8:21	ppm	F2Cc	220.68	< LOD	< LOD	< LOD	621.9	108.71	< LOD	< LOD	11,521.42	386.47		
7	11/16/2006 7:36	ppm	F2Cb	191.48	< LOD	< LOD	< LOD	414.89	105.62	< LOD	< LOD	9,433.35	420.81		
24	11/15/2006 15:54	ppm	F2Cf	516.11	< LOD	36.27	< LOD	1248.54	328.67	68.06	< LOD	18,380.16	683.98		
26	11/19/2006 9:57	ppm	F2NWf	572.06	< LOD	35.32	< LOD	1421.69	371.27	79.41	< LOD	20,151.99	538.52		
27	11/19/2006 10:03	ppm	F2NEf	196.61	< LOD	23.35	< LOD	510.37	139.09	80.76	< LOD	14,653.64	488.02		
32	11/27/2006 7:48	ppm	RE73-07-74715 2-3ft	17.66	< LOD	< LOD	< LOD	59.8	< LOD	< LOD	< LOD	6,603.08	324.38	< LOD	39.41
2	12/13/2006 11:11	ppm	F2Cc	221.97	< LOD	< LOD	< LOD	407.1	82.61	< LOD	< LOD	13,144.78	439.34	75.34	106.07
3	12/13/2006 11:14	ppm	F2NWc	33.03	< LOD	< LOD	< LOD	79.16	< LOD	< LOD	< LOD	13,018.63	271.63	< LOD	37.67
4	12/13/2006 11:17	ppm	F2NEc	180.56	< LOD	< LOD	< LOD	347.41	84.37	< LOD	< LOD	13,461.38	408.6	< LOD	57.82
Grid F-3															
11	11/18/2006 13:22	ppm	F3Cf	26.13	< LOD	< LOD	8.77	78.99	< LOD	< LOD	< LOD	8,399.52	352.75		
12	11/18/2006 13:24	ppm	F3Cf	152.88	< LOD	< LOD	< LOD	324.24	63.96	< LOD	< LOD	15,109.59	478.46		
99	12/10/2006 10:43	ppm	F3CEc	194.05	< LOD	< LOD	< LOD	438.83	71.84	< LOD	< LOD	14,221.01	456.25	< LOD	105.68
100	12/10/2006 10:50	ppm	F3CNc	164.1	< LOD	< LOD	< LOD	248.28	65.2	< LOD	< LOD	16,383.99	467.54	< LOD	79.98
93	12/10/2006 9:29	ppm	F3CWc	33.55	< LOD	< LOD	< LOD	75.58	< LOD	< LOD	< LOD	8,109.45	284.49	< LOD	28.87
26	12/15/2006 14:12	ppm	F3Cc	776.7	< LOD	< LOD	< LOD	1428.77	338.32	< LOD	< LOD	19,484.80	958.62	138.69	163.21
30	12/15/2006 14:50	ppm	F3NWc	136.84	< LOD	< LOD	< LOD	237.33	55.62	< LOD	< LOD	9,719.85	308.19	< LOD	46.81
34	12/15/2006 15:33	ppm	F3Nc-R	205.28	< LOD	< LOD	< LOD	259.91	67.59	< LOD	< LOD	17,685.40	501.15	< LOD	73.5
45	12/16/2006 8:31	ppm	F3Cc-R	620.19	< LOD	< LOD	< LOD	1088.34	251.19	< LOD	< LOD	18,665.24	757.73	132.9	171.22
19	12/12/2006 15:12	ppm	RE73-07-74762 0-1ft	41.65	< LOD	< LOD	< LOD	72.05	< LOD	< LOD	< LOD	11,105.36	282.58	< LOD	57.31
20	12/12/2006 15:20	ppm	RE73-07-74763 2-3.5ft	34.91	< LOD	< LOD	< LOD	68.35	< LOD	< LOD	< LOD	8,024.25	231.77	< LOD	< LOD
Grid F-4															
21	11/15/2006 15:39	ppm	F4Cf	318.72	< LOD	36.26	< LOD	666.44	186.46	< LOD	< LOD	56,569.01	764.07		
102	12/10/2006 11:02	ppm	F4CWc	108.8	< LOD	< LOD	< LOD	162.6	39.07	< LOD	< LOD	11,712.56	368.61	< LOD	51.89
105	12/10/2006 11:25	ppm	F4CEc	267.89	< LOD	< LOD	< LOD	422.7	72.61	< LOD	< LOD	17,362.34	352.58	< LOD	74.65

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
107	12/10/2006 11:40	ppm	F4CSc	388.35	< LOD	< LOD	< LOD	414.16	95.9	< LOD	262.3	24,186.96	594.05	< LOD	92.87
27	12/15/2006 14:26	ppm	F4Cc	61.99	< LOD	< LOD	< LOD	108.39	< LOD	< LOD	< LOD	11,374.83	296.78	< LOD	60.03
29	12/15/2006 14:44	ppm	F4SWc	60.88	< LOD	< LOD	< LOD	99.26	25.85	< LOD	< LOD	8,497.99	209.53	< LOD	35.46
32	12/15/2006 15:06	ppm	F4SEc	144.43	< LOD	< LOD	< LOD	202.57	< LOD	< LOD	< LOD	15,944.89	358.48	< LOD	43.46
33	12/15/2006 15:28	ppm	F4NWc	56.64	< LOD	< LOD	< LOD	144.04	51.91	< LOD	< LOD	9,449.81	216.72	< LOD	44.17
36	12/15/2006 16:06	ppm	F4NEc	857.06	< LOD	< LOD	< LOD	376.84	117.94	< LOD	< LOD	51,894.52	786.44	< LOD	77.51
14	4/10/2007 14:45	ppm	F4 NE c	63.05	< LOD	< LOD	< LOD	116.79	< LOD	< LOD	< LOD	11,003.20	257.39	< LOD	< LOD
15	4/10/2007 14:49	ppm	F4 NW c	84.23	< LOD	< LOD	< LOD	120.07	41.05	< LOD	< LOD	9,969.87	198.75	< LOD	52.86
16	4/10/2007 14:52	ppm	F4 SW c	41.73	< LOD	< LOD	< LOD	74.44	< LOD	< LOD	< LOD	8,531.17	338	< LOD	43.99
17	4/10/2007 14:56	ppm	F4 C c	81.54	< LOD	< LOD	< LOD	129.83	25.48	< LOD	< LOD	9,390.91	255.06	< LOD	44.7
18	4/10/2007 14:59	ppm	F4 SE c	130.93	< LOD	< LOD	< LOD	125.93	< LOD	< LOD	< LOD	12,300.22	247.25	< LOD	43.22
22	4/20/2007 16:09	ppm	F4 Cc	101.68	< LOD	< LOD	< LOD	132.92	26.52	< LOD	< LOD	13,326.42	340.14	< LOD	53.37
19	4/20/2007 15:57	ppm	F4 NEc	207.84	< LOD	< LOD	< LOD	140.7	44.11	< LOD	< LOD	13,706.39	399.5	< LOD	53.6
17	4/20/2007 15:47	ppm	F4 NWc	42.2	< LOD	< LOD	< LOD	69.97	< LOD	< LOD	< LOD	9,689.98	198.99	< LOD	< LOD
16	4/20/2007 15:41	ppm	F4 SEc	177.89	< LOD	< LOD	< LOD	220.07	65.62	< LOD	< LOD	15,283.32	332.5	< LOD	45.87
18	4/20/2007 15:51	ppm	F4 SWc	63.76	< LOD	< LOD	< LOD	96.74	32.7	< LOD	< LOD	9,907.86	230.98	< LOD	43.26
11	4/21/2007 13:41	ppm	F4 C 12 in c	35.52	< LOD	< LOD	< LOD	74.85	< LOD	< LOD	< LOD	10,014.14	307.08	< LOD	30.9
35	4/21/2007 16:09	ppm	F4Cb 12 in	41.49	< LOD	< LOD	< LOD	88.12	23.33	< LOD	< LOD	11,966.54	341.97	< LOD	44.44
18	4/21/2007 14:31	ppm	F4Cb 18 in	28.15	< LOD	< LOD	< LOD	57.3	< LOD	< LOD	< LOD	7,327.66	252.54	< LOD	< LOD
19	4/21/2007 14:34	ppm	F4Cb 18 in-1	< LOD	< LOD	< LOD	< LOD	105.95	< LOD	< LOD	< LOD	8,978.85	< LOD		
20	4/21/2007 14:36	ppm	F4Cb 18 in-1	31.17	< LOD	< LOD	< LOD	61.38	< LOD	< LOD	< LOD	9,443.82	318.86	< LOD	< LOD
21	4/21/2007 14:36	ppm	F4Cb 18 in-1	28.62	< LOD	< LOD	< LOD	64.35	< LOD	< LOD	< LOD	8,986.23	312.65		
12	4/21/2007 13:51	ppm	F4Cc 18 in	42.05	< LOD	< LOD	< LOD	65.16	< LOD	< LOD	< LOD	8,527.75	238.58	< LOD	48.15
35	4/24/2007 14:36	ppm	F4 0-.5 c	21.83	< LOD	< LOD	< LOD	67.03	< LOD	< LOD	< LOD	7,679.27	228.39	< LOD	49.47
33	4/24/2007 14:09	ppm	F4 2-2.5 c	31.63	< LOD	< LOD	< LOD	68.27	< LOD	< LOD	< LOD	8,294.66	283.05	< LOD	31.16
34	4/24/2007 14:15	ppm	F4 Test	23.25	< LOD	< LOD	< LOD	55.61	< LOD	< LOD	< LOD	7,775.36	233.89	< LOD	< LOD
Grid F-5															
110	12/10/2006 12:17	ppm	F5CWc	119.95	< LOD	< LOD	< LOD	118.34	< LOD	< LOD	< LOD	14,498.21	536.5	< LOD	55.13

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
123	12/10/2006 13:34	ppm	F5CSc	1276.65	< LOD	< LOD	< LOD	1975.75	520.67	< LOD	< LOD	43,874.34	1131.71	151.32	166.42
37	12/15/2006 16:20	ppm	F5CSc-R	28.56	< LOD	< LOD	< LOD	67.83	< LOD	< LOD	< LOD	7,690.97	275.45	< LOD	37.8
41	12/16/2006 7:59	ppm	F5NWc	222.49	< LOD	< LOD	< LOD	258.62	89.49	< LOD	< LOD	13,707.76	752.31	< LOD	59.86
42	12/16/2006 8:03	ppm	F5NEc	1216.87	< LOD	< LOD	< LOD	1122.93	306.84	< LOD	< LOD	66,404.45	1247.09	< LOD	115.47
43	12/16/2006 8:08	ppm	F5SEc	315.28	< LOD	< LOD	7.68	248.2	88.11	< LOD	< LOD	20,502.27	551.91	< LOD	42.01
44	12/16/2006 8:23	ppm	F5SWc	481.76	< LOD	< LOD	< LOD	740.9	289.51	< LOD	< LOD	19,663.21	614.25	95.24	65.47
46	12/16/2006 8:42	ppm	F5Cc	741.19	< LOD	< LOD	< LOD	976.2	334.57	70.98	< LOD	25,677.43	671.97	92.58	< LOD
19	12/17/2006 13:10	ppm	F5Cc-R	418.32	< LOD	< LOD	< LOD	412.87	116.34	< LOD	< LOD	18,524.19	492.55	< LOD	53.27
22	12/17/2006 13:32	ppm	F5SWc	148.02	< LOD	< LOD	< LOD	140.73	32.15	< LOD	< LOD	12,601.95	364.39	< LOD	36.08
19	4/10/2007 15:03	ppm	F5NE c	489.55	< LOD	< LOD	< LOD	159.75	27.29	< LOD	< LOD	19,879.62	469.75	< LOD	57.97
20	4/10/2007 15:06	ppm	F5SW c	76	< LOD	< LOD	< LOD	130.24	47.68	< LOD	< LOD	9,603.35	263.29	< LOD	< LOD
21	4/10/2007 15:10	ppm	F5SE c	51.14	< LOD	< LOD	< LOD	78.64	26.42	< LOD	< LOD	9,675.92	280.18	< LOD	41.41
7	4/12/2007 12:20	ppm	F5SEc	34.26	< LOD	< LOD	< LOD	47.3	< LOD	< LOD	< LOD	9,009.66	192.26	< LOD	46.38
30	4/15/2007 17:06	ppm	F5Cc-R	41	< LOD	< LOD	< LOD	73.57	< LOD	< LOD	< LOD	7,945.43	177.8	< LOD	52.68
31	4/15/2007 17:13	ppm	F5 NWc	55.92	< LOD	< LOD	< LOD	68.43	< LOD	< LOD	< LOD	9,312.14	223.44	< LOD	38.96
14	4/20/2007 15:30	ppm	F5 Cc	40.65	< LOD	12.03	< LOD	76.76	< LOD	< LOD	< LOD	9,313.86	141.7	< LOD	52.41
13	4/20/2007 15:26	ppm	F5 NEc	28.25	< LOD	< LOD	< LOD	55.73	< LOD	< LOD	< LOD	9,162.05	124.68	< LOD	< LOD
21	4/20/2007 16:05	ppm	F5 NWc	28.13	< LOD	< LOD	< LOD	53.81	24.83	< LOD	< LOD	9,466.82	259.14	< LOD	37.51
15	4/20/2007 15:35	ppm	F5 SEc	171.57	< LOD	< LOD	< LOD	118.94	32.54	< LOD	< LOD	13,478.76	329.31	< LOD	44.29
20	4/20/2007 16:01	ppm	F5 SWc	94.98	< LOD	< LOD	< LOD	78.1	< LOD	< LOD	< LOD	9,808.25	190.29	< LOD	< LOD
28	4/21/2007 15:30	ppm	F5Cb 12 in	21.84	< LOD	< LOD	< LOD	42.89	< LOD	< LOD	< LOD	7,925.47	159.39	< LOD	< LOD
26	4/21/2007 15:22	ppm	F5Cc 12 in	22.94	< LOD	< LOD	< LOD	53.63	< LOD	< LOD	< LOD	8,238.29	151.88	< LOD	< LOD
32	4/24/2007 14:02	ppm	RE73-07-74799 0-0.5	31.14	< LOD	< LOD	< LOD	47.81	< LOD	< LOD	< LOD	7,441.30	247.48	< LOD	< LOD
21	4/24/2007 11:37	ppm	F5Sc-1	42.58	< LOD	< LOD	< LOD	70.87	< LOD	< LOD	< LOD	8,797.15	193.93	< LOD	41.26
31	4/24/2007 13:53	ppm	RE73-07-74800c 2-2.5	23.27	< LOD	< LOD	< LOD	47.84	< LOD	< LOD	< LOD	6,742.63	235.73	< LOD	37.17
18	4/24/2007 11:25	ppm	F5Sc 2ft	23.1	< LOD	< LOD	< LOD	56.39	< LOD	< LOD	< LOD	6,577.56	218.63	< LOD	< LOD
19	4/24/2007 11:28	ppm	F5Sc	31.13	< LOD	< LOD	< LOD	59.19	< LOD	< LOD	< LOD	7,935.44	289.93	< LOD	30.79

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
Grid F-6															
59	12/9/2006 10:31	ppm	F6CEc	1649.99	< LOD	< LOD	< LOD	2399.44	679.09	< LOD	< LOD	61,496.64	1788.93	97.58	170.85
70	12/9/2006 13:59	ppm	F6CSc	243.03	< LOD	< LOD	< LOD	293.25	45.06	< LOD	< LOD	12,515.35	675.54	85.5	155.52
71	12/9/2006 14:10	ppm	F6Cc	117.01	< LOD	< LOD	< LOD	151.03	25.99	< LOD	< LOD	11,723.32	506.32	< LOD	58.85
15	12/17/2006 12:44	ppm	F6NEc	21.32	< LOD	< LOD	< LOD	897.48	< LOD	< LOD	< LOD	9,643.79	462.48	< LOD	43.27
18	12/17/2006 13:05	ppm	F6Cc	100.88	< LOD	< LOD	< LOD	71.59	< LOD	< LOD	< LOD	10,199.86	378.74	< LOD	84.33
20	12/17/2006 13:16	ppm	F6SEc	77.62	< LOD	< LOD	< LOD	75.59	26.37	< LOD	< LOD	11,206.14	371.07	< LOD	45.63
23	12/17/2006 13:37	ppm	F6SWc	87.79	< LOD	< LOD	< LOD	96.23	< LOD	< LOD	< LOD	10,203.97	394.25	< LOD	55.2
10	4/20/2007 15:01	ppm	F6 Cc	57.16	< LOD	< LOD	< LOD	65.52	< LOD	< LOD	< LOD	9,773.82	174.42	< LOD	40.82
8	4/20/2007 14:52	ppm	F6 NEc	28.71	< LOD	< LOD	< LOD	61.29	< LOD	< LOD	< LOD	11,487.94	152.52	< LOD	34.95
6	4/20/2007 14:42	ppm	F6 NWc	61.43	< LOD	< LOD	< LOD	74.84	33.15	< LOD	< LOD	9,805.86	242.73	< LOD	40
7	4/20/2007 14:48	ppm	F6 SEc	48.42	< LOD	< LOD	< LOD	82.66	< LOD	< LOD	< LOD	10,843.73	326.48	< LOD	56.56
9	4/20/2007 14:58	ppm	F6 SWc	30.8	< LOD	< LOD	< LOD	50.11	22.7	< LOD	< LOD	8,916.90	298.99	< LOD	43.01
15	4/21/2007 14:06	ppm	F6Cc 12 in	26.08	< LOD	< LOD	< LOD	37.66	< LOD	< LOD	< LOD	6,639.35	165.15	< LOD	< LOD
29	4/21/2007 15:40	ppm	F6SWc 8 in	40.66	< LOD	< LOD	< LOD	54.65	< LOD	< LOD	< LOD	10,792.53	335.25	< LOD	< LOD
53	4/23/2007 9:20	ppm	F6Cb 12in	23.49	< LOD	< LOD	< LOD	53.66	< LOD	< LOD	< LOD	7,205.59	97	< LOD	39.05
54	4/23/2007 9:24	ppm	F6Cb 12in	25.49	< LOD	< LOD	< LOD	44.49	< LOD	< LOD	< LOD	7,522.47	152.47	< LOD	26.62
37	4/24/2007 14:45	ppm	'RE73-07-74820c 0-0.5	17.27	< LOD	< LOD	< LOD	61.64	< LOD	< LOD	< LOD	9,093.62	< LOD	< LOD	< LOD
36	4/24/2007 14:41	ppm	RE73-07-74821c 2-2-.5	22.41	< LOD	< LOD	< LOD	43.55	< LOD	< LOD	< LOD	8,039.37	214.59	< LOD	40.6
Grid F-7															
56	12/9/2006 9:56	ppm	F7Cc	1164.03	< LOD	< LOD	< LOD	2192.49	660.05	86.38	< LOD	40,587.13	1216.03	117.05	126.21
57	12/9/2006 10:06	ppm	F7CWc	44.14	< LOD	< LOD	< LOD	65.33	< LOD	< LOD	< LOD	10,354.07	363.47	< LOD	< LOD
58	12/9/2006 10:16	ppm	F7CSc	1335.26	< LOD	< LOD	< LOD	2574.07	907.48	< LOD	< LOD	46,699.85	1392.29	124.84	149.98
8	4/18/2007 8:33	ppm	F7 Cc	43.04	< LOD	< LOD	< LOD	68.87	< LOD	< LOD	< LOD	9,130.39	169.2	< LOD	36.95
9	4/18/2007 8:40	ppm	F7 WOCc	21.74	< LOD	< LOD	< LOD	46.09	< LOD	< LOD	< LOD	8,669.82	170.87	< LOD	38.79
11	4/18/2007 9:04	ppm	F7 SOCc	37.93	< LOD	< LOD	< LOD	73.53	< LOD	< LOD	< LOD	9,840.58	395.6	< LOD	< LOD
12	4/18/2007 9:08	ppm	F7 NOCc	28.84	< LOD	< LOD	< LOD	66.65	24.42	< LOD	< LOD	9,390.68	240.55	< LOD	33.93
39	4/20/2007 7:02	ppm	F7 Ec	101.63	< LOD	< LOD	< LOD	132.38	46.42	< LOD	< LOD	10,058.11	254.47	< LOD	88.95

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
38	4/20/2007 6:59	ppm	F7 NEc	54.08	< LOD	< LOD	< LOD	90.57	23.47	< LOD	< LOD	9,310.27	147.72	< LOD	< LOD
52	4/23/2007 9:17	ppm	F7Cb 8in	11.79	< LOD	< LOD	< LOD	40.79	< LOD	< LOD	< LOD	6,551.72	136.55	< LOD	< LOD
58	4/27/2007 11:56	ppm	RE73-07-74838c 0-3in	28.85	< LOD	< LOD	< LOD	65.21	< LOD	< LOD	< LOD	7,220.76	358.27	< LOD	< LOD
Grid F-8															
75	12/9/2006 14:47	ppm	F8Cc	70.92	< LOD	< LOD	< LOD	84.55	< LOD	< LOD	< LOD	9,759.55	274.25	< LOD	36.88
89	12/10/2006 8:42	ppm	F8CEc	40.39	< LOD	< LOD	< LOD	83.41	< LOD	< LOD	< LOD	8,996.29	458.72	< LOD	< LOD
108	12/10/2006 11:47	ppm	F8SEc	45.15	< LOD	< LOD	< LOD	70.21	< LOD	< LOD	< LOD	8,847.74	371.76	< LOD	41.56
115	12/10/2006 12:45	ppm	F8CNc	53.48	< LOD	< LOD	< LOD	75.26	< LOD	< LOD	< LOD	8,826.03	600.76	< LOD	35.1
10	12/12/2006 7:31	ppm	F8Cc	60.58	< LOD	< LOD	< LOD	94.42	< LOD	< LOD	< LOD	9,733.20	661.87	< LOD	42.91
48	4/20/2007 7:52	ppm	F8 Cc	40.63	< LOD	< LOD	< LOD	74.08	< LOD	< LOD	< LOD	8,010.79	402.22	< LOD	46.44
43	4/20/2007 7:24	ppm	F8 NEc	63.86	< LOD	< LOD	< LOD	110.08	< LOD	< LOD	< LOD	8,810.45	433.91	< LOD	48.21
47	4/20/2007 7:44	ppm	F8 NWc	53.35	< LOD	< LOD	< LOD	87.68	< LOD	< LOD	< LOD	9,085.76	454.69	< LOD	< LOD
45	4/20/2007 7:36	ppm	F8 SEc	28.49	< LOD	< LOD	< LOD	88.72	< LOD	< LOD	< LOD	7,652.94	250.88	< LOD	35.92
46	4/20/2007 7:39	ppm	F8 SWc	35.99	< LOD	< LOD	< LOD	54.82	< LOD	< LOD	< LOD	7,121.45	215.9	110.6	54.3
22	4/21/2007 14:53	ppm	F8Cc 12 in	30.77	< LOD	< LOD	< LOD	68.67	< LOD	< LOD	< LOD	6,783.44	264.06	75.24	< LOD
23	4/21/2007 14:56	ppm	F8Cc 12 in-1	23.65	< LOD	< LOD	< LOD	45.69	< LOD	< LOD	< LOD	6,004.57	281.87	< LOD	< LOD
30	4/21/2007 15:44	ppm	F8Cc 6 in	27.66	< LOD	< LOD	< LOD	63.31	< LOD	< LOD	< LOD	9,629.64	188.36	< LOD	47.31
33	4/21/2007 15:57	ppm	F8CEc 24 in	38.33	< LOD	< LOD	< LOD	86.11	37.72	< LOD	< LOD	10,079.45	438.56	< LOD	50.53
32	4/21/2007 15:53	ppm	F8CEc 30 in	32.53	< LOD	< LOD	< LOD	77.1	< LOD	< LOD	< LOD	9,328.71	332.01	< LOD	47.8
58	4/23/2007 9:43	ppm	F8Cb 12in	24.61	< LOD	< LOD	< LOD	65.16	< LOD	< LOD	< LOD	5,909.36	198.8	< LOD	< LOD
55	4/23/2007 9:29	ppm	F8Cc 6in	31.55	< LOD	< LOD	< LOD	57.25	27.7	< LOD	< LOD	7,526.64	205.85	< LOD	< LOD
7	4/24/2007 16:50	ppm	RE73-07-74697c 0-.5	33.78	< LOD	< LOD	< LOD	74.34	< LOD	< LOD	< LOD	6,770.50	277.23	< LOD	34.1
8	4/24/2007 16:53	ppm	RE73-07-74698c 2-2.5	35.9	< LOD	< LOD	< LOD	72.97	< LOD	< LOD	< LOD	7,078.21	302.51	< LOD	34.59
Grid G-1															
26	11/15/2006 16:07	ppm	G1Cf	106.5	< LOD	< LOD	< LOD	256.91	51.65	< LOD	< LOD	12,194.26	362.47		
13	11/17/2006 9:32	ppm	G1Cf	43.26	< LOD	< LOD	< LOD	94.58	< LOD	< LOD	< LOD	12,644.34	239.75		
8	11/17/2006 14:04	ppm	G1Cc	82.63	< LOD	< LOD	< LOD	185.85	33.16	< LOD	< LOD	14,125.69	359.91		
16	11/17/2006 9:35	ppm	G1SWf	170.9	< LOD	< LOD	< LOD	333.45	101.72	< LOD	< LOD	18,813.55	452.09		

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
17	11/17/2006 9:42	ppm	G1SEf	69.78	< LOD	< LOD	< LOD	126.89	36.09	< LOD	< LOD	11,209.60	426.85		
18	11/17/2006 9:46	ppm	G1NEf	146.68	< LOD	< LOD	< LOD	410.87	160.92	< LOD	< LOD	15,559.16	489.12		
19	11/17/2006 9:51	ppm	G1NWf	160.37	< LOD	< LOD	< LOD	428.85	91.64	< LOD	< LOD	16,619.18	560.95		
Grid G-2															
5	11/12/2006 9:18	ppm	G2Cf	61.47	< LOD	< LOD	< LOD	114.44	23.77	51.94	< LOD	12,645.70	269.71		
18	11/13/2006 8:37	ppm	G2Cc	77.19	< LOD	< LOD	< LOD	118.84	33.97	57.55	< LOD	13,388.11	360.77		
32	11/18/2006 8:42	ppm	G2Cf	262.65	< LOD	25.51	< LOD	535.13	137.67	< LOD	< LOD	14,092.79	699.8		
15	11/18/2006 14:12	ppm	G2Cb	68.29	< LOD	10.04	< LOD	188.22	51.18	< LOD	< LOD	11,875.49	345.91		
16	11/18/2006 14:15	ppm	G2Cc	208.19	< LOD	< LOD	< LOD	391.66	112.01	< LOD	< LOD	16,616.91	439.38		
1	11/18/2006 12:47	ppm	G2SWf	182.57	< LOD	< LOD	< LOD	357.13	83.48	< LOD	< LOD	14,704.28	601.71		
2	11/18/2006 12:50	ppm	G2SEf	83.37	< LOD	< LOD	< LOD	136.77	34.71	< LOD	< LOD	12,767.54	366.45		
3	11/18/2006 12:56	ppm	G2NEf	203.64	< LOD	< LOD	< LOD	554.95	174.18	< LOD	< LOD	14,756.55	745.42		
8	11/20/2006 14:35	ppm	RE73-07-74735 0-2ft	19.8	< LOD	< LOD	< LOD	49.15	< LOD	< LOD	< LOD	12,400.86	223.78	< LOD	< LOD
9	11/20/2006 14:39	ppm	RE73-07-74736 2.5-3.75ft	25.4	< LOD	< LOD	< LOD	53.33	< LOD	< LOD	< LOD	8,351.19	300.55	< LOD	< LOD
10	11/20/2006 14:42	ppm	RE73-07-74737 4-5ft	29.82	< LOD	< LOD	< LOD	46.64	< LOD	< LOD	< LOD	6,423.10	298.5	< LOD	35.6
Grid G-3															
16	11/11/2006 9:41	ppm	G3WCc	234.56	< LOD	< LOD	< LOD	538.29	111.89	< LOD	< LOD	13,898.98	430.49		
21	11/11/2006 9:59	ppm	G3SWc	361.18	< LOD	< LOD	< LOD	707.74	138.81	< LOD	< LOD	14,947.87	492.63		
22	11/11/2006 10:02	ppm	G3SEc	287.58	< LOD	< LOD	< LOD	548.77	125.28	< LOD	< LOD	13,365.05	540.32		
33	11/18/2006 8:58	ppm	G3SWf	157.37	< LOD	< LOD	< LOD	334.52	71.79	< LOD	< LOD	23,334.63	433.6		
4	11/18/2006 13:00	ppm	G3Cf	81.43	< LOD	21.73	< LOD	255.24	77.18	< LOD	< LOD	12,298.87	489.86		
7	11/18/2006 13:06	ppm	G3NWf	235.39	< LOD	< LOD	< LOD	339.65	99.74	< LOD	< LOD	24,239.21	620.75		
18	11/18/2006 14:29	ppm	G3Cb	42.32	< LOD	< LOD	< LOD	116.86	< LOD	< LOD	< LOD	8,570.28	260.89		
20	11/18/2006 14:35	ppm	G3Cc	42.85	< LOD	< LOD	< LOD	110.57	< LOD	< LOD	< LOD	9,029.38	244.93		
Grid G-4															
6	11/11/2006 8:45	ppm	G4CWc	227.26	< LOD	< LOD	< LOD	391.84	87.71	< LOD	< LOD	16,617.54	433.73		
10	11/11/2006 9:18	ppm	G4SEc	51.44	< LOD	< LOD	< LOD	97.4	28.59	< LOD	< LOD	12,662.21	379.82		
23	11/11/2006 10:05	ppm	G4SWc	133.94	< LOD	< LOD	< LOD	181.54	37.4	< LOD	< LOD	14,228.49	341.62		

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
22	11/15/2006 15:42	ppm	G4CWf	556.62	< LOD	38.67	< LOD	1005.94	232.8	88.15	< LOD	40,045.07	670.18		
23	11/15/2006 15:48	ppm	G4Cf	192.39	< LOD	< LOD	< LOD	415.64	99.69	< LOD	< LOD	12,903.42	476.41		
4	11/16/2006 7:30	ppm	G4CWb	227.1	< LOD	18.46	< LOD	222.32	35	< LOD	< LOD	28,953.03	366.93		
11	11/16/2006 8:24	ppm	G4CWc-R	164.96	< LOD	< LOD	< LOD	197.74	43.3	< LOD	< LOD	16,376.67	381.23		
8	11/18/2006 13:09	ppm	G4NEf	146.33	< LOD	< LOD	< LOD	332.01	91.67	< LOD	< LOD	9,634.14	695.83		
9	11/18/2006 13:11	ppm	G4Cf	207.36	< LOD	< LOD	< LOD	534.88	135.08	< LOD	< LOD	13,754.64	596.12		
10	11/18/2006 13:16	ppm	G4NEf	156.55	< LOD	< LOD	< LOD	284.55	77.37	< LOD	< LOD	11,212.54	562.07		
19	11/18/2006 14:32	ppm	G4Cb	148.12	< LOD	< LOD	< LOD	328.44	74.57	< LOD	< LOD	11,300.78	435.93		
21	11/18/2006 15:06	ppm	G4Cc	146.12	< LOD	< LOD	< LOD	267.81	70.5	< LOD	< LOD	13,381.58	470.96		
14	11/20/2006 15:07	ppm	RE73-07-74685 0-1.25ft	39.9	< LOD	< LOD	< LOD	72.45	< LOD	< LOD	< LOD	9,247.17	175.71	< LOD	< LOD
15	11/20/2006 15:15	ppm	RE73-07-74686 1.25-2ft	26.67	< LOD	< LOD	< LOD	55.37	< LOD	< LOD	< LOD	9,902.62	149.99	< LOD	< LOD
16	11/20/2006 15:18	ppm	RE73-07-74717 3-4.5ft	20.99	< LOD	< LOD	< LOD	53.85	< LOD	< LOD	< LOD	9,352.05	212.09	< LOD	33.52
Grid G-5															
6	11/12/2006 9:32	ppm	G5SWf	375.22	< LOD	< LOD	< LOD	317.85	76.79	< LOD	< LOD	36,219.02	788.14		
19	11/13/2006 8:40	ppm	G5SWc	561.05	< LOD	< LOD	< LOD	478.89	144.69	< LOD	< LOD	70,602.80	934.18		
7	11/13/2006 7:32	ppm	G5Cc	154.51	< LOD	< LOD	< LOD	202.08	46.59	< LOD	< LOD	14,802.54	403.43		
17	11/13/2006 8:35	ppm	G5NWc	39.28	< LOD	< LOD	< LOD	59.77	< LOD	< LOD	< LOD	8,106.40	267.71		
117	12/10/2006 12:56	ppm	G5Cc	226.37	< LOD	< LOD	< LOD	492.33	83.34	< LOD	< LOD	14,889.28	451.38	< LOD	51.39
124	12/10/2006 13:37	ppm	G5NWc	2830.88	< LOD	146.51	< LOD	1318.9	309.88	< LOD	< LOD	398,101.63	3995.73	< LOD	155.22
127	12/10/2006 13:54	ppm	G5CSc	177.9	< LOD	< LOD	< LOD	289.35	138.97	< LOD	< LOD	16,651.54	458.22	< LOD	55.48
53	12/16/2006 12:18	ppm	G5NEc	95.19	< LOD	< LOD	< LOD	157.14	24.83	< LOD	< LOD	13,083.49	471.47	< LOD	75.74
54	12/16/2006 12:25	ppm	G5Cc	156.35	< LOD	< LOD	< LOD	229.05	89.34	< LOD	< LOD	15,213.58	464.19	< LOD	56.01
55	12/16/2006 12:33	ppm	G5SEc	92.78	< LOD	< LOD	< LOD	183.31	45.57	< LOD	< LOD	12,112.23	425.91	< LOD	72.02
56	12/16/2006 12:41	ppm	G5SWc	656.83	< LOD	< LOD	< LOD	375.12	149.52	< LOD	< LOD	37,602.50	706.77	< LOD	72.31
29	4/15/2007 17:02	ppm	G5 SEc	81.76	< LOD	< LOD	< LOD	129.58	< LOD	< LOD	< LOD	11,281.58	305.78	< LOD	37.81
26	4/15/2007 16:37	ppm	G5 SWc	87.83	< LOD	< LOD	< LOD	81.01	< LOD	< LOD	< LOD	10,730.63	318.02	< LOD	49.98
61	4/20/2007 9:33	ppm	G5 Cc	72.58	< LOD	< LOD	< LOD	119.27	44.39	< LOD	< LOD	11,637.01	280.77	< LOD	52.5
59	4/20/2007 9:24	ppm	G5 NEc	31.98	< LOD	< LOD	< LOD	72.1	24.34	< LOD	< LOD	11,946.80	369.51	< LOD	60.83

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
58	4/20/2007 9:12	ppm	G5 NWc	25.31	< LOD	< LOD	< LOD	61.03	< LOD	< LOD	< LOD	8,610.32	179.74	79.86	39.19
60	4/20/2007 9:29	ppm	G5 SEc	129.54	< LOD	< LOD	< LOD	247.56	42.26	< LOD	< LOD	13,123.36	425.76	< LOD	78.44
57	4/20/2007 8:47	ppm	G5 SWc	94.55	< LOD	< LOD	< LOD	92.43	43.91	< LOD	< LOD	10,861.97	327.4	< LOD	53.51
39	4/24/2007 14:54	ppm	RE73-07-74802c 0-0.5	45.37	< LOD	< LOD	< LOD	79.71	< LOD	< LOD	< LOD	8,025.64	293.57	< LOD	< LOD
38	4/24/2007 14:50	ppm	RE73-07-74803 1-1.5c	35.4	< LOD	< LOD	< LOD	76.73	< LOD	< LOD	< LOD	7,132.83	219.3	< LOD	29.93
Grid G-6															
20	11/13/2006 8:57	ppm	G6NEc	30.46	< LOD	< LOD	< LOD	74.42	< LOD	< LOD	< LOD	8,964.16	328.24		
21	11/13/2006 8:59	ppm	G6SEc	143.61	< LOD	< LOD	< LOD	95.08	19.57	< LOD	< LOD	19,056.42	636.78		
64	12/9/2006 12:20	ppm	G6NWc	165.65	< LOD	< LOD	< LOD	210.68	59.84	< LOD	< LOD	22,128.69	404.85	< LOD	110.45
65	12/9/2006 13:06	ppm	G6CWc	227.61	< LOD	< LOD	< LOD	138.57	41.82	< LOD	< LOD	16,897.61	380.63	< LOD	44.57
66	12/9/2006 13:20	ppm	G6Cc	167.19	< LOD	< LOD	< LOD	287.87	58.94	< LOD	< LOD	14,521.33	441.58	< LOD	51.88
30	4/19/2007 14:43	ppm	G6 Cc	43.79	< LOD	< LOD	< LOD	75.49	< LOD	< LOD	< LOD	11,189.02	179.6	< LOD	45.75
28	4/19/2007 14:34	ppm	G6 NEc	41.84	< LOD	< LOD	< LOD	76.02	< LOD	< LOD	< LOD	12,692.18	286.76	< LOD	83.27
26	4/19/2007 14:27	ppm	G6 NWc	32.38	< LOD	< LOD	< LOD	188.4	< LOD	< LOD	< LOD	8,949.93	307.15	< LOD	40.95
29	4/19/2007 14:40	ppm	G6 SEc	23.38	< LOD	< LOD	< LOD	40.82	< LOD	< LOD	< LOD	11,517.82	217.87	< LOD	51.49
27	4/19/2007 14:30	ppm	G6 SWc	77.79	< LOD	< LOD	< LOD	86.5	< LOD	< LOD	< LOD	10,006.29	236.12	< LOD	46.1
41	4/24/2007 15:14	ppm	RE73-07-74823c 0-0.5	19	< LOD	< LOD	< LOD	68.08	< LOD	< LOD	< LOD	7,580.99	279.88	< LOD	< LOD
40	4/24/2007 15:09	ppm	RE73-07-74824c 2-2.5	28.71	< LOD	< LOD	< LOD	68.86	< LOD	< LOD	< LOD	8,204.86	209.16	< LOD	54.86
Grid G-7															
8	11/13/2006 7:38	ppm	G7SWc	129.61	< LOD	< LOD	< LOD	174.46	28.9	< LOD	< LOD	13,868.27	601.87		
67	12/9/2006 13:27	ppm	G7CEc	60.36	< LOD	< LOD	< LOD	91.7	< LOD	< LOD	< LOD	11,124.34	316.54	< LOD	59.4
72	12/9/2006 14:24	ppm	G7CWc	40.18	< LOD	< LOD	< LOD	97.12	< LOD	< LOD	< LOD	10,388.36	286.76	< LOD	38.23
74	12/9/2006 14:38	ppm	G7Cc	118.91	< LOD	< LOD	< LOD	144.43	52.24	< LOD	< LOD	12,743.69	275.68	< LOD	42.85
23	4/19/2007 14:14	ppm	G7 Cc	51.19	< LOD	< LOD	< LOD	99.19	< LOD	< LOD	< LOD	12,570.29	205.4	< LOD	47.68
31	4/19/2007 15:07	ppm	G7 NEc	81.86	< LOD	< LOD	< LOD	103.79	< LOD	< LOD	< LOD	18,355.30	370.83	90.37	< LOD
21	4/19/2007 14:07	ppm	G7 NWc	24.38	< LOD	< LOD	< LOD	46.19	< LOD	< LOD	< LOD	10,734.38	201.5	< LOD	48.63
22	4/19/2007 14:11	ppm	G7 SEc	32.04	< LOD	< LOD	< LOD	65.26	29.36	< LOD	< LOD	13,179.86	154.76	< LOD	72.35
24	4/19/2007 14:20	ppm	G7 SWc	35.14	< LOD	< LOD	< LOD	67.45	< LOD	< LOD	< LOD	8,849.67	157.25	< LOD	45.91

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
9	4/24/2007 16:56	ppm	'RE73-07-74699c 0-0.5	24.19	< LOD	< LOD	< LOD	72.52	< LOD	< LOD	< LOD	7,562.90	341.19	< LOD	42.92
10	4/24/2007 17:02	ppm	RE73-07-74700c 1.5-2	28.22	< LOD	< LOD	< LOD	53.52	< LOD	< LOD	< LOD	7,166.89	352.38	< LOD	< LOD
Grid G-8															
32	4/19/2007 15:13	ppm	G8 Cc	75.21	< LOD	< LOD	< LOD	137.98	43.74	< LOD	< LOD	12,629.18	306.98	< LOD	48.3
41	4/20/2007 7:10	ppm	G8 SCc	305.89	< LOD	< LOD	< LOD	224.94	59.86	< LOD	< LOD	20,439.89	499.64	< LOD	67.88
40	4/20/2007 7:07	ppm	G8 SEc	71.77	< LOD	< LOD	< LOD	146.2	< LOD	< LOD	< LOD	11,756.56	274.07	< LOD	54.76
39	4/21/2007 16:42	ppm	G8Cc 12 in	104.97	< LOD	< LOD	< LOD	155.19	33.27	< LOD	< LOD	13,589.77	610.95	< LOD	51.72
40	4/21/2007 16:46	ppm	G8Cc 16 in	44.3	< LOD	< LOD	< LOD	68.4	< LOD	< LOD	< LOD	9,425.78	378.37	< LOD	< LOD
57	4/23/2007 9:37	ppm	G8Cb 12in	66.43	< LOD	< LOD	< LOD	285.22	38.62	< LOD	< LOD	9,961.39	316.03	< LOD	32.47
56	4/23/2007 9:33	ppm	G8Cb 16in	38.14	< LOD	< LOD	< LOD	72.59	< LOD	< LOD	< LOD	8,117.89	441.64	< LOD	38.33
38	4/25/2007 13:50	ppm	G8c 0-.5	40.79	< LOD	< LOD	< LOD	67.54	< LOD	< LOD	< LOD	9,570.19	355.08	< LOD	35.99
36	4/25/2007 13:25	ppm	G8c 3.5-4	39.79	< LOD	< LOD	< LOD	89.91	< LOD	< LOD	< LOD	8,444.32	367.2	< LOD	< LOD
37	4/25/2007 13:35	ppm	G8c 5.5-6	53.29	< LOD	< LOD	< LOD	71.17	< LOD	< LOD	< LOD	7,675.16	256.41	< LOD	46.18
36	4/21/2007 16:17	ppm	G8 Boundry 12 in	62.14	< LOD	< LOD	< LOD	71.81	< LOD	< LOD	< LOD	11,090.14	354.46	< LOD	33.2
38	4/21/2007 16:25	ppm	G8 Boundry 24 in	48.6	< LOD	< LOD	< LOD	73.68	< LOD	< LOD	< LOD	9,322.65	375.2	< LOD	38.55
37	4/21/2007 16:22	ppm	G8 Boundry 34 in	38.02	< LOD	< LOD	< LOD	68.21	< LOD	< LOD	< LOD	8,888.61	320.48	< LOD	31.59
Grid Z-5															
5	11/14/2006 11:28	ppm	Z5Cb	25.61	< LOD	< LOD	< LOD	113.17	< LOD	< LOD	< LOD	8,699.06	394.47		
15	11/15/2006 8:03	ppm	Z5Cc	39.32	< LOD	< LOD	< LOD	112.1	24.04	< LOD	< LOD	10,725.09	417.98		
4	11/14/2006 11:25	ppm	Z5SWb	21.54	< LOD	< LOD	< LOD	55.38	< LOD	< LOD	< LOD	7,432.73	275.44		
16	11/15/2006 8:06	ppm	Z5SWc	24.76	< LOD	< LOD	< LOD	52.2	< LOD	< LOD	< LOD	8,254.79	308.2		
6	11/14/2006 11:31	ppm	Z5NEb	80.01	< LOD	< LOD	< LOD	81.11	19.56	< LOD	< LOD	10,148.85	334.27		
17	11/15/2006 8:10	ppm	Z5NEc	95.71	< LOD	< LOD	< LOD	89.95	< LOD	< LOD	< LOD	13,752.82	401.95		
21	11/29/2006 13:54	ppm	RE73-07-74738 1-2ft	20.1	< LOD	< LOD	< LOD	50.27	< LOD	< LOD	< LOD	8,199.07	238.63	< LOD	< LOD
18	12/14/2006 9:35	ppm	RE73-07-74739 0-1ft	51.27	< LOD	< LOD	< LOD	75.03	< LOD	< LOD	< LOD	11,678.11	542.6	< LOD	65.87
Grid Z-6															
11	11/14/2006 11:43	ppm	Z6Cb	51.6	< LOD	< LOD	< LOD	59.19	< LOD	< LOD	< LOD	9,924.75	299.5		
18	11/15/2006 8:13	ppm	Z6Cc	41.85	< LOD	< LOD	< LOD	46.38	< LOD	< LOD	< LOD	9,918.11	369.16		

Table H-1 (continued)

Reading No	Time	Units	Sample	Lead	Selenium	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Vanadium
SSL Residential/BV				**400**	**391**	**8.17 (BV)**	**23**	**23500**	**45400**	**1560**	**1520**	**23,500**	**3590**	**100000**	**78.2**
9	11/14/2006 11:36	ppm	Z6NEb	71.91	< LOD	< LOD	< LOD	112.18	< LOD	< LOD	< LOD	12,629.73	374.57		
19	11/15/2006 8:16	ppm	Z6NEc	71.49	< LOD	< LOD	< LOD	72.69	26.63	< LOD	< LOD	15,695.62	438.75		
10	11/14/2006 11:39	ppm	Z6NWb	20.58	< LOD	< LOD	< LOD	64.94	< LOD	< LOD	< LOD	6,318.65	357.44		
20	11/15/2006 8:19	ppm	Z6NWc	22.81	< LOD	< LOD	< LOD	40.75	< LOD	< LOD	< LOD	6,548.92	369.76		
12	11/20/2006 14:49	ppm	RE73-07-74741 0-2ft	21.63	< LOD	< LOD	< LOD	61.58	< LOD	< LOD	< LOD	7,410.74	255.58	< LOD	41.75
13	11/20/2006 14:59	ppm	RE73-07-74742 2-3ft	16.43	< LOD	< LOD	< LOD	52.13	< LOD	< LOD	< LOD	6,730.15	276.42	< LOD	27.65
Grid Z-7															
7	12/13/2006 12:35	ppm	Z7SEc	146.53	< LOD	< LOD	< LOD	91.53	30.88	< LOD	< LOD	16,145.40	393.9	< LOD	43.57
10	12/13/2006 13:25	ppm	Z7NEc	86.97	< LOD	< LOD	< LOD	93.19	31.7	< LOD	< LOD	12,453.84	508.41	< LOD	57.58
12	12/13/2006 13:41	ppm	Z7NWc	61.01	< LOD	< LOD	< LOD	64.14	24.57	< LOD	< LOD	11,045.24	389.93	< LOD	65.72
Grid Z-8															
32	4/26/2007 16:16	ppm	Z8 c 0-.5	27.58	< LOD	< LOD	< LOD	54.31	< LOD	< LOD	< LOD	10,172.52	193.4	< LOD	58.88
30	4/26/2007 15:49	ppm	Z8c 2-2.5	34.97	< LOD	12.02	< LOD	91.45	< LOD	< LOD	< LOD	8,472.59	332.08	< LOD	28.6

Notes

BV	Background value.
<LOD	Less than level of detection.
375.22	Yellow shading indicates XRF result within 15% of Residential SSL/BV.
561.05	Red shading indicates XRF result greater than Residential SSL/BV.
A2Cf	Sample nomenclature: 'A2' Grid A2, 'C' center of grid, 'f' XRF reading in field.
A2Cb	Sample nomenclature: 'A2' Grid A2, 'C' center of grid, 'b' XRF reading from bag.
A3CEc	Sample nomenclature: 'A3' Grid A3, 'CE' east of center of grid, 'c' XRF reading from mylar cup.
A3CEc-R	Sample nomenclature: 'A3' Grid A3, 'CE' east of center of grid, 'c' XRF reading from mylar cup, '-R' resample after excavation.

Table H-2
Headspace Screening Results for SWMU 73-003

Sample ID	Location ID	Date	Top Depth (ft)	Bottom Depth (ft)	Soil Class	VOC Screening	Comment
RE73-07-74530	73-27233	11/20/2006	3.0	4.0	Fill	0.5 ppm	2 feet below road base/asphalt
RE73-07-74531	73-27233	11/20/2006	4.0	5.0	QBT3	0.2 ppm	Interface
RE73-07-74563	73-27233	11/20/2006	6.0	7.0	QBT3	0.0 ppm	2-ft below interface
RE73-07-74532	73-27234	11/20/2006	2.0	3.0	Fill	0.0 ppm	2 feet below road base/asphalt
RE73-07-74533	73-27234	11/20/2006	4.0	5.0	QBT3	0.1 ppm	Interface
RE73-07-74564	73-27234	11/20/2006	6.0	7.0	QBT3	0.0 ppm	2-ft below interface

Table H-3
Potential Asbestos Containing Materials - Bulk Sampling, Los Alamos Ash Pile Removal

Sample ID	Date Submitted	Description	Asbestos Type	Percent Asbestos	Other Fibers	Percent Content	Matrix
FS-06-364-1012-1	10/12/06	Gray Transite	Chrysotile	15	Plant	10–30	Calcite Clay, Opaques
	10/12/06	Gray Tile	NAD[a]	—[b]	None	—	Opaques
	10/12/06	Brown Ash	Chrysotile	0.50	Plant	5-10	Sand, Opaques
FS-06-364-1012-2	10/12/06	Black Ash	Chrysotile	0.50	None	—	Clay, Sand, Opaques
FS-06-364-1012-3	10/12/06	Black Ash	NAD	—	None	—	Clay, Sand, Opaques
FS-06-364-1012-4	10/12/06	Brown Ash	NAD	—	None	—	Sand, Opaques
FS-06-364-1012-5	10/12/06	Gray Transite	Chrysotile	15	None	—	Calcite Clay, Opaques
	10/12/06	Tan Pottery Shard	NAD	—	None	—	Sand, Opaques
	10/12/06	Brown Ash	NAD	—	Plant	5–10	Sand, Opaques
FS-06-364-1012-6	10/12/06	Black Ash	NAD	—	None	—	Clay, Sand, Opaques
FS-06-364-1012-7	10/12/06	Gray Transite	Chrysotile	20	None	—	Calcite Clay, Opaques
	10/12/06	Brown Ash	NAD	—	None	—	Sand, Opaques
FS-06-364-1012-8	10/12/06	Brown Ash	NAD	—	None	—	Sand, Opaques
FS-06-364-1012-9	10/12/06	Gray Transite	Chrysotile	25	None	—	Clay
FS-06-364-1012-10	10/12/06	Black Ash	NAD	—	None	—	Clay, Sand, Opaques
FS-06-364-1012-11	10/12/06	White Debris	NAD	—	None	—	Clay, Opaques
FS-06-364-1012-12	10/12/06	Black Ash	NAD	—	None	—	Clay, Sand, Opaques
FS-06-364-1012-13	10/12/06	Brown Ash	NAD	—	Plant	5–10	Sand, Opaques
FS-06-364-1012-14	10/12/06	Black Tile	NAD	—	None	—	Clay, Opaques
	10/12/06	Brown Insulation	Chrysotile	25	Talc	10–30	Clay
FS-06-364-1012-15	10/12/06	Brown Ash	NAD	—	Plant	5–10	Sand, Opaques
FS-06-364-1012-16	10/12/06	Tan Insulation	Chrysotile	25	None	—	Calcite Clay
	10/12/06	Gray Tile	NAD	—	None	—	Opaques
	10/12/06	Yellow Debris	NAD	—	None	—	Opaques, Sand
	10/12/06	Brown Ash	NAD	—	Plant	1–5	Sand, Opaques
FS-06-364-1012-17	10/12/06	Black Ash	NAD	—	None	—	Clay, Sand, Opaques

[a] NAD = No asbestos detected.
[b] — = Not applicable.

Table H-4
Perimeter Samples - Airborne Fiber Analysis

Sample ID	Location	Lab Number	Date Collected	Volume (L)	Fibers	Fields	LOD F/cc	95% UCL	Fibers/ cc
A102006-01	West perimeter	na[a]	10/20/06	876.0	4.0	100	<0.0022	na	0.0022
A102006-02	East perimeter	na	10/20/06	876.0	4.5	100	<0.0022	na	0.0022
LA102006-03	Blank	na	10/20/06	0.0	2.0	100	n/a[b]	n/a	n/a
LA102106-01	Skyline	na	10/21/06	867	5.0	100	0.0022	na	0.0022
A102106-02	East perimeter	na	10/21/06	864	3.0	100	<0.0022	na	0.0022
A102106-03	West perimeter	na	10/21/06	857	4.0	100	<0.0022	na	0.0022
LA102106-04	Spyder	na	10/21/06	781	12.0	100	0.0068	na	0.0024
LA102106-05	Blank	na	10/21/06	0.0	0.0	100	n/a	n/a	n/a
LA102306-01	Spyder	na	10/23/06	852	9.0	100	0.0045	na	0.0022
LA102306-02	East perimeter	na	10/23/06	839	3.5	100	<0.0023	na	0.0023
LA102306-03	West perimeter	na	10/23/06	836	5.0	100	0.0023	na	0.0023
LA102306-04	Uphill area	na	10/23/06	831	3.0	100	<0.0023	na	0.0023
LA102406-01	Spyder excavator operator	10572672	10/24/06	937.0	7.0	100	0.003	0.009	<0.003
LA102406-02	West perimeter	10572673	10/24/06	936.0	9.0	100	0.003	0.011	<0.004
LA102406-03	East perimeter	10572674	10/24/06	926.0	2.5	100	0.003	0.009	<0.003
LA102406-04	Uphill work zone	10572675	10/24/06	926.0	14.0	100	0.003	0.017	0.006
LA102506-01	West perimeter	10572676	10/25/06	913.0	5.0	100	0.003	0.009	<0.003
LA102506-02	East perimeter	10572677	10/25/06	856.0	8.0	100	0.003	0.010	0.003
LA102506-03	Uphill work zone	10572678	10/25/06	849.0	10.5	100	0.003	0.014	0.005
LA102506-04	Blank[c]	10572679	10/25/06	0.0	0.0	100	n/a	n/a	n/a
LA102506-05	Blank[c]	10572680	10/25/06	0.0	3.5	100	n/a	n/a	n/a
LA102606-01	West perimeter	10573914	10/28/06	911.0	5.0	100	0.003	0.009	<0.003
LA102606-02	East perimeter	10573915	10/28/06	911.0	8.0	100	0.003	0.012	0.004
LA102606-03	Uphill work zone	10573916	10/28/06	895.0	3.0	100	0.003	0.009	<0.003
LA102606-04	Blank[c]	10573917	10/28/06	0.0	0.0	0	n/a	n/a	n/a
LA102706-01	West perimeter	10573918	10/28/06	1038.0	2.0	100	0.003	0.008	<0.003
LA102706-02	East perimeter	10573919	10/28/06	1038.0	2.0	100	0.003	0.008	<0.003
LA102706-03	Uphill work zone	10573920	10/28/06	1038.0	4.0	100	0.003	0.008	<0.003
LA102706-04	Blank[c]	10573921	10/28/06	0.0	0.0	0	n/a	n/a	n/a
LA102806-01	West perimeter	10573922	10/28/06	924.0	1.0	100	0.003	0.009	<0.003
LA102806-02	East perimeter	10573923	10/28/06	914.0	1.0	100	0.003	0.009	<0.003
LA102806-03	Uphill work zone	10573924	10/28/06	888.0	3.0	100	0.003	0.009	<0.003
LA102806-04	Blank[c]	10573925	10/28/06	0.0	0.0	0	n/a	n/a	n/a
LA103006-01	West Perimeter	10576439	10/30/06	820.0	8.5	100	0.003	0.013	0.004
LA103006-02	East Perimeter	10576440	10/30/06	826.0	20.5	100	0.003	0.030	0.012
LA103006-03	Uphill work area	10576441	10/30/06	826.0	5.5	100	0.003	0.010	<0.003

Table H-4 (continued)

Sample ID	Location	Lab Number	Date Collected	Volume (L)	Fibers	Fields	LOD F/cc	95% UCL	Fibers/ cc
LA103006-04	Blank[c]	10576442	10/30/06	0.0	1.0	100	n/a	n/a	n/a
LA103106-02	East perimeter	10576443	10/31/06	310.0	5.0	100	0.009	0.027	<0.009
LA103106-03	Uphill work area	10576444	10/31/06	310.0	0.5	100	0.009	0.027	<0.009
LA103106-04	Blank[c]	10576445	10/31/06	0.0	3.0	100	n/a	n/a	n/a
LA110106-01	West perimeter	10576446	11/01/06	800.0	1.5	100	0.003	0.010	<0.003
LA110106-02	East perimeter	10576447	11/01/06	808.0	1.5	100	0.003	0.010	<0.003
LA110106-03	Uphill work area	10576448	11/01/06	784.0	15.5	100	0.003	0.026	0.010
LA110106-04	Blank[c]	10576449	11/01/06	0.0	0.0	100	n/a	n/a	n/a
LA110206-01	East perimeter	10581876	11/02/06	944.0	2.5	100	0.003	0.009	<0.003
LA110206-02	Uphill work area	10581877	11/02/06	944.0	2.0	100	0.003	0.009	<0.003
LA110206-03	West perimeter	10581878	11/02/06	944.0	0.0	100	0.003	0.009	<0.003
LA110206-04	Blank[c]	10581879	11/02/06	0.0	1.0	100	n/a	n/a	n/a
LA110306-01	East perimeter	10581880	11/03/06	587.0	1.0	100	0.005	0.014	<0.005
LA110306-02	West perimeter	10581881	11/03/06	587.0	0.0	100	0.005	0.014	<0.005
LA110306-03	Uphill work area	10581882	11/03/06	587.0	1.0	100	0.005	0.014	<0.005
LA110306-04	Blank[c]	10581883	11/03/06	0.0	1.0	100	n/a	n/a	n/a
LA110906-01	Uphill work area	10581884	11/09/06	600.0	4.0	100	0.004	0.014	<0.004
LA110906-02	West perimeter	10581885	11/09/06	600.0	5.0	100	0.004	0.014	<0.004
LA111006-01	Uphill work area	10581886	11/10/06	972.0	1.5	100	0.003	0.009	<0.003
LA111006-02	Uphill work area	10581887	11/10/06	1080.0	4.0	100	0.002	0.008	<0.002
LA111006-03	Blank[c]	10581888	11/10/06	0.0	1.0	100	n/a	n/a	n/a
LA111306-01	Vacuum Truck	10583856	11/13/06	918.0	11.5	100	0.003	0.017	0.006
LA111306-02	Uphill work area	10583857	11/13/06	816.0	20.0	100	0.003	0.031	0.012
LA111406-01	Vacuum Truck	10583858	11/14/06	624.0	8.0	100	0.004	0.018	0.006
LA111406-02	Blank[c]	10583859	11/14/06	0.0	0.0	100	n/a	n/a	n/a
LA111506-01	Uphill work area	10583860	11/15/06	768.0	3.5	100	0.004	0.011	<0.004
LA111606-01	Upper Area	10583861	11/16/06	864.0	9.5	100	0.003	0.010	0.003
LA111606-02	West perimeter	10583862	11/16/06	864.0	5.0	100	0.003	0.010	<0.003
LA111606-03	Blank[c]	10583863	11/16/06	0.0	4.0	100	n/a	n/a	n/a
LA111806-01	Upper area	10583864	11/18/06	864.0	7.0	100	0.003	0.010	<0.003
LA111806-02	East perimeter	10583865	11/18/06	864.0	5.0	100	0.003	0.010	<0.003
LA111906-01	Upper area	10583866	11/19/06	480.0	11.0	100	0.006	0.021	0.007
LA112006-01	Upper area	10583867	11/19/06	912.0	4.0	100	0.003	0.009	<0.003
LA112006-02	Blank[d]	10583868	11/19/06	0.0	7.0	100	n/a	n/a	n/a
LA120806-01	Upper Area	10591904	12/16/06	960.0	2.0	100	0.003	0.009	<0.003
LA120906-01	Upper Area	10591905	12/16/06	840.0	3.0	100	0.003	0.010	<0.003

Table H-4 (continued)

Sample ID	Location	Lab Number	Date Collected	Volume (L)	Fibers	Fields	LOD F/cc	95% UCL	Fibers/ cc
LA121406-01	Trailer	10591906	12/16/06	1080.0	18.0	100	0.002	0.021	0.008
LA121506-01	Trailer	10591907	12/16/06	1020.0	47.5	100	0.003	0.056	0.023

[a] na = Not available.

[b] n/a = Not applicable.

[c] Blank filters are reported only as number of fibers and fields counted. The result was used to blank correct the other samples on the laboratory report.

[d] Due to possible contamination this result was not used to blank correct the other samples in the laboratory report.

Table H-5
Asbestos Clearance Samples, Los Alamos Ash Pile Removal

Sample ID	Date Submitted	Description	Asbestos Type	Percent Asbestos	Other Fibers	Percent Content	Matrix
A4EG-11-10-01	11/14/06	Brown Soil	NAD[a]	—[b]	Plant	1–5	Clay, Sand, Opaques
A3CE11-10-02	11/14/06	Brown Debris	NAD	—	None	—	Clay, Sand, Opaques
G4CW-11-10-03	11/14/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
G3CW-11-10-04	11/14/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
E1C-11-10-05	11/14/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
D1C11-10-06	11/14/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
C1C-11-10-07	11/14/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
G6NE-11-12-03	11/14/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
G5C-11-12-02	11/14/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
G2C-11-12-01	11/14/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
A2C-11-21-01	11/22/06	Brown Soil	NAD	—	Plant	5–10	Sand, Opaques
B2C-11-21-02	11/22/06	Brown Soil	NAD	—	Plant	5–10	Sand, Opaques
C2C-11-21-03	11/22/06	Brown Soil	NAD	—	Plant	5–10	Sand, Opaques
C3C-11-21-04	11/22/06	Brown Soil	NAD	—	Plant	5–10	Sand, Opaques
D2C-11-21-05	11/22/06	Brown Soil	NAD	—	Plant	1–5	Sand, Opaques
E2C-11-21-06	11/22/06	Brown Soil	NAD	—	Plant	5–10	Sand, Opaques
F2C11-21-07	11/22/06	Brown Soil	NAD	—	Plant	5–10	Sand, Opaques
D5C-11-29-01	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
B4CS-11-29-02	12/13/06	Brown Soil	NAD	—	None	—	Clay, Sand, Opaques
C5C-11-29-03	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
B5C-11-29-04	12/13/06	Brown Soil	NAD	—	None	—	Clay, Sand, Opaques
B6C-12-8-01	12/13/06	Brown Soil	NAD	—	None	—	Clay, Sand, Opaques
C7C-12-8-02	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
B7CE-12-9-01	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
A6C-12-9-02	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
E7C-12-9-03	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
E8C-12-9-05	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
G6C-12-9-07	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
F6C-12-9-08	12/13/06	Black Debris	NAD	—	None	—	Clay, Sand, Opaques
G7C-12-9-10	12/13/06	Brown Debris	NAD	—	Plant	1–5	Clay, Sand, Opaques
F8C-12-9-11	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
B8C-12-9-12	12/13/06	Brown Soil	NAD	—	None	—	Clay, Sand, Opaques
C6C-12-10-02	12/13/06	Brown Debris	NAD	—	Plant	1–5	Clay, Sand, Opaques
D3C-12-12-01	12/13/06	Brown Soil	NAD	—	None	—	Clay, Sand, Opaques
B3C-12-12-02	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
E3C-12-12-03	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques

Table H-5 (continued)

Sample ID	Date Submitted	Description	Asbestos Type	Percent Asbestos	Other Fibers	Percent Content	Matrix
E4C-12-12-04	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
A5C-12-12-05	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
C4C-12-12-06	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
D4C-12-12-07	12/13/06	Brown Soil	NAD	—	None	—	Clay, Sand, Opaques
A6C-12-12-08	12/13/06	Brown Soil	NAD	—	None	—	Clay, Sand, Opaques
G1C-12-12-09	12/13/06	Brown Soil	NAD	—	None	—	Clay, Sand, Opaques
Z5C-12-12-10	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
Z6C-12-12-11	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
B1C-12-12-12	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
D6CE-12-12-13	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
F1C-12-12-14	12/13/06	Brown Soil	NAD	—	Plant	1–5	Clay, Sand, Opaques
FSC-3-30-01	03/30/07	Brown Soil	NAD	—	Plant	1–5	Sand
A7SW-3-30-02	03/30/07	Brown Soil	NAD	—	Plant	Trace <1	Sand
F7E-3-30-03	03/30/07	Brown Soil	NAD	—	Plant Synthetic	1–5 1–5	Sand
F4C-3-30-04	03/30/07	Brown Soil	NAD	—	Plant	1–5	Sand Opaques
F3C-3-30-05	03/30/07	Brown Soil	NAD	—	Plant	1–5	Sand
Z7C-3-30-06	03/30/07	Brown Soil	NAD	—	Plant	10–30	Sand
D8N-3-30-07	03/30/07	Brown Soil	NAD	—	Plant	50–75	Sand
A7C-3-30-08	03/30/07	Brown Soil	NAD	—	Plant	50–75	Sand
E5C-3-30-09	03/30/07	Brown Soil	NAD	—	Plant	Trace <1	Sand
C9SE-3-30-10	03/30/07	Brown Soil	NAD	—	Plant	1–5	Sand
C9C-3-30-11	03/30/07	Brown Soil	NAD	—	Plant	50–75	Sand
G8C-3-30-12	03/30/07	Brown Soil	NAD	—	Plant	1–5	Sand
E6C-3-30-13	03/30/07	Brown Soil	NAD	—	Plant	1–5	Sand
E5SE-3-30-14	03/30/07	Brown Soil	NAD	—	None	—	Sand
D7C-3-30-15	03/30/07	Brown Soil	NAD	—	Plant	5–10	Sand
D9C-3-30-16	03/30/07	Brown Soil	NAD	—	None	—	Sand
G7W 3-30-17	03/30/07	Brown Soil	NAD	—	Plant	1–5	Sand
Z7NE-3-30-18	03/30/07	Brown Soil	NAD	—	Plant	1–5	Sand
A8C-3-30-19	03/30/07	Brown Soil	NAD	—	Plant	50 – 75	Sand
C8N-3-30-20	03/30/07	Brown Soil	NAD	—	Plant	50 – 75	Sand
D7NW-3-30-21	03/30/07	Brown Soil	NAD	—	Plant	5–10	Clay, Sand, Opaques
F3NW-3-30-22	03/30/07	Brown Soil	NAD	—	None	—	Clay, Sand, Opaques
E6SE-30-23	03/30/07	Brown Soil	NAD	—	Plant	50–75	Clay, Sand, Opaques
F7C-3-30-24	03/30/07	Brown Soil	NAD	—	Plant	5–10	Clay, Sand, Opaques
F4SW-3-20-25	03/30/07	Brown Soil	NAD	—	Plant	50–75	Clay, Sand, Opaques
G8SE-3-30-26	03/30/07	Brown Soil	NAD	—	Plant	5–10	Clay, Sand, Opaques

Table H-5 (continued)

Sample ID	Date Submitted	Description	Asbestos Type	Percent Asbestos	Other Fibers	Percent Content	Matrix
F5SE-3-30-27	03/30/07	Brown Soil	NAD	—	Plant	30–50	Clay, Sand, Opaques
D8C-3-30-28	03/30/07	Brown Soil	NAD	—	Plant	1–5	Sand
A8NW-3-30-29	03/30/07	Brown Soil	NAD	—	Plant	5–10	Sand

[a] NAD = No asbestos detected.

[b] — = Not applicable.

Appendix I

Ecological Screening Assessment

The approach for conducting ecological assessments is described in the "Screening Level Ecological Risk Assessment Methods, Revision 2" (LANL 2004, 087630). The assessment consists of the following four parts: (1) a scoping evaluation, (2) a screening evaluation, (3) an uncertainty analysis, and (4) an interpretation of the results.

I-1.0 SCOPING EVALUATION

The scoping evaluation establishes the breadth and focus of the screening assessment. The ecological scoping checklist, which is included as Attachment I-1, is a useful tool for organizing existing ecological information. The information is used to determine whether ecological receptors might be affected and to identify the types of receptors might be present.

The Consolidated Unit 73-002-99, located in Technical Area (TA) 73 at Los Alamos National Laboratory (the Laboratory), consists of a mesa top portion and a canyon slope portion. The mesa top is developed and paved with asphalt, which covers Area of Concern (AOC) 73-003 and the septic tank and lines of Solid Waste Management Unit (SWMU) 73-004(b). The mesa-top portion of SWMUs 73-004(a) and 73-006 is in the vicinity of the incinerator building, while the outfalls are on the canyon slope and were comingled with the ash debris of SWMU 73-002. The mesa top/mesa edge beyond the asphalt parking lot is either bare ground or vegetated with grass and chamisa as well as some ponderosa pine and piñon-juniper. The vegetative cover on the canyon slope ranges from high to medium and provides habitat for ecological receptors. The vegetation where no remediation activities occurred consists of ponderosa pine, scrub oak, and piñon-juniper. The area of the former ash debris currently contains no vegetation.

The area provides potential habitat for ecological receptors. The canyon slope presents habitat for a variety of receptors and is probably frequented by large and small mammals and birds. The canyon slope shows evidence of small mammals and deer. A variety of birds have been observed. No aquatic habitat is present on or near the sites.

The sites encompass the foraging habitat for the Mexican spotted owl. The Mexican spotted owl may be assumed to forage in the area with moderate frequency. Red-tailed hawks and other birds of prey have been seen in the area and may use the canyon slope for foraging.

The scoping portion of the assessment indicated that terrestrial receptors were appropriate for evaluating the concentrations of chemicals of potential ecological concern (COPECs) in soil and tuff samples. Aquatic receptors were not evaluated because no aquatic communities and no aquatic habitat or perennial source of water exists at any of the sites. The depth of the regional aquifer (approximately 1200 ft bgs) and the semiarid climate limit transport to groundwater plus the steep slope of the canyon promotes surface flow rather than pooling or infiltration. The potential exposure of terrestrial receptors to COPECs in soil and tuff is by root uptake, inhalation, soil ingestion, dermal contact, external irradiation, and food-web transport (Attachment I-1). The weathering of tuff is the only viable natural process that may result in the exposure of receptors to COPECs in tuff. Because of the slow rate of weathering expected for tuff, exposure to COPECs in tuff is negligible, although it is included in the assessment. Plant exposure to COPECs in tuff is largely limited to fractures near the surface, which does not produce sufficient biomass to support an herbivore population. Consequently, the COPECs in tuff are unavailable to cause adverse population-level effects.

The potential risk was evaluated for the following ecological receptors representing several trophic levels:

- plants,
- soil-dwelling invertebrates (represented by the earthworm),

- deer mouse (mammalian omnivore),
- Montane shrew (mammalian insectivore),
- desert cottontail (mammalian herbivore),
- red fox (mammalian carnivore),
- American robin (avian insectivore, avian omnivore, and avian herbivore), and
- American kestrel [avian insectivore, avian carnivore, and surrogate for threatened and endangered (T&E) species].

The rationale for these receptors is presented in "Screening Level Ecological Risk Assessment Methods, Revision 2" (LANL 2004, 087630). The ecological screening levels (ESLs) are derived for each of these receptors where information was available. The ESLs are based on similar species and derived from experimentally determined no observed adverse effect levels (NOAELs), lowest observed adverse effect levels (LOAELs), or doses lethal to 50% of the population. Relevant information necessary to calculate ESLs, including concentration equations, dose equations, bioconcentration factors, transfer factors, and toxicity reference values (TRVs), are presented in the ECORISK Database, Version 2.2 (LANL 2005, 090032).

Assessment Endpoints

An assessment endpoint is an explicit expression of the environmental value to be protected. These endpoints are ecologically relevant and help sustain the natural structure, function, and biodiversity of an ecosystem or its components (EPA 1998, 062809). In a screening-level assessment, assessment endpoints are attributes of ecological receptors that may be adversely affected by exposure to hazardous wastes from past operations (EPA 1997, 059370), wherein receptors are populations and communities (EPA 1999, 070086).

The ecological screening assessment is designed to protect populations and communities of biota rather than individual organisms, except for listed or candidate T&E species or treaty-protected species (EPA 1999, 070086). The protection of individual organisms within these designated protected species could also be achieved at the population level; the populations of these species tend to be small, and the loss of an individual adversely affects the species.

In accordance with this guidance, the Laboratory developed generic assessment endpoints to ensure that values at all levels of the food chain are considered in the ecological screening process (LANL 1999, 064137). These general assessment endpoints can be measured using impacts on reproduction, growth, and survival to represent categories of effects that may adversely impact populations. In addition, specific receptor species were chosen to represent each functional group. The receptor species were chosen because of their presence at the site, their sensitivity to the COPECs, and their potential for exposure to those COPECs. These categories of effects and the chosen receptor species were used to select the types of effects seen in toxicity studies considered in the development of the TRVs. Toxicity studies used in the development of TRVs included only those in which the evaluated adverse effect affected reproduction, survival, and/or growth.

The selection of receptors and assessment endpoints are designed to be protective of both the representative species used as screening receptors and the other species within their feeding guilds and the overall food web for the terrestrial and aquatic ecosystems. Focusing the assessment endpoints on the general characteristics of species that affect populations (rather than the biochemical and behavioral changes that may affect only the studied species) also ensures applicability to the ecosystem of concern.

I-2.0 SCREENING EVALUATION

Ecological risk screening assessments were conducted for AOC 73-003, SWMU 73-004(b), and for the combined area of SWMUs 73-002, 73-004(a), and 73-006. SWMUs 73-002, 73-004(a), and 73-006 were evaluated together because they are in the same general area, and the outfalls from SWMUs 73-004(a) and 73-006 terminated within the ash debris (SWMU 73-002). AOC 73-003 is entirely under the asphalt parking lot of the Los Alamos County Airport and as such is not likely to result in exposure to ecological receptors under current conditions. Similarly, the septic tank and lines associated with SWMU 73-004(b) are under the asphalt parking lot, but the discharge line daylights on the canyon slope. The only portion of the SWMU that results in exposure to ecological receptors under current conditions is the outfall and drainage on the canyon slope.

The ecological screening evaluation identifies COPECs and is based on the comparison of exposure point concentrations (EPCs) (determined from samples collected between 0 and 5 ft below ground surface [bgs]) with ESLs. The EPCs were calculated using U.S. Environmental Protection Agency's (EPA's) ProUCL program (version 3.0.1) and the values are presented in Tables I-2.0-1 to I-2.0-4. The ESLs were obtained from the ECORISK Database, Version 2.2 (LANL 2005, 090032) and are presented in Table I-2.0-5 for the COPECs and receptors. The ESLs are based on similar species and are derived from experimentally determined NOAELs, LOAELs, or doses determined lethal to 50% of the test population. Information relevant to calculating ESLs, including concentration equations, dose equations, bioconcentration factors, transfer factors, and TRVs, is presented in the ECORISK Database, Version 2.2 (LANL 2005, 090032).

The evaluation involves calculating hazard quotients (HQs) for all COPECs and all screening receptors (LANL 2004, 087630). The HQs are the ratios of the EPCs to the ESLs. The EPCs consisted of 95% upper confidence limits (UCLs) or maximum detected concentrations. The chemicals of potential concern (COPCs) with HQs greater than 0.3 are identified as COPECs and evaluated further. COPCs that do not have ESLs for any receptor are retained as COPECs and discussed in the uncertainty analysis.

I-2.1 AOC 73-003

Comparisons of the COPC EPCs with the final (minimum) soil ESLs for AOC 73-003 are shown in Table I-2.1-1. The COPCs with HQs greater than 0.3 include barium, cadmium, cobalt, lead, selenium, DDE (dichlorophenyltrichloroethylene), and DDT (dichlorodiphenyltrichloroethane) and are retained as COPECs. Nitrate, perchlorate, and DDD (dichlorodiphenyldichloroethane), which do not have ESLs, are retained as COPECs and discussed in the uncertainty analysis. Potential ecological risk associated with aluminum in soils is based on soil pH in accordance with EPA guidance (EPA 2003, 085645). Aluminum is retained as a COPEC only in those soils with pH lower than 5.5. Aluminum was eliminated as a COPEC because the mean soil/tuff pH is approximately 8.2. In addition, arsenic and manganese were detected above the soil or the Tshirege Member of the Bandelier Tuff (Qbt 3) background values (BVs) but were not detected above the maximum background concentrations from 0 to 5 ft bgs and were not retained as COPECs for the ecological risk screening assessment.

The COPECs are evaluated further in Table I-2.1-2. The HQs for each COPEC/receptor combination as well as the HIs for each receptor were calculated. The HI is the sum of HQs for chemicals with common toxicological endpoints for a given receptor. For the purposes of ecological screening, it is assumed that nonradionuclides have common toxicological effects. An HI greater than 1.0 is an indication of potential adverse impacts. The HI analysis provides a clearer picture of potential adverse impacts by determining how many receptors may be affected and provides information on T&E species.

The HIs for the mammalian receptors range from 0.3 for the red fox to 28 for the Montane shrew (Table I-2.1-2). The HIs for avian receptors range from 4 for the kestrel (intermediate carnivore) to 29 for an robin (insectivore). The top carnivore kestrel (surrogate for the Mexican spotted owl) had an HI of 0.4. The plant and earthworm HIs were 180 and 3, respectively.

I-2.2 SWMU 73-004(b)

Comparisons of the COPC EPCs with the final (minimum) soil ESLs for SWMU 73-004(b) are shown in Table I-2.2-1. The COPCs with HQs greater than 0.3 include arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, selenium, silver, zinc, acenaphthene, Aroclor-1254, Aroclor-1260, benzoic acid, bis(2-ethylhexyl)phthalate, DDE, and di-n-butyl phthalate and are retained as COPECs. Nitrate, perchlorate, DDD, and endrin aldehyde, which do not have ESLs, are retained as COPECs and discussed in the uncertainty analysis. Potential ecological risk associated with aluminum is based on soil pH in accordance with EPA guidance (EPA 2003, 085645). Aluminum is retained as a COPEC only in those soils with pH lower than 5.5. Aluminum was eliminated as a COPEC because the mean soil/tuff pH is approximately 7.0. In addition, beryllium, iron, manganese, nickel, and vanadium were detected above the soil and/or the Qbt 3 BVs but were not detected above the maximum background concentrations from 0 to 5 ft bgs and were not retained as COPECs for the ecological risk screening assessment.

The COPECs are evaluated further in Table I-2.2-2. The HQs for each COPEC/receptor combination as well as the HIs for each receptor were calculated. The HI is the sum of HQs for chemicals with common toxicological endpoints for a given receptor. For the purposes of ecological screening, it is assumed that nonradionuclides have common toxicological effects. An HI greater than 1.0 is an indication of potential adverse impacts. The HI analysis provides a clearer picture of potential adverse impacts by determining how many receptors may be affected and provides information on T&E species.

The HIs for the mammalian receptors range from 5 for the desert cottontail to 22 for the Montane shrew (Table I-2.2-2). The HIs for avian receptors range from 16 for the robin (herbivore) to 117 for the robin (insectivore). The top carnivore kestrel (surrogate for the Mexican spotted owl) had an HI of 18. The plant and earthworm HIs were 289 and 13, respectively.

I-2.3 SWMUs 73-002, 73-004(a), and 73-006

Comparisons of the COPC EPCs with the final (minimum) soil ESLs for SWMUs 73-002, 73-004(a), and 73-006 are shown in Table I-2.3-1. The COPCs with HQs greater than 0.3 include antimony, arsenic, barium, cadmium, chromium, copper, cyanide, lead, mercury, selenium, silver, thallium, vanadium, zinc, Aroclor-1242, Aroclor-1254, benzoic acid, bis(2-ethylhexyl)phthalate, DDE, di-n-butylphthalate, naphthalene, and tetrachlorodibenzodioxin[2,3,7,8-] are retained as COPECs. Nitrate, perchlorate, DDD, diethylphthalate, isopropyltoluene[4-], trichlorofluoromethane, and trichloro-1,2,2-trifluoroethane[1,1,2-], which do not have ESLs, are retained as COPECs and discussed in the uncertainty analysis. Potential ecological risk associated with aluminum is based on soil pH in accordance with EPA guidance (EPA 2003, 085645). Aluminum is retained as a COPEC only in those soils with pH lower than 5.5. Aluminum was eliminated as a COPEC because the mean soil/tuff is approximately 7.1.

The COPECs are evaluated further in Table I-2.3-2. The HQs for each COPEC/receptor combination as well as the HIs for each receptor were calculated. The HI is the sum of HQs for chemicals with common toxicological endpoints for a given receptor. For the purposes of ecological screening, it is assumed that nonradionuclides have common toxicological effects. An HI greater than 1.0 is an indication of potential adverse impacts. The HI analysis provides a clearer picture of potential adverse impacts by determining how many receptors may be affected and provides information on T&E species.

The HIs for the terrestrial receptors range from 2 for the desert cottontail to 29 for the Montane shrew (Table I-2.3-2). The HIs for avian receptors range from 12 for the kestrel (intermediate carnivore) to 77 for the robin (insectivore). The top carnivore kestrel (surrogate for the Mexican spotted owl) had an HI of 4. The plant and earthworm HIs were 419 and 10, respectively.

I-3.0 UNCERTAINTY ANALYSIS

The uncertainty analysis describes the key sources of uncertainty related to the screening assessment. This analysis can result in either adding or removing chemicals from the lists of COPECs. This section presents a qualitative uncertainty analysis of the issues relevant to evaluating the potential ecological risk.

I-3.1 Chemical Form

The assumptions used in the ESL derivations were conservative and not necessarily representative of actual conditions. These assumptions include maximum chemical bioavailability, maximum receptor ingestion rates, minimum bodyweight, and additive effects of multiple COPECs. Most of these factors tend to result in conservative ESLs, which may lead to an overestimation of the potential risk. The assumption of additive effects for multiple COPECs may result in an over- or underestimation of the potential risk to receptors.

The chemical form of the individual COPECs was not determined as part of the investigation, which is largely a limitation of analytical quantitation for individual chemical species. Toxicological data are typically based on the most toxic and bioavailable chemical species, which are not often found in the environment. The inorganic, radionuclide, and organic COPECs are generally not 100% bioavailable to receptors in the natural environment because of the adsorption of chemical constituents to matrix surfaces (e.g., soils) or because of oxidation/reduction changes that render harmful chemical forms unavailable to biotic processes. The ESLs were calculated to ensure a conservative indication of potential risk (LANL 2004, 087630), and the values were biased toward overestimating the potential risk to receptors.

I-3.2 Exposure Pathways

The concentrations used in the calculations of HQs were the 95% UCL or the maximum detected concentration to a depth of 5 ft bgs, thereby allowing a conservative estimate of the EPC of each COPEC. As a result, the exposure of individuals within a population was evaluated using this specific concentration, which was assumed constant throughout the exposure area, resulting in an overestimation of the potential exposure and risk. Additionally, receptors are assumed to ingest 100% of their food and spend 100% of their time at the site. For AOC 73-003 and SWMU 73-004(b), either the entire site or a large portion of the site is under asphalt and as such has limited or no complete exposure pathways to receptors. These assumptions lead to an overestimation of potential risk to ecological receptors.

I-3.3 Toxicity Values

Although the ESLs are based on NOAELs, potential risk for a given COPEC/receptor combination occurs at a higher level, somewhere between the NOAEL-based threshold and the threshold based on the LOAEL. The use of NOAELs leads to an overestimation of potential risk to ecological receptors. ESLs are based on laboratory studies, requiring extrapolation to wildlife receptors. Laboratory studies are typically based on “artificial” and maintained populations with genetically similar individuals and are limited to single chemical exposures in isolated and controlled conditions using a single exposure pathway. Wild

species are concomitantly exposed to a variety of chemical and environmental stressors, potentially rendering them more susceptible to chemical stress. On the other hand, wild populations are probably more genetically diverse than laboratory populations, making wild populations less sensitive to chemical exposure than laboratory populations.

I-3.4 Background Concentrations

The ecological screening is based on the exposure of ecological receptors to contamination to a depth of 5 ft. Tables I-3.4-1 to I-3.4-3 presents the EPCs for inorganic COPECs for each site evaluated and the range of soil and tuff background concentrations (LANL 1998, 059730). Based on a comparison of the EPCs and the range of background concentrations: barium, cadmium, and cobalt were eliminated as COPECs for AOC 73-003; arsenic, barium, cadmium, copper, and zinc were eliminated as COPECs for SWMU 73-004(b); and antimony, arsenic, barium, cadmium, chromium, copper, cyanide, lead, mercury, selenium, silver, thallium, vanadium, and zinc were eliminated as COPECs for SWMUs 73-002, 73-004(a), and 73-006 because exposure is similar to background across the site and is not likely to pose a potential ecological risk. The EPCs are within the range of background concentrations or approximately a factor of 2 above the maximum background concentration for one or both media (soil/tuff).

I-3.5 Area Use Factors

In addition to the direct comparison of the EPC with the ESLs, area use factors (AUFs) are used to account for the amount of time that a receptor is likely to spend within the contaminated areas based on the size of the receptor's home range. The AUFs for individual organisms were developed by dividing the size of the site by the home range (HR) for that receptor. The areas are approximately 0.03 hectares (ha) for AOC 73-003; approximately 0.05 ha for SWMU 73-004(b) (including the drainage); and approximately 0.6 ha for SWMUs 73-002, 73-004(a), and 73-006. The HR for the Mexican spotted owl is 366 ha; therefore, the AUFs for the Mexican spotted owl are 0.00008 for AOC 73-003; 0.0001 for SWMU 73-004(b); and 0.002 for SWMUs 73-002, 73-004(a), and 73-006 (Tables I-3.5-1 to I-3.5-3). In addition, the unadjusted HIs for the carnivorous kestrel, which is a surrogate for the owl, are 0.4, 18, and 4, respectively. Based on the application of the AUF for the Mexican spotted owl to the HIs for the carnivorous kestrel there is no potential for ecological risk to the Mexican spotted owl (adjusted HIs=0.00003, 0.002, and 0.008, respectively).

I-3.6 Population Area Use Factors

The HI analyses (Tables I-2.1-2, I-2.2-2, and I-2.3-2.) shows that all terrestrial receptors had HIs greater than 1.0. Guidance from EPA calls for managing the ecological risk to populations rather than to individuals, with the exception of T&E species (EPA 1999, 070086). One approach to assessing potential effects on populations is to estimate the spatial extent of the areas inhabited by the wildlife populations.

The population area for each receptor is based on the individual receptor home range and its dispersal distance (Bowman et al. 2002, 073475). Bowman et al. (2002, 073475) estimate that the median dispersal distance for mammals is 7 times the linear dimension of the HR (i.e., the square root of the HR area). If only the dispersal distances for the mammals with HRs within the range of the screening receptors are used, the median dispersal distance becomes 3.5 times the square root of the HR (R^2 = 0.91 [Bowman et al. 2002, 073475]). If it is assumed that the receptors can disperse over the same distance in any direction, the population area is circular and the dispersal distance is the radius of the circle. Therefore, the population area for each receptor can be derived by $\pi(3.5\sqrt{HR})^2$ or approximately 40HR.

I-3.6.1 AOC 73-003

The AOC measures approximately 0.03 ha. The population area use factor (PAUF) is calculated by dividing the site area by the population area of the receptor (Table I-3.6-1). The resulting factor is multiplied by the receptor HI to determine if a potential impact on the population exists. HIs for the plant and earthworm are not adjusted by PAUFs because these receptors do not have HRs.

The HIs are recalculated minus the inorganic COPECs eliminated based on similarity of exposure to background and adjusted by the PAUFs. The adjusted HIs for the wildlife receptors are less than 1.0 (Table I-3.6-1). The plant HI (180) and the earthworm HI (3) are greater than 1.0 due to selenium and silver for the plant and selenium for the earthworm. Because this AOC is beneath the asphalt there is no exposure to plants or earthworms at this site.

I-3.6.2 SWMU 73-004(b)

The area measures approximately 0.05 ha, including the drainage to the furthest sample location. The PAUF is calculated by dividing the site area by the population area of the receptor (Table I-3.6-2). The resulting factor is multiplied by the receptor HI to determine if a potential impact on the population exists. HIs for the plant and earthworm are not adjusted by PAUFs because these receptors do not have HRs.

The HIs are recalculated minus the inorganic COPECs eliminated based on similarity of exposure to background and adjusted by the PAUFs. The adjusted HIs for the wildlife receptors are less than 1.0 (Table I-3.6-2). The plant HI (276) and the earthworm HI (2) are greater than 1.0 because of the selenium detection. Higher selenium concentrations were detected at the sample locations in the vicinity of the septic tank from 3 to 18 ft bgs and beneath the asphalt parking area of the Los Alamos County Airport. Silver was detected at only one location (73-25555) and was not detected above background downslope or below 3 ft bgs. In addition, the mesa-top portion of the SWMU is developed and is part of the airport, and the canyon slope is well vegetated and not adversely impacted by the discharges from the septic tank. Therefore, SWMU 73-004(b) does not pose a potential risk to earthworm populations and plant communities.

I-3.6.3 SWMUs 73-002, 73-004(a), and 73-006

The area measures approximately 0.6 ha. The PAUF is calculated by dividing the site area by the population area of the receptor (Table I-3.6-3). The resulting factor is multiplied by the receptor HI to determine if a potential impact on the population exists. The HIs for the plant and earthworm are not adjusted by PAUFs because these receptors do not have HRs.

The HIs are recalculated minus the inorganic COPECs eliminated based on similarity of exposure to background and adjusted by the PAUFs. The adjusted HIs for the wildlife receptors are less than 1.0, except for the robin (insectivore) and the deer mouse (Table I-3.6-3). The HIs for these two receptors are approximately 2. The plant and the earthworm HIs are less than 0.3 (Table I-3.6-3).

COPECs Contributing to PAUF-Adjusted HIs Greater Than 1

The robin (insectivore) HI is primarily the result of di-n-butyl phthalate (HQ = 40.9) (Table I-3.6-3). Di-n-butyl phthalate was detected in 28 of 170 samples across the site from 0–5-ft. However, all the detected concentrations were below the estimated quantitation limits (EQL) (approximately 0.3 mg/kg to 0.4 mg/kg). The 95% UCL for the detected concentrations is 0.059 mg/kg, which results in an HQ of 5. The HI for the robin (insectivore) using this HQ in Table I-3.6-3 becomes approximately 6, which when

multiplied by the PAUF for the robin (0.04) results in an adjusted HI of approximately 0.3. Therefore, di-n-butyl phthalate does not a potential risk and is not retained as a COPEC for SWMUs 73-002, 73-004(a), and 73-006.

The deer mouse HI is primarily a result of tetrachlorodibenzodioxin[2,3,7,8-] (approximately 75%). The EPC for tetrachlorodibenzodioxin[2,3,7,8-] (4.3E-06 mg/kg) is similar to concentrations reported in Pueblo Canyon as part of the Los Alamos and Pueblo Canyons investigations (LANL 2005, 091818). The maximum tetrachlorodibenzodioxin[2,3,7,8-] concentration in Pueblo Canyon was reported as 4.6E-06 mg/kg, which is approximately the same as the EPC. Field studies on small mammalian populations in Pueblo Canyon were conducted and no differences in population density, sex ratio, or reproductive classes were noted in the report. The results of the small mammal studies indicated no adverse ecological effects from contaminants in Pueblo Canyon including dioxins and furans (LANL 2005, 091818). Therefore, no potential adverse ecological effects from tetrachlorodibenzodioxin[2,3,7,8-] to small mammals are likely at SWMUs 73-002, 73-004(a), and 73-006.

I-3.7 COPECs without ESLs

Several COPECs at each site do not have ESLs for any ecological receptors. These COPECs are retained as COPECs and discussed below for each site.

I-3.7.1 AOC 73-003

Nitrate, perchlorate, and DDD were detected in one to several samples at AOC 73-003 and do not have ESLs.

Nitrate was detected in seven samples at concentrations ranging from 2.42 mg/kg to 14.7 mg/kg. These concentrations likely represent naturally occurring levels of nitrate. In addition, the NMED residential SSL for nitrate is 100,000 mg/kg (NMED 2006, 092513), which indicates very low toxicity. Nitrate is not retained as a COPEC.

Perchlorate was detected in one sample at a concentration of 0.00061 mg/kg. The EPA Region 6 residential SSL is 55 mg/kg (EPA 2006, 094321), which indicates low toxicity. Perchlorate is not retained as a COPEC.

DDD was detected in one sample at a concentration of 0.006 mg/kg. If DDE is used as a surrogate, the minimum ESL is 0.019 for the robin (insectivore). This results in a minimum HQ of 0.3 for DDD. Based on the low HQ and the infrequency of detection, DDD is not retained as COPEC at 73-003.

I-3.7.2 SWMU 73-004(b)

Nitrate, perchlorate, DDD, and endrin aldehyde were detected in one to several samples at SWMU 73-004(b) and do not have ESLs.

Nitrate was detected in 16 samples from 0-5 ft at concentrations ranging from 0.753 mg/kg to 72.8 mg/kg. These concentrations mainly represent naturally occurring levels of nitrate. In addition, the New Mexico Environment Department (NMED) residential soil screening level (SSL) for nitrate is 100,000 mg/kg (NMED 2006, 092513), which indicates very low toxicity. Nitrate is not retained as a COPEC.

Perchlorate was detected in 8 samples from 0-5 ft at concentrations ranging from 0.000532 mg/kg to 0.00702. The EPA Region 6 residential SSL is 55 mg/kg (EPA 2006, 094321), which indicates low toxicity. Perchlorate is not retained as a COPEC.

The analyte DDD was detected in four samples from 0 to 5 ft at concentrations ranging from of 0.00057 mg/kg to 4.7 mg/kg and a 95% UCL of 1.2 mg/kg. If DDE is used as a surrogate, the minimum ESL is 0.019 for the robin (insectivore). This results in a minimum HQ of 63 for the robin (insectivore). The HQs are associated with two sample locations (73-02213 and 73-02216), which reported DDD at 4.7 mg/kg and 1.5 mg/kg. All other sample locations reported DDD as either not detected or below the minimum ESL. In addition, if the PAUF for the robin (0.003) is applied to the minimum HQ, the adjusted HQ for DDD is 0.2. Based on the PAUF adjusted HQ and the infrequency of detection, DDD is not retained as COPEC.

Endrin aldehyde was detected in one sample at a concentration of 0.00792 mg/kg. Using endrin as a surrogate, the minimum ESL is 0.0014 for the robin (insectivore). This results in a minimum HQ of 6 for the robin (insectivore). If the PAUF for the robin (0.003) is applied to the minimum HQ, the adjusted HQ for endrin aldehyde is 0.02. Based on the PAUF adjusted HQ and the infrequency of detection, endrin aldehyde is not retained as COPEC.

I-3.7.3 SWMUs 73-002, 73-004(a), and 73-006

Nitrate, perchlorate, DDD, diethylphthalate, isopropyltoluene[4-], trichlorofluoromethane, and trichloro-1,2,2-trifluoroethane[1,1,2-], which do not have ESLs, were detected in one to several samples at SWMUs 73-002, 73-004(a), and 73-006.

Nitrate was detected in 36 samples from 0 to 5 ft at concentrations ranging from 0.766 mg/kg to 9.35 mg/kg. These concentrations mainly represent naturally occurring levels of nitrate. In addition, the NMED residential SSL for nitrate is 100,000 mg/kg (NMED 2006, 092513), which indicates very low toxicity. Nitrate is not retained as a COPEC.

Perchlorate was detected in 14 samples from 0 to 5 ft at concentrations ranging from 0.000548 mg/kg to 0.0075 mg/kg. The EPA Region 6 residential SSL for perchlorate is 55 mg/kg (EPA 2006, 094321), which indicates low toxicity. Perchlorate is not retained as a COPEC.

The analyte DDD was detected in 10 samples from 0 to 5 ft at concentrations ranging from 0.00105 mg/kg to 0.173 mg/kg and a 95% UCL of 0.0087 mg/kg. If DDE is used as a surrogate, the minimum ESL is 0.019 for the robin (insectivore), and the minimum HQ is 0.5. If the PAUF for the robin (0.04) is applied to the minimum HQ, the adjusted HQ for DDD is 0.02. Based on the PAUF-adjusted HQ and the infrequency of detection, DDD is not retained as a COPEC.

Diethylphthalate was detected in three samples at concentrations ranging from 0.067 mg/kg to 0.16 mg/kg. If dimethylphthalate is used as a surrogate, the minimum ESL is 10 mg/kg for the earthworm and the minimum HQ is approximately 0.02. Based on the low HQ and the infrequency of detection, diethylphthalate is not retained as a COPEC.

Isopropyltoluene[4-] was detected in one sample at a concentration of 0.00076 mg/kg, which is below the estimated quantitation limit (0.0061 mg/kg). Isopropylbenzene can be used as a surrogate for 4-isopropyltoluene based on structural similarity. A comparison of the maximum detected 4-isopropyltoluene concentration with the NMED residential SSL for isopropylbenzene (271 mg/kg) (NMED 2006, 092513) indicates the potential toxicity to 4-isopropyltoluene is very low. Because of the infrequency of detection, the low concentrations, and the apparent low potential for toxicity, 4-isopropyltoluene is not retained as a COPEC.

Trichlorofluoromethane was detected in one sample at a concentration of 0.007 mg/kg, which is slightly above the estimated quantitation limit (0.0058 mg/kg). The NMED residential SSL for

trichlorofluoromethane is 588 mg/kg (NMED 2006, 092513), which indicates low toxicity. Because of the infrequency of detection, the low concentrations, and the apparent low potential for toxicity, trichlorofluoromethane is not retained as a COPEC.

Trichloro-1,2,2-trifluoroethane[1,1,2-] was detected in two samples at a concentration of 0.002 mg/kg, which is below the EQL (0.006 mg/kg). The EPA Region 6 risk-based residential SSL for trichloro-1,2,2-trifluoroethane[1,1,2-] is 21000 mg/kg (EPA 2006, 094321), which indicates very low toxicity. Because of the infrequency of detection, the low concentrations, and the apparent low potential for toxicity, trichloro-1,2,2-trifluoroethane[1,1,2-] is not retained as a COPEC.

I-3.8 Department Of Energy Tier I Bioconcentration Guides

The U.S. Department of Energy (DOE) Tier I bioconcentration guide (BCG) is a lower value for cesium-137 (20.8 pCi/g) than the ECORISK Database final ESL (680 pCi/g). If the DOE Tier I BCG is used, the HQ increases to 0.05 for the wildlife receptors. The DOE BCG incorporates bioaccumulation factors that are orders of magnitude higher than those in the ECORISK Database. Environmental surveillance and monitoring at the Laboratory indicate that bioaccumulation factors are not as high as those used by DOE (Bennett et al. 1996, 056035). Therefore, the ESL comparison is more representative than the BCG comparison.

The DOE Tier I BCG is a lower value for strontium-90 (22.5 pCi/g) than the ECORISK Database final ESL (560 pCi/g). If the DOE Tier I BCG is used, the HQ increases to 0.003 for the wildlife receptors. The DOE BCG incorporates bioaccumulation factors that are orders of magnitude higher than those in the ECORISK Database. Environmental surveillance and monitoring at the Laboratory indicate that bioaccumulation factors are not as high as those used by DOE (Bennett et al. 1996, 056035). Therefore, the ESL comparison is more representative than the BCG comparison.

I-4.0 RESULTS OF ECOLOGICAL SCREENING ANALYSIS

Based on the ecological screening assessment, several COPECs (including some COPECs without ESLs) were identified. All COPECs were eliminated by analyzing a number of factors that indicated no potential risk to ecological receptors.

I-5.0 REFERENCES

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

Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau; the U.S. Department of Energy–Los Alamos Site Office; the U.S. Environmental Protection Agency, Region 6; and the Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.

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Table I-2.0-1
Ecological COPC Statistics for AOC 73-003

COPC	Number of Analyses	Distribution Type	Minimum Concentration	Maximum Concentration	Mean Concentration	Standard Deviation	95% UCL	95% UCL Method
Inorganic Chemicals (mg/kg)								
Barium	10	Normal	36.1	218	124.9	66.1	163	Student's-t
Cadmium	10	Lognormal	0.08	2.96(U)	1.28	0.56	1.75	H-UCL
Cobalt	10	Normal	0.328	9.8	5.16	3.44	7.16	Student's-t
Lead	10	Nonparametric	5.58	130	24.3	37.9	76.5	Chebyshev(Mean, SD)
Nitrate	7	Lognormal	2.42	14.7	6.42	5.21	13.8	Chebyshev(MVUE)
Selenium	10	Normal	0.11	33.2	11.1	11.8	17.9	Student's-t
Organic Chemicals (mg/kg)								
Benzo(b)fluoranthene	10	n/a*	0.0152	0.38(U)	n/a	n/a	0.0152	Maximum detect
DDE	10	n/a	0.00151(U)	0.00702	n/a	n/a	0.00702	Maximum detect
DDT	10	Nonparametric	0.000655	0.19	0.007	0.06	0.103	Chebyshev(Mean, SD)
Fluoranthene	10	n/a	0.0178	0.38(U)	n/a	n/a	0.0178	Maximum detect
Pyrene	10	n/a	0.0139	0.38(U)	n/a	n/a	0.0139	Maximum detect

*n/a = Not applicable.

Table I-2.0-2
Ecological COPC Statistics for SWMU 73-004(b)

COPC	Number of Analyses	Distribution Type	Minimum Concentration	Maximum Concentration	Mean Concentration	Standard Deviation	95% UCL	95% UCL Method
Inorganic Chemicals (mg/kg)								
Arsenic	33	Gamma	0.642	13	3.29	2.24	3.95	Approximate gamma
Barium	33	Gamma	5.51	207	74.5	57	98.4	Approximate gamma
Cadmium	33	Nonparametric	0.1(U)	2.94(U)	0.68	0.81	0.68	Chebyshev(Mean, SD)
Chromium	33	Gamma	0.707	36	10.3	7.35	12.8	Approximate gamma
Cobalt	33	Nonparametric	0.506(U)	247	10.4	2.89	42.7	Chebyshev(Mean, SD)
Copper	33	Gamma	0.753	47.7	8.04	8.85	10.7	Approximate gamma
Lead	33	Nonparametric	3.07	190	17.1	31.9	41.3	Chebyshev(Mean, SD)
Mercury	33	Nonparametric	0.0058	0.93	0.059	0.16	0.18	Chebyshev(Mean, SD)
Selenium	33	Nonparametric	0.2(U)	29.9	5.71	8.76	12.2	Chebyshev(Mean, SD)
Silver	33	Nonparametric	0.0624	44.3	1.73	7.57	7.5	Chebyshev(Mean, SD)
Zinc	33	Gamma	18.3	150	43.7	22.4	49.4	Approximate gamma
Organic Chemicals (mg/kg)								
Acenaphthene	22	n/a*	0.0344(U)	0.37(U)	n/a	n/a	0.172	Maximum detect
Anthracene	22	Nonparametric	0.00954	0.37(U)	0.096	0.12	0.12	Chebyshev(Mean, SD)
Aroclor-1254	42	Nonparametric	0.00157	4.55	0.32	1.31	0.81	Chebyshev(Mean, SD)
Aroclor-1260	42	Nonparametric	0.0014	3.65	0.25	1.16	0.57	Chebyshev(Mean, SD)
Benzo(a)anthracene	22	Nonparametric	0.0131	0.462	0.11	0.14	0.21	Chebyshev(Mean, SD)
Benzo(a)pyrene	22	Nonparametric	0.0344(U)	0.467	0.11	0.14	0.21	Chebyshev(Mean, SD)
Benzo(b)fluoranthene	22	Nonparametric	0.0146	0.783	0.14	0.21	0.31	Chebyshev(Mean, SD)
Benzo(g,h,i)perylene	22	Nonparametric	0.0344(U)	0.369(U)	0.085	0.1	0.11	Chebyshev(Mean, SD)
Benzo(k)fluoranthene	22	Nonparametric	0.0344(U)	0.369(U)	0.078	0.11	0.12	Chebyshev(Mean, SD)
Benzoic acid	22	n/a	0.668	7.38(U)	n/a	n/a	0.668	Maximum detect
Bis(2-ethylhexyl)phthalate	22	n/a	0.172(U)	1.85(U)	n/a	n/a	0.34	Maximum detect
Butylbenzylphthalate	22	n/a	0.139	3.69(U)	n/a	n/a	0.139	Maximum detect

Table I-2.0-2 (continued)

COPC	Number of Analyses	Distribution Type	Minimum Concentration	Maximum Concentration	Mean Concentration	Standard Deviation	95% UCL	95% UCL Method
Chlordane[alpha-]	23	Lognormal	0.000714(U)	0.46	0.033	0.095	0.058	Chebyshev(MVUE)
Chlordane[gamma-]	23	Lognormal	0.000658	0.52	0.035	0.11	0.059	Chebyshev(MVUE)
Chrysene	22	Nonparametric	0.245	0.521	0.12	0.16	0.23	Chebyshev(Mean, SD)
DDE	23	Lognormal	0.000909	0.73(U)	0.056	0.15	0.083	Chebyshev(MVUE)
DDT	23	Lognormal	0.00133	0.34	0.04	0.073	0.085	Chebyshev(MVUE)
Di-n-butyl phthalate	22	n/a	0.21(U)	3.69(UJ)	n/a	n/a	0.45	Maximum detect
Di-n-octyl phthalate	22	n/a	0.122	3.69(UJ)	n/a	n/a	0.12	Maximum detect
Flouranthene	22	Nonparametric	0.0158	1.22	0.17	0.29	0.41	Chebyshev(Mean, SD)
Fluorene	22	n/a	0.132	0.37(U)	n/a	n/a	0.13	Maximum detect
Indeno(1,2,3-cd)pyrene	22	n/a	0.0344(U)	0.369(UJ)	n/a	n/a	0.16	Maximum detect
Methylnaphthalene[2-]	22	n/a	0.0167	0.37(U)	n/a	n/a	0.017	Maximum detect
Naphthalene	23	n/a	0.006(U)	0.37(U)	n/a	n/a	0.033	Maximum detect
Phenanthrene	22	Nonparametric	0.0112	1.08	0.15	0.25	0.33	Chebyshev(Mean, SD)
Pyrene	22	Nonparametric	0.0125	1.08	0.15	0.25	0.35	Chebyshev(Mean, SD)
Radionuclides (pCi/g)								
Tritium	2	n/a	0.05(U)	0.1	n/a	n/a	0.1	Maximum detect

*n/a = Not applicable.

Table I-2.0-3
Ecological COPC Statistics for SWMUs 73-002, 73-004(a), and 73-006

COPC	Number of Analyses	Distribution Type	Minimum Concentration	Maximum Concentration	Mean Concentration	Standard Deviation	95% UCL	95% UCL Method
Inorganic Chemicals (mg/kg)								
Antimony	173	Nonparametric	0.061	12(U)	0.4	0.98	0.72	Chebyshev(Mean, SD)
Arsenic	190	Gamma	0.21(U)	13.2	1.93	1.55	2.12	Approximate gamma
Barium	190	Nonparametric	3.5	962	56.2	85.1	83.1	Chebyshev(Mean, SD)
Cadmium	190	Nonparametric	0.019	5.8	0.57	0.55	0.46	Chebyshev(Mean, SD)
Chromium	189	Gamma	0.574	58.6	4.64	5.62	5.21	Approximate gamma
Copper	186	Nonparametric	0.765	83.1	7.45	11.8	11.2	Chebyshev(Mean, SD)
Cyanide	88	Normal	0.0805	0.757	0.31	0.17	0.17	Student's-t
Lead	178	Nonparametric	1.63	363	24.0	43.1	38.1	Chebyshev(Mean, SD)
Mercury	189	Nonparametric	0.0031	7.9	0.082	0.59	0.27	Chebyshev(Mean, SD)
Nickel	190	Lognormal	0.52	81.6	3.74	6.45	3.86	H-UCL
Selenium	183	Nonparametric	0.15	79.9(U)	0.88	3.35	1.95	Chebyshev(Mean, SD)
Silver	179	Nonparametric	0.023	31.9	0.93	2.79	1.84	Chebyshev(Mean, SD)
Thallium	190	Nonparametric	0.0911	1.5(U)	0.14	0.14	0.18	Chebyshev(Mean, SD)
Vanadium	183	Gamma	0.54(U)	40.7	7.47	6.60	8.31	Approximate gamma
Zinc	183	Nonparametric	19.6	1250	60.8	99.7	92.9	Chebyshev(Mean, SD)
Organic Chemicals (mg/kg)								
Acenaphthene	170	n/a*	0.0297	1.44(U)	n/a	n/a	0.0367	Maximum detect
Anthracene	170	Nonparametric	0.00824	1.44(U)	0.08	0.094	0.11	Chebyshev(Mean, SD)
Aroclor-1242	170	n/a	0.0025	0.08(U)	n/a	n/a	0.0127	Maximum detect
Aroclor-1254	170	Nonparametric	0.002	0.173	0.013	0.016	0.018	Chebyshev(Mean, SD)
Aroclor-1260	170	Nonparametric	0.0019	0.073	0.011	0.011	0.015	Chebyshev(Mean, SD)
Benzo(a)anthracene	170	Nonparametric	0.0134(U)	1.44(U)	0.082	0.093	0.11	Chebyshev(Mean, SD)
Benzo(a)pyrene	170	Nonparametric	0.0148(U)	1.44(U)	0.084	0.094	0.12	Chebyshev(Mean, SD)
Benzo(b)fluoranthene	170	Nonparametric	0.021(U)	1.44(U)	0.092	0.11	0.13	Chebyshev(Mean, SD)

Table I-2.0-3 (continued)

COPC	Number of Analyses	Distribution Type	Minimum Concentration	Maximum Concentration	Mean Concentration	Standard Deviation	95% UCL	95% UCL Method
Benzo(g,h,i)perylene	170	Nonparametric	0.0162(U)	1.44(U)	0.084	0.094	0.12	Chebyshev(Mean, SD)
Benzo(k)fluoranthene	170	Nonparametric	0.0138	1.44(U)	0.08	0.094	0.11	Chebyshev(Mean, SD)
Benzoic acid	169	Nonparametric	0.043	28.9(U)	0.67	1.13	1.05	Chebyshev(Mean, SD)
Bis(2-ethylhexyl)phthalate	170	Normal	0.056	7.22(U)	0.15	0.28	0.18	Student's-t
Chlordane[alpha-]	170	Nonparametric	0.000365	0.019(U)	0.0016	0.0028	0.0025	Chebyshev(Mean, SD)
Chlordane[gamma-]	170	Nonparametric	0.000283	0.019(U)	0.0016	0.0028	0.0025	Chebyshev(Mean, SD)
Chrysene	170	Nonparametric	0.0132(U)	1.44(U)	0.087	0.096	0.12	Chebyshev(Mean, SD)
DDD	170	Nonparametric	0.00106	0.173	0.004	0.014	0.0087	Chebyshev(Mean, SD)
DDE	170	Nonparametric	0.000416	0.14	0.0058	0.015	0.011	Chebyshev(Mean, SD)
DDT	170	Nonparametric	0.000722	0.5	0.016	0.06	0.036	Chebyshev(Mean, SD)
Dieldrin	170	n/a	0.00109	0.0778(U)	n/a	n/a	0.00109	Maximum detect
Diethylphthalate	170	n/a	0.067	1.56(U)	n/a	n/a	0.16	Maximum detect
Di-n-butyl phthalate	170	Nonparametric	0.0361	14.4(U)	0.24	0.62	0.45	Chebyshev(Mean, SD)
Dinitro-2-methylphenol[4,6-]	170	n/a	0.336(U)	14.4(U)	n/a	n/a	0.41	Maximum detect
Di-n-octyl phthalate	170	n/a	0.227	14.4(U)	n/a	n/a	0.227	Maximum detect
Fluoranthene	170	Nonparametric	0.0114	1.44(U)	0.11	0.14	0.16	Chebyshev(Mean, SD)
Fluorene	170	n/a	0.0337(U)	1.44(U)	n/a	n/a	0.0351	Maximum detect
Heptachlorodibenzodioxin [1, 2,3,4,6,7,8-]	168	Nonparametric	5.54E-08(U)	0.000171	1.12E-05	2.71E-05	2.03E-05	Chebyshev(Mean, SD)
Heptachlorodibenzofuran [1,2,3,4,6,7,8-]	168	Nonparametric	3.5E-08(U)	4.72E-05	2.67E-06	6.02E-06	4.7E-06	Chebyshev(Mean, SD)
Heptachlorodibenzofuran [1,2,3,4,7,8,9-]	168	Nonparametric	3.1E-08(U)	2.67E-06	1.7E-07	3.12E-07	2.75E-07	Chebyshev(Mean, SD)
Hexachlorodibenzodioxin [1,2,3,4,7,8-]	168	Nonparametric	6.47E-08(U)	6.27E-06	3.25E-07	6.76E-07	5.53E-07	Chebyshev(Mean, SD)
Hexachlorodibenzodioxin [1,2,3,6,7,8-]	168	Nonparametric	7.16E-08(U)	1.11E-05	6.52E-07	1.41E-06	1.13E-06	Chebyshev(Mean, SD)

Table I-2.0-3 (continued)

COPC	Number of Analyses	Distribution Type	Minimum Concentration	Maximum Concentration	Mean Concentration	Standard Deviation	95% UCL	95% UCL Method
Hexachlorodibenzodioxin [1,2,3,7,8,9-]	168	Nonparametric	6.64E-08(U)	8.64E-06	5.44E-07	1.12E-06	9.21E-07	Chebyshev(Mean, SD)
Hexachlorodibenzofuran [1,2,3,4,7,8-]	168	Nonparametric	1.97E-08(U)	9.72E-06	3.77E-07	1.06E-06	7.35E-07	Chebyshev(Mean, SD)
Hexachlorodibenzofuran [1,2,3,6,7,8-]	168	Nonparametric	1.85E-08(U)	9.82E-06	3.62E-07	1.06E-06	7.2E-07	Chebyshev(Mean, SD)
Hexachlorodibenzofuran [1,2,3,7,8,9-]	168	Nonparametric	2.48E-08(U)	2.01E-06	1.15E-07	2.41E-07	1.96E-07	Chebyshev(Mean, SD)
Hexachlorodibenzofuran [2,3,4,6,7,8-]	168	Nonparametric	2.04E-08(U)	1.29E-05	4.67E-07	1.41E-06	9.42E-07	Chebyshev(Mean, SD)
Indeno(1,2,3-cd)pyrene	170	Nonparametric	0.0139(U)	1.44(U)	0.083	0.094	0.11	Chebyshev(Mean, SD)
Isopropyltoluene[4-]	54	n/a	0.00076	0.00666(U)	n/a	n/a	0.00076	Maximum detect
Methylnaphthalene[2-]	170	Nonparametric	0.00741	1.44(U)	0.08	0.092	0.11	Chebyshev(Mean, SD)
Naphthalene	170	Nonparametric	0.0242	1.44(U)	0.079	0.091	0.11	Chebyshev(Mean, SD)
Octachlorodibenzodioxin [1,2,3,4,6,7,8,9-]	171	Nonparametric	1.81E-07(U)	0.001	7.24E-05	0.000169	0.000129	Chebyshev(Mean, SD)
Octachlorodibenzofuran [1,2, 3,4,6,7,8,9-]	171	Nonparametric	9.41E-08(U)	0.0012(U)	8.53E-06	4.78E-05	2.45E-05	Chebyshev(Mean, SD)
Pentachlorodibenzodioxin [1, 2,3,7,8-]	168	Nonparametric	6.0E-08(U)	6.49E-06	2.76E-07	6.74E-07	5.03E-07	Chebyshev(Mean, SD)
Pentachlorodibenzofuran [1,2,3,7,8-]	168	Nonparametric	7.0E-08(U)	5.73E-06	2.99E-07	7.2E-07	5.41E-07	Chebyshev(Mean, SD)
Pentachlorodibenzofuran [2,3,4,7,8-]	168	Nonparametric	7.0E-08(U)	1.3E-05	5.83E-07	1.56E-06	1.11E-06	Chebyshev(Mean, SD)
Phenanthrene	170	Nonparametric	0.0138	1.44(U)	0.086	0.092	0.12	Chebyshev(Mean, SD)
Pyrene	170	Nonparametric	0.0123	1.44(U)	0.096	0.1	0.13	Chebyshev(Mean, SD)
Tetrachlorodibenzodioxin [2,3,7,8-]	176	Nonparametric	4.74E-08(U)	5.5E-05(U)	7.68E-07	5.23E-06	2.48E-06	Chebyshev(Mean, SD)
Tetrachlorodibenzofuran [2,3,7,8-]	176	Nonparametric	4.81E-08(U)	7.0E-05(U)	1.09E-06	4.41E-06	2.54E-06	Chebyshev(Mean, SD)

Table I-2.0-3 (continued)

COPC	Number of Analyses	Distribution Type	Minimum Concentration	Maximum Concentration	Mean Concentration	Standard Deviation	95% UCL	95% UCL Method
Trichlorofluoromethane	54	n/a	0.00106(U)	0.007(U)	n/a	n/a	0.007	Maximum detect
Trichloro-1,2,2-trifluoroethane[1,1,2-]	54	n/a	0.002	0.0333(U)	n/a	n/a	0.002	Maximum detect
Radionuclides (pCi/g)								
Americium-241	155	Nonparametric	-0.00102	0.303	0.014	0.03	0.025	Chebyshev(Mean, SD)
Cesium-137	64	Nonparametric	-0.00421	5.43	0.47	0.96	1.0	Chebyshev(Mean, SD)
Plutonium-238	146	Nonparametric	-1.7E-10	0.0514	0.0015	0.0077	0.0043	Chebyshev(Mean, SD)
Plutonium-239	150	Nonparametric	-3.8E-10	5.03	0.11	0.44	0.26	Chebyshev(Mean, SD)
Strontium-90	110	Nonparametric	-0.00963	0.398	0.029	0.083	0.063	Chebyshev(Mean, SD)
Tritium	4	n/a	0.025(U)	0.064	n/a	n/a	0.064	Maximum detect
Uranium-234	156	Normal	0.313	4.56	1.27	0.5	1.34	Student's-t
Uranium-235	166	Nonparametric	-0.0673	0.315	0.064	0.041	0.078	Chebyshev(Mean, SD)
Uranium-238	156	Normal	0.298	3.66	1.29	0.51	1.35	Student's-t

*n/a = Not applicable.

Table I-2.0-4
Toxicity Equivalency for Dioxins and Furans for SWMUs 73-002, 73-004(a), and 73-006

COPC	Number of Analyses	95% UCL (mg/kg)	TEF	Adjusted EPC (mg/kg)
Dioxins				
Tetrachlorodibenzodioxin[2,3,7,8-]	176	2.48E-06	1	2.48E-06
Pentachlorodibenzodioxin[1,2,3,7,8-]	168	5.03E-07	1	5.03E-07
Hexachlorodibenzodioxin[1,2,3,4,7,8-]	168	2.75E-07	0.1	2.75E-08
Hexachlorodibenzodioxin[1,2,3,6,7,8-]	168	5.53E-07	0.1	5.53E-08
Hexachlorodibenzodioxin[1,2,3,7,8,9-]	168	1.13E-06	0.1	1.13E-07
Heptachlorodibenzodioxin[1,2,3,4,6,7,8-]	168	2.03E-05	0.01	2.03E-07
Octachlorodibenzodioxin[1,2,3,4,6,7,8,9-]	171	0.000129	0.0003	3.87E-08
Furans				
Tetrachlorodibenzofuran[2,3,7,8-]	176	2.54E-06	0.1	2.54E-07
Pentachlorodibenzofuran[1,2,3,7,8-]	168	5.41E-07	0.03	1.62E-08
Pentachlorodibenzofuran[2,3,4,7,8-]	168	1.11E-06	0.3	3.33E-07
Hexachlorodibenzofuran[1,2,3,4,7,8-]	168	7.35E-07	0.1	7.35E-08
Hexachlorodibenzofuran[1,2,3,6,7,8-]	168	7.2E-07	0.1	7.2E-08
Hexachlorodibenzofuran[1,2,3,7,8,9-]	168	1.96E-07	0.1	1.96E-08
Hexachlorodibenzofuran[2,3,4,6,7,8-]	168	9.42E-07	0.1	9.42E-08
Heptachlorodibenzofuran[1,2,3,4,6,7,8-]	168	4.7E-06	0.01	4.7E-08
Heptachlorodibenzofuran[1,2,3,4,7,8,9-]	168	2.75E-07	0.01	2.75E-09
Octachlorodibenzofuran[1,2,3,4,6,7,8,9-]	171	2.45E-05	0.0003	7.35E-09
			Total	**4.3E-06**

Table I-2.0-5
Ecological Screening Levels for Terrestrial Receptors

COPC	American Kestrel (Intermediate carnivore)	American Kestrel (top carnivore)	American Robin (herbivore)	American Robin (insectivore)	American Robin (omnivore)	Deer Mouse (omnivore)	Desert Cottontail (herbivore)	Earthworm (invertebrate)	Plant	Montane Shrew (insectivore)	Red Fox (top carnivore)
Inorganic Chemicals (mg/kg)											
Antimony	na*	na	na	na	na	0.48	2.9	78	0.05	0.26	45
Arsenic	160	1100	42	18	26	32	160	6.8	18	15	810
Barium	11000	37000	820	1000	930	1800	3300	330	110	1300	41000
Beryllium	na	na	na	na	na	56	170	40	2.5	18	420
Cadmium	2	580	4.4	0.29	0.54	0.51	9.9	140	32	0.27	510
Chromium	7700	3700	1900	830	1100	1900	13000	2.3	2.4	750	30000
Cobalt	930	3500	170	96	120	400	1800	na	13	160	5400
Copper	88	1200	28	11	16	59	250	13	10	34	3500
Cyanide	0.61	1.4	0.1	0.1	0.1	340	740	na	na	310	5200
Lead	120	810	21	14	16	120	370	1700	120	72	3700
Manganese	110000	290000	4600	10000	6400	1200	1700	na	50	1300	35000
Mercury	0.082	0.28	0.07	0.013	0.022	3	22	0.05	34	1.7	46
Nickel	530	9500	530	70	120	530	12000	100	20	250	31000
Selenium	8.5	140	1.5	1.1	1.3	1.1	3	7.7	0.1	0.92	110
Silver	52	2200	30	7.2	11	77	490	na	0.05	44	13000
Thallium	6.6	75	9.2	0.9	1.6	0.068	2.8		0.1	0.032	2.8
Vanadium	84	170	8.9	6.7	7.6	480	1500	na	0.025	140	3300
Zinc	180	1400	200	27	48	290	3000	190	10	160	10000
Organic Chemicals (mg/kg)											
Acenaphthene	na	na	na	na	na	160	490	na	0.25	120	6200
Anthracene	na	na	na	na	na	310	1100	na	na	210	5800

Table I-2.0-5 (continued)

COPC	American Kestrel (Intermediate carnivore)	American Kestrel (top carnivore)	American Robin (herbivore)	American Robin (insectivore)	American Robin (omnivore)	Deer Mouse (omnivore)	Desert Cottontail (herbivore)	Earthworm (invertebrate)	Plant	Montane Shrew (insectivore)	Red Fox (top carnivore)
Aroclor-1242	0.26	1.4	1	0.041	0.079	0.76	30	na	na	0.38	16
Aroclor-1254	0.17	0.22	1.3	0.041	0.08	0.88	5.2	na	160	0.44	0.15
Aroclor-1260	3.7	4.6	46	0.88	1.7	2	3000	na	na	1	0.14
Benzo(a)anthracene	na	na	na	na	na	3.4	6.2	na	18	3	45
Benzo(a)pyrene	na	na	na	na	na	15	50	na	na	9.6	68
Benzo(b)fluoranthene	na	na	na	na	na	52	130	na	18	38	250
Benzo(g,h,i)perylene	na	na	na	na	na	47	540	na	na	24	94
Benzo(k)fluoranthene	na	na	na	na	na	100	350	na	na	62	400
Benzoic acid	na	na	na	na	na	1.3	4.2	na	na	1	350
Bis(2-ethylhexyl)phthalate	0.045	0.033	20	0.02	0.04	1.1	2700	na	na	0.59	1.2
Butylbenzylphthalate	na	na	na	na	na	160	2300	na	na	90	1900
Chlordane[alpha-]	1	1.1	19	0.28	0.55	0.54	57	na	2.2	0.27	1.4
Chlordane[gamma-]	9.2	10	22	2.3	4.2	4.3	69	na	2.2	2.2	12
Chrysene	na	na	na	na	na	3.1	6.5	na	na	2.4	46
DDE	0.062	0.055	1	0.019	0.039	8.1	680	na	na	4.1	14
DDT	1	1	24	0.3	0.6	0.68	99	na	3.7	0.34	1.4
Dieldrin	0.063	0.12	0.35	0.012	0.023	0.0088	0.33	na	10	0.0045	0.058
Di-n-butyl phthalate	0.068	0.24	0.39	0.011	0.021	370	16000	na	160	180	5000
Di-n-octyl phthalate	na	na	na	na	na	2.2	16000	na	na	1.1	16
Fluoranthene	na	na	na	na	na	38	260	38	Na	22	360
Fluorene	na	na	na	na	na	340	1100	4.1	na	250	9300
Indeno(1,2,3-cd)pyrene	na	na	na	na	na	110	590	na	na	62	270
Methylnaphthalene[2-]	na	na	na	na	na	3.8	16	na	na	2.5	130

Table I-2.0-5 (continued)

COPC	American Kestrel (Intermediate carnivore)	American Kestrel (top carnivore)	American Robin (herbivore)	American Robin (insectivore)	American Robin (omnivore)	Deer Mouse (omnivore)	Desert Cottontail (herbivore)	Earthworm (invertebrate)	Plant	Montane Shrew (insectivore)	Red Fox (top carnivore)
Naphthalene	1100	6300	37	170	61	0.34	0.45	na	1	0.96	42
Phenanthrene	na	na	na	na	na	15	59	34	na	10	290
Pyrene	na	na	na	na	na	32	110	18	na	22	360
Tetrachlorodibenzodioxin [2,3,7,8-]	na	na	na	na	na	5.80E-07	4.80E-05	5	na	2.90E-07	1.20E-06
Radionuclides (pCi/g)											
Americium-241	35000	62000	13000	4000	4000	32000	32000	44	21000	31000	26000
Cesium-137	3700	2900	4200	3800	3700	2400	2300	1700	2300	2400	680
Plutonium-238	32000	130000	8300	2000	2100	110000	120000	44	110000	92000	30000
Plutonium-239	34000	160000	8600	2100	2100	150000	170000	47	160000	110000	33000
Strontium-90	2400	1900	600	1500	930	1700	1300	1200	1300	1700	560
Tritium	630000	580000	300000	600000	440000	330000	230000	48000	36000	340000	190000
Uranium-234	120000	190000	48000	14000	14000	91000	96000	51	14000	94000	45000
Uranium-235	10000	10000	9000	6400	6400	5100	5100	55	4000	5100	4800
Uranium-238	4100	4200	3900	3400	3400	2100	2100	55	1800	2100	2000

Note: ESLs from ECORISK Database Version 2.2 (LANL 2005, 090032).

*na = Not available.

Table I-2.1-1
Minimum Ecological Screening Level Comparisons for Ecological Receptors at AOC 73-003

COPC	95% UCL	Minimum ESL*	Hazard Quotient	ESL Receptor
Inorganic Chemicals (mg/kg)				
Barium	163	110	**1.5**	Plant
Cadmium	1.75	0.27	**6.5**	Montane shrew
Cobalt	7.16	13	**0.6**	Plant
Lead	76.5	14	**5.5**	American Robin (insectivore)
Selenium	17.9	0.1	**179**	Plant
Organic Chemicals (mg/kg)				
Benzo(b)fluoranthene	0.0152	18	0.0008	Plant
DDE	0.00702	0.019	**0.37**	American Robin (insectivore)
DDT	0.103	0.3	**0.34**	American Robin (insectivore)
Fluoranthene	0.0178	22	0.0008	Montane Shrew (insectivore)
Pyrene	0.0139	18	0.0007	Earthworm (invertebrate)

Note: Bold values denote HQ exceeds 0.3, so retained as COPEC.
*ESLs from ECORISK Database Version 2.2 (LANL 2005, 090032).

Table I-2.1-2
Hazard Index Analysis for Ecological Receptors at AOC 73-003

COPEC	95% UCL (mg/kg)	Kestrel (top carnivore)	Kestrel Intermediate (carnivore)	Red Fox (top carnivore)	American Robin (omnivore)	American Robin (insectivore)	American Robin (herbivore)	Desert Cottontail Rabbit (herbivore)	Montane Shrew (insectivore)	Deer Mouse (omnivore)	Earthworm (invertebrate)	Plant
Barium	163	0.004	0.01	0.004	0.2	0.2	0.2	0.05	0.1	0.09	0.5	**1.5**
Cadmium	1.75	0.003	0.9	0.003	**3.2**	**6.0**	0.4	0.2	**6.5**	**3.4**	0.01	0.05
Cobalt	7.16	0.002	0.008	0.001	0.06	0.07	0.04	0.004	0.04	0.02	na*	0.6
Lead	76.5	0.09	0.6	0.02	**4.8**	**5.5**	**3.6**	0.2	**1.1**	0.6	0.05	0.6
Selenium	17.9	0.1	**2.1**	0.2	**13.8**	**16.3**	**11.9**	**6.0**	**19.5**	**16.3**	**2.3**	**179**
DDE	0.00702	0.1	0.1	0.0005	0.2	0.4	0.007	0.00001	0.002	0.0009	na	na
DDT	0.103	0.1	0.1	0.07	0.2	0.3	0.004	0.001	0.3	0.2	na	0.03
HI		0.4	**4**	0.3	**22**	**29**	**16**	**6**	**28**	**21**	**3**	**182**

Note: Bold denotes that HQ or HI exceeds 1.0.
*na = Not available.

Table I-2.2-1
Minimum Ecological Screening Level Comparisons for Ecological Receptors at SWMU 73-004(b)

COPC	95% UCL	Minimum ESL*	Hazard Quotient	ESL Receptor
Inorganic Chemicals (mg/kg)				
Arsenic	3.95	6.8	**0.6**	Earthworm (invertebrate)
Barium	98.4	110	**0.9**	Plant
Cadmium	0.68	0.27	**2.5**	Montane Shrew (insectivore)
Chromium	12.8	2.3	**5.6**	Earthworm (invertebrate)
Cobalt	42.7	13	**3.3**	Plant
Copper	10.7	10	**1.1**	Plant
Lead	41.3	14	**3.0**	American Robin (insectivore)
Mercury	0.18	0.013	**13.8**	American Robin (herbivore)
Selenium	12.2	0.1	**122**	Plant
Silver	7.5	0.05	**150**	Plant
Zinc	49.4	10	**4.9**	Plant
Organic Chemicals (mg/kg)				
Acenaphthene	0.172	0.25	**0.7**	Plant
Anthracene	0.12	210	0.0006	Montane Shrew (insectivore)
Aroclor-1254	0.81	0.041	**19.8**	American Robin (insectivore)
Aroclor-1260	0.57	0.14	**4.1**	Red Fox (carnivore)
Benzo(a)anthracene	0.21	3	0.07	Montane Shrew (insectivore)
Benzo(a)pyrene	0.21	9.6	0.02	Montane Shrew (insectivore)
Benzo(b)fluoranthene	0.31	18	0.02	Plant
Benzo(g,h,i)pyrene	0.11	24	0.005	Montane Shrew (insectivore)
Benzo(k)fluoranthene	0.12	62	0.002	Montane Shrew (insectivore)
Benzoic acid	0.668	1	**0.7**	Montane Shrew (insectivore)
Bis(2-ethylhexyl)phthalate	0.34	0.02	**17**	American Robin (insectivore)
Butylbenzylphthalate	0.139	90	0.002	Montane Shrew (insectivore)
Chlordane[alpha-]	0.058	0.27	0.2	Montane Shrew (insectivore)
Chlordane[gamma-]	0.059	2.2	0.03	Plant
Chrysene	0.23	2.4	0.1	Montane Shrew (insectivore)
DDE	0.083	0.019	**4.4**	American Robin (insectivore)
DDT	0.085	0.3	0.3	American Robin (insectivore)
Di-n-butyl phthalate	0.45	0.011	**40.9**	American Robin (insectivore)
Di-n-octyl phthalate	0.12	1.1	0.1	Montane Shrew (insectivore)
Fluoranthene	0.41	22	0.02	Montane Shrew (insectivore)
Fluorene	0.13	4.1	0.03	Earthworm (invertebrate)
Indeno(1,2,3-cd)pyrene	0.16	62	0.003	Montane Shrew (insectivore)
Methylnaphthalene[2-]	0.017	2.5	0.007	Montane Shrew (insectivore)
Naphthalene	0.033	0.34	0.1	Deer mouse (omnivore)
Phenanthrene	0.33	10	0.03	Montane Shrew (insectivore)
Pyrene	0.35	18	0.02	Earthworm (invertebrate)
Radionuclides (pCi/g)				
Tritium	0.1	36000	0.000003	Plant

Note: Bold values denote HQ exceeds 0.3, so retained as COPEC.
*ESLs from ECORISK Database Version 2.2 (LANL 2005, 090032).

Table I-2.2-2
Hazard Index Analysis for Ecological Receptors at SWMU 73-004(b)

COPEC	95% UCL (mg/kg)	Kestrel (top carnivore)	Kestrel Intermediate (carnivore)	Red Fox (top carnivore)	American Robin (omnivore)	American Robin (insectivore)	American Robin (herbivore)	Desert Cottontail Rabbit (herbivore)	Montane Shrew (insectivore)	Deer Mouse (omnivore)	Earthworm (invertebrate)	Plant
Arsenic	3.95	0.004	0.02	0.005	0.2	0.2	0.09	0.02	0.3	0.1	0.6	0.2
Barium	98.4	0.003	0.009	0.002	0.1	0.1	0.1	0.03	0.08	0.05	0.3	0.9
Cadmium	0.68	0.001	0.3	0.001	**1.3**	**2.3**	0.2	0.07	**2.5**	**1.3**	0.005	0.02
Chromium	12.8	0.003	0.002	0.0004	0.01	0.02	0.007	0.001	0.02	0.007	**5.6**	**5.3**
Cobalt	42.7	0.01	0.05	0.008	0.4	0.4	0.3	0.02	0.3	0.1	na*	**3.3**
Copper	10.7	0.009	0.1	0.003	0.7	1.0	0.4	0.04	0.3	0.2	0.8	**1.1**
Lead	41.3	0.05	0.3	0.01	**2.6**	**3.0**	**2.0**	0.1	0.6	0.3	0.02	0.3
Mercury	0.18	0.6	**2.2**	0.004	**8.2**	**13.8**	**2.6**	0.008	0.1	0.06	3.6	0.005
Selenium	12.2	0.007	**1.4**	0.1	**9.4**	**11.1**	**8.1**	**4.1**	**13.3**	**11.1**	**1.6**	**122**
Silver	7.5	0.003	0.1	0.0006	0.7	1.0	0.3	0.02	0.2	0.1	na	**150**
Zinc	49.4	0.04	0.3	0.005	1.0	**1.8**	0.2	0.02	0.3	0.2	0.3	**4.9**
Acenaphthene	0.172	na	na	0.00003	na	na	na	0.0004	0.001	0.001	na	0.5
Aroclor-1254	0.81	**3.7**	**4.8**	**5.4**	**10.1**	**19.8**	0.6	0.2	**1.8**	0.9	na	0.006
Aroclor-1260	0.57	0.1	0.2	**4.1**	0.3	0.6	0.01	0.0002	0.6	0.3	na	na
Benzoic acid	0.668	na	na	0.002	na	na	na	0.2	0.7	0.5	na	na
Bis(2-ethylhexyl)phthalate	0.34	**10.3**	**7.6**	0.3	**8.5**	**17**	0.02	0.0001	0.6	0.3	na	na
DDE	0.083	**1.5**	**1.3**	0.006	**2.1**	**4.4**	0.08	0.0001	0.02	0.01	na	na
Di-n-butyl phthalate	0.45	**1.9**	**6.6**	0.00005	**21.4**	**40.9**	**1.2**	0.00003	0.003	0.001	na	0.003
HI		**18**	**25**	**10**	**67**	**117**	**16**	**5**	**22**	**16**	**13**	**289**

Note: Bold denotes that HQ or HI exceeds 1.0.

*na = Not available.

Table I-2.3-1
Minimum Ecological Screening Level Comparisons for
Ecological Receptors at SWMUs 73-002, 73-004(a), and 73-006

COPC	95% UCL	Minimum ESL[a]	Hazard Quotient	ESL Receptor
Inorganic Chemicals (mg/kg)				
Antimony	0.72	0.05	**14.4**	Plant
Arsenic	2.12	6.8	**0.31**	Earthworm (invertebrate)
Barium	83.1	110	**0.8**	Plant
Cadmium	0.46	0.27	**1.7**	Montane Shrew (insectivore)
Chromium	5.21	2.3	**2.3**	Earthworm (invertebrate)
Copper	11.2	10	**1.1**	Plant
Cyanide	0.17	0.1	**1.7**	American Robin (insectivore)
Lead	38.1	14	**2.7**	American Robin (insectivore)
Mercury	0.27	0.013	**20.8**	American Robin (herbivore)
Nickel	3.86	20	0.2	Plant
Selenium	1.95	0.1	**19.5**	Plant
Silver	1.84	0.05	**36.8**	Plant
Thallium	0.18	0.032	**5.6**	Montane Shrew (insectivore)
Vanadium	8.31	0.025	**332.4**	Plant
Zinc	92.9	10	**9.3**	Plant
Organic Chemicals (mg/kg)				
Acenaphthene	0.0367	0.25	0.1	Plant
Anthracene	0.11	210	0.00005	Montane Shrew (insectivore)
Aroclor-1242	0.0127	0.041	**0.31**	American Robin (insectivore)
Aroclor-1254	0.018	0.041	**0.4**	American Robin (insectivore)
Aroclor-1260	0.015	0.14	0.1	Red Fox (carnivore)
Benzo(a)anthracene	0.11	3	0.04	Montane Shrew (insectivore)
Benzo(a)pyrene	0.12	9.6	0.01	Montane Shrew (insectivore)
Benzo(b)fluoranthene	0.13	18	0.007	Plant
Benzo(g,h,i)perylene	0.12	24	0.005	Montane Shrew (insectivore)
Benzo(k)fluoranthene	0.11	62	0.002	Montane Shrew (insectivore)
Benzoic acid	1.05	1	**1.1**	Montane Shrew (insectivore)
Bis(2-ethylhexyl)phthalate	0.18	0.02	**9**	American Robin (insectivore)
Chlordane[alpha-]	0.0025	0.27	0.009	Montane Shrew (insectivore)
Chlordane[gamma-]	0.0025	2.2	0.001	Plant
Chrysene	0.12	2.4	0.05	Montane Shrew (insectivore)
DDE	0.011	0.019	**0.6**	American Robin (insectivore)
DDT	0.036	0.3	0.1	American Robin (insectivore)
Dieldrin	0.00109	0.0045	0.2	Montane Shrew (insectivore)
Di-n-butyl phthalate	0.45	0.011	**40.9**	American Robin (insectivore)

Table I-2.3-1 (continued)

COPC	95% UCL	Minimum ESL[a]	Hazard Quotient	ESL Receptor
Di-n-octyl phthalate	0.227	1.1	0.2	Montane Shrew (insectivore)
Fluoranthene	0.16	22	0.007	Montane Shrew (insectivore)
Fluorene	0.0351	4.1	0.009	Earthworm (invertebrate)
Indeno(1,2,3-cd)pyrene	0.11	62	0.002	Montane Shrew (insectivore)
Methylnaphthalene[2-]	0.11	2.5	0.04	Montane Shrew (insectivore)
Naphthalene	0.11	0.34	**0.32**	Deer mouse (omnivore)
Phenanthrene	0.12	10	0.01	Montane Shrew (insectivore)
Pyrene	0.13	18	0.007	Earthworm (invertebrate)
Tetrachlorodibenzodioxin[2,3,7,8-][b]	4.3E-06	2.90E-07	**14.8**	Montane Shrew (insectivore)
Radionuclides (pCi/g)				
Americium-241	0.025	44	0.00006	Earthworm (invertebrate)
Cesium-137	1.0	680	0.001	Red Fox (carnivore)
Plutonium-238	0.0043	44	0.0001	Earthworm (invertebrate)
Plutonium-239	0.26	47	0.006	Earthworm (invertebrate)
Strontium-90	0.063	560	0.0001	Red Fox (carnivore)
Tritium	0.064	36000	0.000002	Plant
Uranium-234	1.34	51	0.03	Earthworm (invertebrate)
Uranium-235	0.078	55	0.001	Earthworm (invertebrate)
Uranium-238	1.35	55	0.02	Earthworm (invertebrate)

Note: Bold values denote HQ exceeds 0.3, so retained as COPEC.

[a] ESLs from ECORISK Database Version 2.2 (LANL 2005, 090032).

[b] TCDD as represented by the toxicity equivalent concentration from Table I-2.0-4.

Table I-2.3-2
Hazard Index Analysis for Ecological Receptors at SWMUs 73-002, 73-004(a), and 73-006

COPEC	95% UCL (mg/kg)	Kestrel (top carnivore)	Kestrel Intermediate (carnivore)	Red Fox (top carnivore)	American Robin (omnivore)	American Robin (insectivore)	American Robin (herbivore)	Desert Cottontail Rabbit (herbivore)	Montane Shrew (insectivore)	Deer Mouse (omnivore)	Earthworm (invertebrate)	Plant
Antimony	0.72	na*	na	0.02	na	na	na	0.2	**2.8**	**1.5**	0.009	**14.4**
Arsenic	2.12	0.002	0.01	0.003	0.08	0.1	0.05	0.01	0.1	0.07	0.3	0.1
Barium	83.1	0.002	0.008	0.002	0.09	0.08	0.1	0.03	0.06	0.05	0.3	0.8
Cadmium	0.46	0.0008	0.2	0.0009	0.9	**1.6**	0.1	0.05	**1.7**	0.9	0.003	0.01
Chromium	5.21	0.001	0.0007	0.0002	0.005	0.006	0.003	0.0004	0.007	0.003	**2.3**	**2.2**
Copper	11.2	0.009	0.1	0.003	0.7	1.0	0.4	0.04	0.3	0.2	0.9	**1.1**
Cyanide	0.17	0.1	0.3	0.00003	**1.7**	**1.7**	**1.7**	0.0002	0.0005	0.0005	na	na
Lead	38.1	0.05	0.3	0.01	**2.4**	**2.7**	**1.8**	0.1	0.5	0.3	0.3	0.5
Mercury	0.27	1.0	**3.3**	0.006	**12.3**	**20.8**	**3.9**	0.01	0.2	0.09	**5.4**	0.008
Selenium	1.95	0.01	0.2	0.02	**1.5**	**1.8**	**1.3**	0.7	**2.1**	**1.8**	0.3	**19.5**
Silver	1.84	0.0008	0.04	0.0001	0.2	0.3	0.06	0.004	0.04	0.02	na	**36.8**
Thallium	0.18	0.002	0.03	0.06	0.1	0.2	0.02	0.06	**5.6**	**2.6**	na	**1.8**
Vanadium	8.31	0.05	0.1	0.003	**1.1**	**1.2**	0.9	0.006	0.06	0.02	na	**332**
Zinc	92.9	0.07	0.5	0.0009	**1.9**	**3.4**	0.5	0.03	0.6	0.3	0.5	**9.3**
Aroclor-1242	0.0127	0.009	0.05	0.0008	0.2	0.3	0.01	0.0004	0.03	0.02	na	na
Aroclor-1254	0.018	0.08	0.1	0.1	0.2	0.4	0.01	0.003	0.04	0.02	na	0.0001
Bis(2-ethylhexyl)phthalate	0.18	na	0.2	na	na	na	na	0.00007	0.3	0.2	na	na
DDE	0.011	0.2	0.2	0.0008	0.3	0.6	0.02	0.00002	0.003	0.001	na	na
Di-n-butyl phthalate	0.45	**1.9**	**6.6**	0.00009	**21.4**	**40.9**	**1.2**	0.00003	0.003	0.001	na	0.003
Naphthalene	0.11	0.00002	0.0001	0.003	0.002	0.0006	0.003	0.2	0.1	0.3	na	0.11
Tetrachlorodibenzodioxin[2,3,7,8-]	4.3E-06	na	na	**3.6**	na	na	na	0.09	**14.8**	**7.4**	0.0000009	**na**
HI		**4**	**12**	**4**	**45**	**77**	**12**	**2**	**29**	**16**	**10**	**419**

Note: Bold denotes that HQ or HI exceeds 1.0.
*na = Not available.

Table I-3.4-1
Comparison of 95% UCLs to Background Concentrations for AOC 73-003

COPEC	95% UCL (mg/kg)	Soil Background Concentrations [a] (mg/kg)	Tuff Background Concentrations [a] (mg/kg)
Barium	163	21–410	1.4–51.6
Cadmium	1.75	0.2–2.6	0.1–1.5
Cobalt	7.16	1–9.5	3.14[b]
Lead	76.5	2–28	1.6–15.5
Selenium	17.9	0.1–1.7	0.1–0.105

[a] From LANL 1998, 059730.

[b] No background data set; value is the BV.

Table I-3.4-2
Comparison of 95% UCLs to Background Concentrations for SWMU 73-004(b)

COPEC	95% UCL (mg/kg)	Soil Background Concentrations [a] (mg/kg)	Tuff Background Concentrations [a] (mg/kg)
Arsenic	3.95	0.3–9.3	0.25–5
Barium	98.4	21–410	1.4–51.6
Cadmium	0.68	0.2–2.6	0.1–1.5
Chromium	12.8	1.9–36.5	0.25–13
Cobalt	42.7	1–9.5	3.14[b]
Copper	10.7	0.25–16	0.25–6.2
Lead	41.3	2–28	1.6–15.5
Mercury	0.18	0.05–0.1	0.1[b]
Selenium	12.2	0.1–1.7	0.1–0.105
Silver	7.5	1.0[b]	0.2–1.9
Zinc	49.4	14–75.5	5.5–65.6

[a] From LANL 1998, 059730.

[b] No background data set; value is the BV.

Table I-3.4-3
Comparison of 95% UCLs to Background Concentrations for SWMUs 73-002, 73-004(a), and 73-006

COPEC	95% UCL (mg/kg)	Soil Background Concentrations [a] (mg/kg)	Tuff Background Concentrations [a] (mg/kg)
Antimony	0.72	0.1–1	0.05–0.4
Arsenic	2.12	0.3–9.3	0.25–5
Barium	83.1	21–410	1.4–51.6
Cadmium	0.46	0.2–2.6	0.1–1.5
Chromium	5.21	1.9–36.5	0.25–13
Copper	11.2	0.25–16	0.25–6.2
Cyanide	0.17	0.5 [b]	0.5 [b]
Lead	38.1	2–28	1.6–15.5
Mercury	0.27	0.05–0.1	0.1 [b]
Selenium	1.95	0.1–1.7	0.1–0.105
Silver	1.84	1.0 [b]	0.2–1.9
Thallium	0.18	0.063–1	0.05–1.7
Vanadium	8.31	4–56.5	0.25–21
Zinc	92.9	14–75.5	5.5–65.6

[a] From LANL 1998, 059730.

[b] No background data set; value is the BV.

Table I-3.5-1
PAUFs for Ecological Receptors at AOC 73-003

Receptor	Home Range [a] (ha)	Population Area [a] (ha)	PAUF [b]
American robin	0.42	16.8	0.002
American kestrel	106	4240	0.000007
Deer mouse	0.077	3.0	0.01
Desert cottontail	3.1	124	0.0002
Montane shrew	0.39	15.6	0.002
Red fox	1038	41,520	0.0000007
Mexican spotted owl [c]	366	n/a [d]	0.00008

[a] Values from EPA 1993, 059384.

[b] PAUF is calculated as the area of the AOC (approximately 0.03 ha) divided by the population area. No PAUF is calculated for earthworms or plants.

[c] Value for Mexican spotted owl is the AUF based on individual HR.

[d] n/a = Not applicable.

Table I-3.5-2
PAUFs for Ecological Receptors at SWMU 73-004(b)

Receptor	Home Range[a] (ha)	Population Area[a] (ha)	PAUF[b]
American robin	0.42	16.8	0.003
American kestrel	106	4240	0.00001
Deer mouse	0.077	3.0	0.02
Desert cottontail	3.1	124	0.0004
Montane shrew	0.39	15.6	0.003
Red fox	1038	41,520	0.000001
Mexican spotted owl[c]	366	n/a[d]	0.0001

[a] Values from EPA 1993, 059384.

[b] PAUF is calculated as the area of the SWMU (approximately 0.05 ha) divided by the population area. No PAUF is calculated for earthworms or plants.

[c] Value for Mexican spotted owl is the AUF based on individual HR.

[d] n/a = Not applicable.

Table I-3.5-3
PAUFs for Ecological Receptors at SWMUs 73-002, 73-004(a), and 73-006

Receptor	Home Range[a] (ha)	Population Area[a] (ha)	PAUF[b]
American robin	0.42	16.8	0.04
American kestrel	106	4240	0.0001
Deer mouse	0.077	3.0	0.2
Desert cottontail	3.1	124	0.005
Montane shrew	0.39	15.6	0.04
Red fox	1038	41,520	0.00001
Mexican spotted owl[c]	366	n/a[d]	0.008[c]

[a] Values from EPA 1993, 059384.

[b] PAUF is calculated as the total area of the SWMUs (approximately 0.6 ha) divided by the population area. No PAUF is calculated for earthworms or plants.

[c] Value for Mexican spotted owl is the AUF based on individual HR.

[d] n/a = Not applicable.

Table I-3.6-1
Adjusted Hazard Index Analysis for Ecological Receptors at AOC 73-003

COPEC	95% UCL (mg/kg)	Kestrel (top carnivore)	Kestrel Intermediate (carnivore)	Red Fox (top carnivore)	American Robin (omnivore)	American Robin (insectivore)	American Robin (herbivore)	Desert Cottontail Rabbit (herbivore)	Montane Shrew (insectivore)	Deer Mouse (omnivore)	Earthworm (invertebrate)	Plant
Lead	76.5	0.09	0.6	0.02	**4.8**	**5.5**	**3.6**	0.2	**1.1**	0.6	0.05	0.6
Selenium	17.9	0.1	**2.1**	0.2	**13.8**	**16.3**	**11.9**	**6.0**	**19.5**	**16.3**	**2.3**	**179**
DDE	0.00702	0.1	0.1	0.0005	0.2	0.4	0.007	0.00001	0.002	0.0009	na[a]	na
DDT	0.103	0.1	0.1	0.07	0.2	0.3	0.004	0.001	0.3	0.2	na	0.03
HI		0.4	**3**	0.3	**19**	**23**	**16**	**6**	**21**	**17**	**2**	**180**
PAUF-Adjusted HI[b]		0.000003	0.00002	0.0000002	0.04	0.05	0.03	0.001	0.04	0.2	na	na

Note: Bold denotes that HQ or HI exceeds 1.0.

[a] na = Not available.

[b] The adjusted HIs are derived by multiplying the new HIs by the PAUFs for a particular receptor.

Table I-3.6-2
Adjusted Hazard Index Analysis for Ecological Receptors at SWMU 73-004(b)

COPEC	95% UCL (mg/kg)	Kestrel (top carnivore)	Kestrel Intermediate (carnivore)	Red Fox (top carnivore)	American Robin (omnivore)	American Robin (insectivore)	American Robin (herbivore)	Desert Cottontail Rabbit (herbivore)	Montane Shrew (insectivore)	Deer Mouse (omnivore)	Earthworm (invertebrate)	Plant
Cobalt	42.7	0.01	0.05	0.008	0.4	0.4	0.3	0.02	0.3	0.1	na[a]	**3.3**
Lead	41.3	0.05	0.3	0.01	**2.6**	**3.0**	**2.0**	0.1	0.6	0.3	0.02	0.3
Selenium	12.2	0.007	**1.4**	0.1	**9.4**	**11.1**	**8.1**	**4.1**	**13.3**	**11.1**	**1.6**	**122**
Silver	7.5	0.003	0.1	0.0006	0.7	1.0	0.3	0.02	0.2	0.1	na	**150**
Acenaphthene	0.172	na	na	0.00003	na	na	na	0.0004	0.001	0.001	na	0.5
Aroclor-1254	0.81	**3.7**	**4.8**	**5.4**	**10.1**	**19.8**	0.6	0.2	**1.8**	0.9	na	0.006
Aroclor-1260	0.57	0.1	0.2	**4.1**	0.3	0.6	0.01	0.0002	0.6	0.3	na	na
Benzoic acid	0.668	na	na	0.002	na	na	na	0.2	0.7	0.5	na	na
Bis(2-ethylhexyl)phthalate	0.34	**10.3**	**7.6**	0.3	**8.5**	**17**	0.02	0.0001	0.6	0.3	na	na
DDE	0.083	**1.5**	**1.3**	0.006	**2.1**	**4.4**	0.08	0.0001	0.02	0.01	na	na
Di-n-butyl phthalate	0.45	**1.9**	**6.6**	0.00005	**21.4**	**40.9**	**1.2**	0.00003	0.003	0.001	na	0.003
HI		**18**	**22**	**10**	**56**	**98**	**13**	**5**	**18**	**14**	**2**	**276**
PAUF-Adjusted HI[b]		0.0002	0.0002	0.00001	0.2	0.3	0.04	0.002	0.05	0.3	na	na

Note: Bold denotes that HQ or HI exceeds 1.0.

[a] na = Not available.

[b] The adjusted HIs are derived by multiplying the new HIs by the PAUFs for a particular receptor.

Table I-3.6-3
Adjusted Hazard Index Analysis for Ecological Receptors at SWMUs 73-002, 73-004(a), and 73-006

COPEC	95% UCL (mg/kg)	Kestrel (top carnivore)	Kestrel Intermediate (carnivore)	Red Fox (top carnivore)	American Robin (omnivore)	American Robin (insectivore)	American Robin (herbivore)	Desert Cottontail Rabbit (herbivore)	Montane Shrew (insectivore)	Deer Mouse (omnivore)	Earthworm (invertebrate)	Plant
Aroclor-1242	0.0127	0.009	0.05	0.0008	0.2	0.3	0.01	0.0004	0.03	0.02	na[a]	na
Aroclor-1254	0.018	0.08	0.1	0.1	0.2	0.4	0.01	0.003	0.04	0.02	na	0.0001
Bis(2-ethylhexyl)phthalate	0.18	na	0.2	na	na	na	na	0.00007	0.3	0.2	na	na
DDE	0.011	0.2	0.2	0.0008	0.3	0.6	0.02	0.00002	0.003	0.001	na	na
Di-n-butyl phthalate	0.45	**1.9**	**6.6**	0.00009	**21.4**	**40.9**	**1.2**	0.00003	0.003	0.001	na	0.003
Naphthalene	0.11	0.00002	0.0001	0.003	0.002	0.0006	0.003	0.2	0.1	0.3	na	0.11
Tetrachlorodibenzodioxin[2,3,7,8-][b]	4.3E-06	na	na	**3.6**	na	na	na	0.09	**14.8**	**7.4**	0.0000009	**na**
HI		**2**	**7**	**4**	**22**	**42**	**1**	0.3	**15**	**8**	0.0000009	0.1
PAUF-Adjusted HI[b]		0.0002	0.0007	0.00004	0.9	**2**	0.04	0.002	0.6	**2**	na	na

Note: Bold denotes that HQ or HI exceeds 1.0.

[a] na = Not available.

[b] The adjusted HIs are derived by multiplying the new HIs by the PAUFs for a particular receptor.

Attachment I-1

Ecological Scoping Checklist

I1-1.0 PART A—SCOPING MEETING DOCUMENTATION

Site ID	Consolidated Unit 73-002-99
Form of site releases (solid, liquid, vapor). Describe all relevant known or suspected mechanisms of release (spills, dumping, material disposal, outfall, explosive testing, etc.) and describe potential areas of release. Reference locations on a map as appropriate.	Consolidated unit 73-002-99 consists of SWMUs 73-002, 73-004(a and b), and 73-006 and AOC 73-003. SWMU 73-002 is an incinerator/surface disposal area located slightly west and north of the Los Alamos County Airport terminal. The incinerator began operations in 1947, but because of problems with incomplete combustion, operated only for a short period of time. The incinerator was used to destroy municipal trash from the townsite in addition to classified documents from LANL. Associated with the incinerator was an ash disposal area located north of the building, immediately below the south rim of Pueblo Canyon. A sizeable deposit of noncombustibles, primarily composed of rusted tin cans, was located on a ledge below the top of the canyon. From this ledge, the ash deposit extended approximately 140 ft to the top of the canyon at a slope of approximately 40 degrees. The width of the ash deposit was narrowest at the top (approximately 65 ft) and fanned out, becoming widest at the ledge (approximately 160 ft). Below the ledge, accumulations of ash and other noncombustibles continued downslope in an irregular manner for some distance but terminated at least 700 ft from the bottom of the canyon. SWMU 73-004(a) is a former concrete septic tank that received sanitary waste from toilets and showers in the incinerator building (building 73-2). The tank was located about 90 ft northwest of the steam-cleaning facility and discharged to Pueblo Canyon through a 6-in. VCP. This tank was removed in 1996. SWMU 73-004(b) was a concrete septic tank that discharged wash water from the steam-cleaning plant through a 6-in. VCP to an outfall in Pueblo Canyon. SWMU 73-006 consists of the two drainlines that discharged to Pueblo Canyon from the incinerator building (building 73-2). The west drainline, constructed of 5-in.-diameter cast-iron pipe, originated at two floor drains, one on the west side of the charging floor and the other on the west side of the stoking floor. The west drainline was removed in 1997. The east drainline, also constructed of 5-in.-diameter cast-iron pipe, originated at similar concrete-plugged drains located on the east side of the charging and stoking floors. The drains are presumed to have handled wash water and to have operated concurrently with the incinerator. The drainlines discharged directly onto the ash disposal area, SWMU 73-002. AOC 73-003 is a former steam-cleaning facility for garbage trucks, cans, and dumpsters that were used to collect municipal waste from the Los Alamos townsite. The facility was constructed of concrete block on a concrete slab, with overall dimensions of 50 ft x 30 ft. The facility consisted of a drive-through bay for cleaning garbage trucks, a fully enclosed and automated system for cleaning garbage cans, an area for unloading garbage cans to be cleaned, a heater room, and an office. A 50-ft x 20-ft gravel storage yard, used to store garbage cans, was attached to the west side of the facility. Wash water entered one of three 14-in.-diameter floor drains that connected to the SWMU 73-004(b) septic tank and was discharged through a 6-in. VCP to Pueblo Canyon. The steam cleaning facility was used from 1949 to 1970 and was demolished in 1971. The site is now overlain by the asphalt parking lot for the Los Alamos County Airport.

List of Primary Impacted Media **(Indicate all that apply.)**	**Surface soil – X** **Surface water/sediment –** **Subsurface – X** **Groundwater –** **Other, explain –**
Vegetation class based on GIS vegetation coverage **(Indicate all that apply.)**	**Water** – **Bare Ground/Unvegetated** – X – at site of recent remediation activity **Spruce/fir/aspen/mixed conifer** – **Ponderosa pine –** X – surrounding area on slope of canyon **Piñon juniper/juniper savannah** – **Grassland/shrubland** – **Developed** – X – south of site, part of LA County Airport **Burned –**
Is T&E Habitat Present? **If applicable, list species known or suspected of using the site for breeding or foraging.**	Consolidated Unit is within inactive TA-73 and does not have any potential T&E Habitat
Provide list, of Neighboring/ Contiguous/ Upgradient sites, includes a brief summary of COPECs and the form of releases for relevant sites and reference a map as appropriate. **(Use this information to evaluate the need to aggregate sites for screening.)**	No other neighboring sites impact these sites.
Surface Water Erosion Potential Information **Summarize information from SOP 2.01, including the total score and the run-off subscore (maximum of 46); terminal point of surface water transport; slope; and surface water run-on sources.**	SWMU 73-002 has a total erosion control matrix score of 56 indicating a moderate to high potential for erosion. This score includes a score of 5 for runoff and a score of 7 for structural run-on. SWMU 73-004(a) has a total erosion control matrix score of 3.6 indicating a low potential for erosion. This score includes zero for both run-off and run-on. SWMU 73-004(b) has a total erosion control matrix score of 10.6 indicating a low potential for erosion. This score includes zero for run-off and 7 from structural run-on. SWMU 73-006 has a total erosion control matrix score of 56 indicating a moderate to high potential for erosion. This score includes a score of 5 for runoff and a score of 7 for structural run-on. AOC 73-003 has a total erosion control matrix score of 10.6 indicating a low potential for erosion. This score includes zero for run-off and 7 from structural run-on. The terminal point of surface water transport (none observed) is the floor of Pueblo Canyon. All erosion continues downslope (approx 40% slope). Surface water run-on sources include above ground storm drains from the paved airport parking lot which enter site on east and west edges.

I1-2.0 PART B—SITE VISIT DOCUMENTATION

Site ID	73-002-99
Date of Site Visit	6/7/2007
Site Visit Conducted by	Shannon Smith

Receptor Information:

Estimate cover	**Relative vegetative cover (high, medium, low, none)** = low on remediation site, high in surrounding area **Relative wetland cover (high, medium, low, none)** = none **Relative structures/asphalt, etc., cover (high, medium, low, none)** = high on mesa top, none on canyon slope
Field notes on the GIS vegetation class to assist in verifying the Arcview information	Recent remediation activities have left the area around the incinerator and ash pile mostly bare of vegetative cover. Surrounding canyon slope is well vegetated. AOC 73-003 and part of SWMU 73-004(b) are beneath the asphalt parking lot. The outfall for 73-004(b) is on the canyon slope, which is well vegetated.
Are ecological receptors present at the site? **(yes/no/uncertain)** **Describe the general types of receptors present at the site (terrestrial and aquatic), and make notes on the quality of habitat present at the site.**	Yes. Terrestrial receptors in the area. Primarily small rodents and birds as well as plants and insects. Much of the ash pile area is devoid of vegetative cover due to recent activities. Habitat is not of very high quality at ash pile site but will be revegetated. Habitat of surrounding canyon slope is of very good quality. Habitat for sites under the asphalt is low and inaccessible for the most part.

Contaminant Transport Information:

Surface water transport **Field notes on the erosion potential, including a discussion of the terminal point of surface water transport (if applicable).**	Surface water runoff following storms and snowmelt. Erosion potential is moderate to high for areas situated on the canyon edge and canyon slope. Erosion potential is low for mesa top sites.
Are there any off-site transport pathways (surface water, air, or groundwater)? **(yes/no/uncertain)** **Provide explanation**	Yes. Site is heavily impacted from structural run-on from asphalt parking area located south of site.

Ecological Effects Information:

Physical Disturbance **(Provide list of major types of disturbances, including erosion and construction activities, review historical aerial photos where appropriate.)**	Recent activities have disturbed site. DOE conducted site cleanup and removed ash pile debris down to exposed bedrock of canyon wall. BMPs in the form of base course berms, straw wattles, and sandbags have been placed at edge of mesa on east side of site to control runoff. Erosion control blankets have also been installed over canyon shelf and straw placed on south face of canyon within ash pile area. Area will be revegetated.
Are there obvious ecological effects? **(yes/no/uncertain)** **Provide explanation and apparent cause (e.g., contamination, physical disturbance, other).**	Yes. Recent activities have left the ash pile area with very little vegetative cover and may have possibly increased erosion potential. However, BMPs are in place to mitigate this potential. Surrounding canyon slope has excellent vegetative cover and has no observed ecological impacts.

No Exposure/Transport Pathways:

If there are no complete exposure pathways to ecological receptors onsite and no transport pathways to off-site receptors, the remainder of the checklist should not be completed. Stop here and provide additional explanation/justification for proposing an ecological No Further Action recommendation (if needed). At a minimum, the potential for future transport should include the likelihood that future construction activities could make contamination more available for exposure or transport. Not applicable

Adequacy of Site Characterization:

Do existing or proposed data provide information on the nature and extent of contamination? **(yes/no/uncertain)** **Provide explanation** **(Consider if the maximum value was captured by existing sample data.)**	Yes. Recent activities have removed much of the contaminated media and associated data have defined nature and extent of contamination.
Do existing or proposed data for the site address potential transport pathways of site contamination? **(yes/no/uncertain)** **Provide explanation** **(Consider if other sites should be aggregated to characterize potential ecological risk.)**	Yes. Recent activities have removed much of the contaminated media and BMPs are in place.

Additional Field Notes:

Provide additional field notes on the site setting and potential ecological receptors.

I1-3.0 PART C—ECOLOGICAL PATHWAYS CONCEPTUAL EXPOSURE MODEL

Provide answers to Questions A to V to develop the Ecological Pathways Conceptual Exposure Model

Question A:

Could soil contaminants reach receptors through vapors?

- **Volatility of the hazardous substance (volatile chemicals generally have Henry's Law constant >10^{-5} atm-m^3/mol and molecular weight <200 g/mol).**

Answer (likely/unlikely/uncertain): Unlikely

Provide explanation: VOCs are not prevalent and where detected are at very low concentrations.

Question B:

Could the soil contaminants reach receptors through fugitive dust carried in air?

- **Soil contamination would have to be on the actual surface of the soil to become available for dust.**
- **In the case of dust exposures to burrowing animals, the contamination would have to occur in the depth interval where these burrows occur.**

Answer (likely/unlikely/uncertain): Unlikely

Provide explanation: Remediation activities removed most of the surface contamination to bedrock. Other contamination is subsurface, which is mostly below burrow depths, in tuff, and not subject to disturbance by air.

Question C:

Can contaminated soil be transported to aquatic ecological communities (use SOP 2.01 run-off score and terminal point of surface water runoff to help answer this question)?

- **If the SOP 2.01 run-off score* for each SWMU and/or AOC included in the site is equal to zero, this suggests that erosion at the site is not a transport pathway. (* note that the runoff score is not the entire erosion potential score, rather it is a subtotal of this score with a maximum value of 46 points).**
- **If erosion is a transport pathway, evaluate the terminal point to see if aquatic receptors could be affected by contamination from this site.**

Answer (likely/unlikely/uncertain): Unlikely

Provide explanation: Erosion potential is moderate to high on the canyon slope and low on the mesa top. Most of the contaminated soil has been removed and BMPs are in place.

Question D:

Is contaminated groundwater potentially available to biological receptors through seeps or springs or shallow groundwater?

Known or suspected presence of contaminants in groundwater.

- **The potential for contaminants to migrate through groundwater and discharge into habitats and/or surface waters.**
- **Contaminants may be taken up by terrestrial and rooted aquatic plants whose roots are in contact with groundwater present within the root zone.**
- **Terrestrial wildlife receptors generally will not contact groundwater unless it is discharged to the surface.**

Answer (likely/unlikely/uncertain): Unlikely

Provide explanation: No seeps or springs are present.

Question E:

Is infiltration/percolation from contaminated subsurface material a viable transport and exposure pathway?

- **The potential for contaminants to migrate to groundwater.**
- **The potential for contaminants to migrate through groundwater and discharge into habitats and/or surface waters.**
- **Contaminants may be taken up by terrestrial and rooted aquatic plants whose roots are in contact with groundwater present within the root zone.**
- **Terrestrial wildlife receptors generally will not contact groundwater unless it is discharged to the surface.**

Answer (likely/unlikely/uncertain): Unlikely

Provide explanation: Unlikely. Depth to groundwater is 1000 ft or more and no hydraulic driver is present.

Question F:

Might erosion or mass wasting events be a potential release mechanism for contaminants from subsurface materials or perched aquifers to the surface?

- **This question is only applicable to release sites located on or near the mesa edge.**
- **Consider the erodability of surficial material and the geologic processes of canyon/mesa edges.**

Answer (likely/unlikely/uncertain): Unlikely

Provide explanation: Although the parts of Consolidate Unit 73-002-99 located on/near/downslope of the mesa edge the contaminated media have been removed. The canyon slope is stable and well vegetated with moderate to high erosion potential.

Question G:

Could airborne contaminants interact with receptors through the respiration of vapors?

- **Contaminants must be present as volatiles in the air.**
- **Consider the importance of the inhalation of vapors for burrowing animals.**
- **Foliar uptake of vapors is typically not a significant exposure pathway**.

Provide quantification of exposure pathway (0=no pathway, 1=unlikely pathway, 2=minor pathway, 3=major pathway):

Terrestrial Plants: 1

Terrestrial Animals: 1

Provide explanation: Contamination is subsurface and VOCs were detected infrequently and at low concentrations.

Question H:

Could airborne contaminants interact with plants through the deposition of particulates or with animals through the inhalation of fugitive dust?

- **Contaminants must be present as particulates in the air or as dust for this exposure pathway to be complete.**
- **Exposure through the inhalation of fugitive dust is particularly applicable to ground-dwelling species that would be exposed to dust disturbed by their foraging or burrowing activities or by wind movement**.

Provide quantification of exposure pathway (0=no pathway, 1=unlikely pathway, 2=minor pathway, 3=major pathway):

Terrestrial Plants: 1

Terrestrial Animals: 1

Provide explanation: Remediation activities removed most of the surface contamination to bedrock. Other contamination is subsurface, which is below burrow depths, in tuff, and not subject to disturbance by air.

Question I:

Could contaminants interact with plants through root uptake or rain splash from surficial soils?

- **Contaminants in bulk soil may partition into soil solution, making them available to roots.**
- **Exposure of terrestrial plants to contaminants present in particulates deposited on leaf and stem surfaces by rain striking contaminated soils (i.e., rain splash).**

Provide quantification of exposure pathway (0=no pathway, 1=unlikely pathway, 2=minor pathway, 3=major pathway):

Terrestrial Plants: 2

Provide explanation: Most contamination has been removed from the surface. Remaining contamination is subsurface but some surface and near surface COPECs remains.

Question J:

Could contaminants interact with receptors through food-web transport from surficial soils?

- **The chemicals may bioaccumulate in animals.**
- **Animals may ingest contaminated food items.**

Provide quantification of exposure pathway (0=no pathway, 1=unlikely pathway, 2=minor pathway, 3=major pathway):

Terrestrial Animals: 2

Provide explanation: Most contamination has been removed from the surface. Remaining contamination is subsurface but some surface and near surface COPECs, which can bioaccumulate, remains at low concentrations and/or isolated locations.

Question K:

Could contaminants interact with receptors through the incidental ingestion of surficial soils?

- **Incidental ingestion of contaminated soil could occur while animals grub for food resident in the soil, feed on plant matter covered with contaminated soil, or while grooming themselves clean of soil.**

Provide quantification of exposure pathway (0=no pathway, 1=unlikely pathway, 2=minor pathway, 3=major pathway):

Terrestrial Animals: 2

Provide explanation: Most contamination has been removed from the surface. Remaining contamination is subsurface but some surface and near surface COPECs remains at low concentrations and/or isolated locations.

Question L:

Could contaminants interact with receptors through dermal contact with surficial soils?

- **Significant exposure through dermal contact would generally be limited to organic contaminants that are lipophilic and can cross epidermal barriers.**

Provide quantification of exposure pathway (0=no pathway, 1=unlikely pathway, 2=minor pathway, 3=major pathway):

Terrestrial Animals: 2

Provide explanation: Most contamination has been removed from the surface. Remaining contamination is subsurface but some surface and near surface COPECs, which are lipophilic, remains at low concentrations and/or isolated locations.

Question M:

Could contaminants interact with plants or animals through external irradiation?

- **External irradiation effects are most relevant for gamma-emitting radionuclides.**
- **Burial of contamination attenuates radiological exposure.**

Provide quantification of exposure pathway (0=no pathway, 1=unlikely pathway, 2=minor pathway, 3=major pathway):

Terrestrial Plants: 1

Terrestrial Animals: 1

Provide explanation: Cesium-137 detected infrequently at levels that reflect fallout.

Question N:

Could contaminants interact with plants through direct uptake from water and sediment or sediment rain splash?

- **Contaminants may be taken up by terrestrial plants whose roots are in contact with surface waters.**
- **Terrestrial plants may be exposed to particulates deposited on leaf and stem surfaces by rain striking contaminated sediments (i.e., rain splash) in an area that is only periodically inundated with water.**
- **Contaminants in sediment may partition into soil solution, making them available to roots.**

Provide quantification of exposure pathway (0=no pathway, 1=unlikely pathway, 2=minor pathway, 3=major pathway):

Terrestrial Plants: 0

Provide explanation: No aquatic water habitat present at site or in canyon below.

Question O:

Could contaminants interact with receptors through food-web transport from water and sediment?

- **The chemicals may bioconcentrate in food items.**
- **Animals may ingest contaminated food items.**

Provide quantification of exposure pathway (0=no pathway, 1=unlikely pathway, 2=minor pathway, 3=major pathway):

Terrestrial Animals: 0

Provide explanation: No aquatic water habitat present at site or in canyon below.

Question P:

Could contaminants interact with receptors through the ingestion of water and suspended sediments?

- **If sediments are present in an area that is only periodically inundated with water, terrestrial receptors may incidentally ingest sediments.**
- **Terrestrial receptors may ingest water-borne contaminants if contaminated surface waters are used as a drinking water source.**

Provide quantification of exposure pathway (0=no pathway, 1=unlikely pathway, 2=minor pathway, 3=major pathway):

Terrestrial Animals: 0

Provide explanation: No aquatic water habitat present at site or in canyon below.

Question Q:

Could contaminants interact with receptors through dermal contact with water and sediment?

- **If sediments are present in an area that is only periodically inundated with water, terrestrial species may be dermally exposed during dry periods.**
- **Terrestrial organisms may be dermally exposed to water-borne contaminants as a result of wading or swimming in contaminated waters.**

Provide quantification of exposure pathway (0=no pathway, 1=unlikely pathway, 2=minor pathway, 3=major pathway):

Terrestrial Animals: 0

Provide explanation: No aquatic water habitat present at site or in canyon below.

Question R:

Could suspended or sediment-based contaminants interact with plants or animals through external irradiation?

- **External irradiation effects are most relevant for gamma-emitting radionuclides.**
- **Burial of contamination attenuates radiological exposure.**

Provide quantification of exposure pathway (0=no pathway, 1=unlikely pathway, 2=minor pathway, 3=major pathway):

Terrestrial Plants: 0

Terrestrial Animals: 0

Provide explanation: No aquatic water habitat present at site or in canyon below.

Question S:

Could contaminants bioconcentrate in free-floating aquatic, attached aquatic plants, or emergent vegetation?

- **Aquatic plants are in direct contact with water.**
- **Contaminants in sediment may partition into pore water, making them available to submerged roots.**

Provide quantification of exposure pathway (0=no pathway, 1=unlikely pathway, 2=minor pathway, 3=major pathway):

Aquatic Plants/Emergent Vegetation: 0

Provide explanation: No aquatic water habitat present at site or in canyon below.

Question T:

Could contaminants bioconcentrate in sedimentary or water-column organisms?

- **Aquatic receptors may actively or incidentally ingest sediment while foraging.**
- **Aquatic receptors may be directly exposed to contaminated sediments or may be exposed to contaminants through osmotic exchange, respiration, or ventilation of sediment pore waters.**
- **Aquatic receptors may be exposed through osmotic exchange, respiration, or ventilation of surface waters.**

Provide quantification of exposure pathway (0=no pathway, 1=unlikely pathway, 2=minor pathway, 3=major pathway):

Aquatic Animals: 0

Provide explanation: No aquatic water habitat present at site or in canyon below.

Question U:

Could contaminants bioaccumulate in sedimentary or water column organisms?

- **Lipophilic organic contaminants and some metals may concentrate in an organism's tissues.**
- **Ingestion of contaminated food items may result in contaminant bioaccumulation through the food web.**

Provide quantification of exposure pathway (0=no pathway, 1=unlikely pathway, 2=minor pathway, 3=major pathway):

Aquatic Animals: 0

Provide explanation: No aquatic water habitat present at site or in canyon below.

Question V:

Could contaminants interact with aquatic plants or animals through external irradiation?

- **External irradiation effects are most relevant for gamma-emitting radionuclides.**
- **The water column acts to absorb radiation; therefore, external irradiation is typically more important for sediment dwelling organisms.**

Provide quantification of exposure pathway (0=no pathway, 1=unlikely pathway, 2=minor pathway, 3=major pathway):

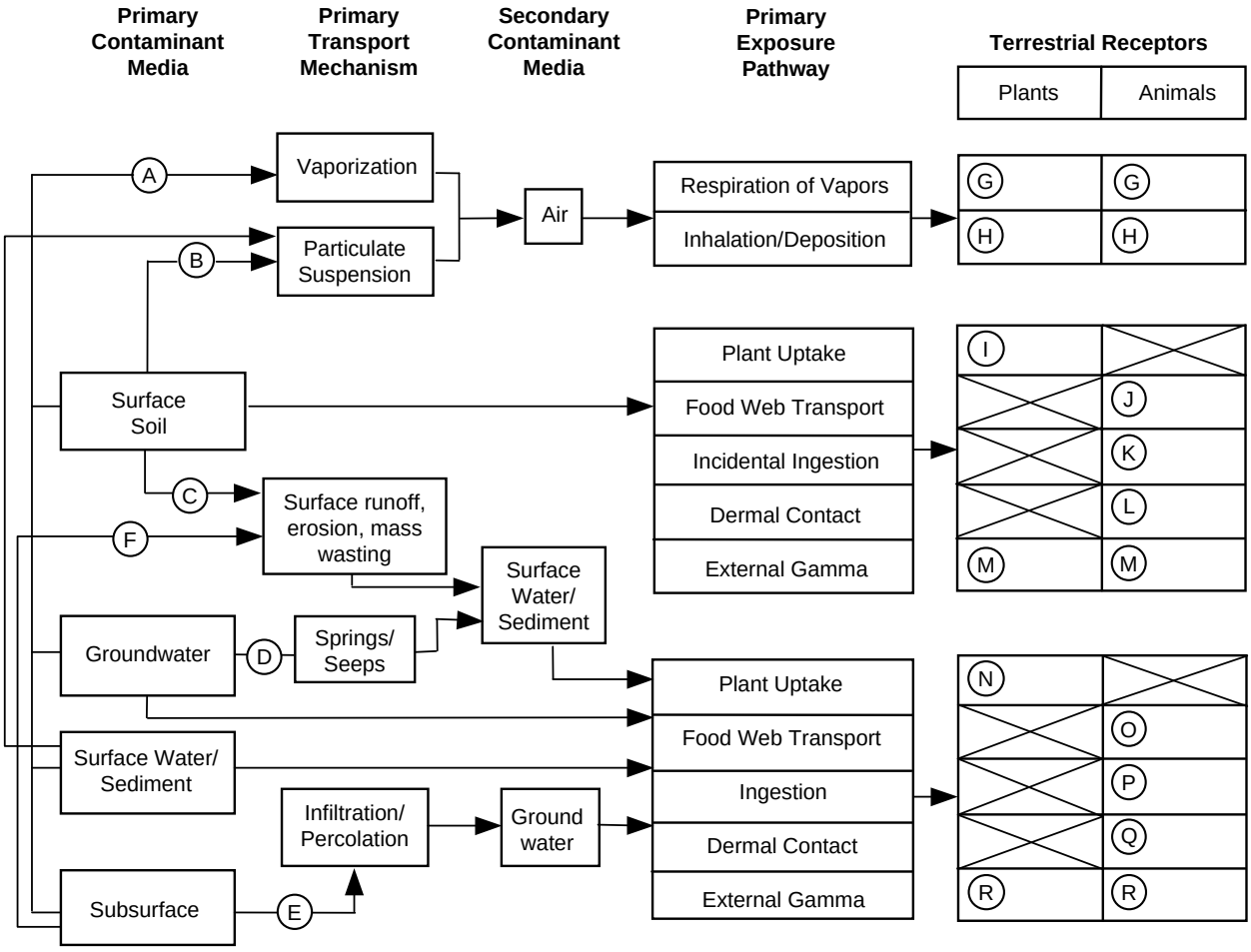
Aquatic Plants: 0

Aquatic Animals: 0

Provide explanation: No aquatic water habitat present at site or in canyon below.

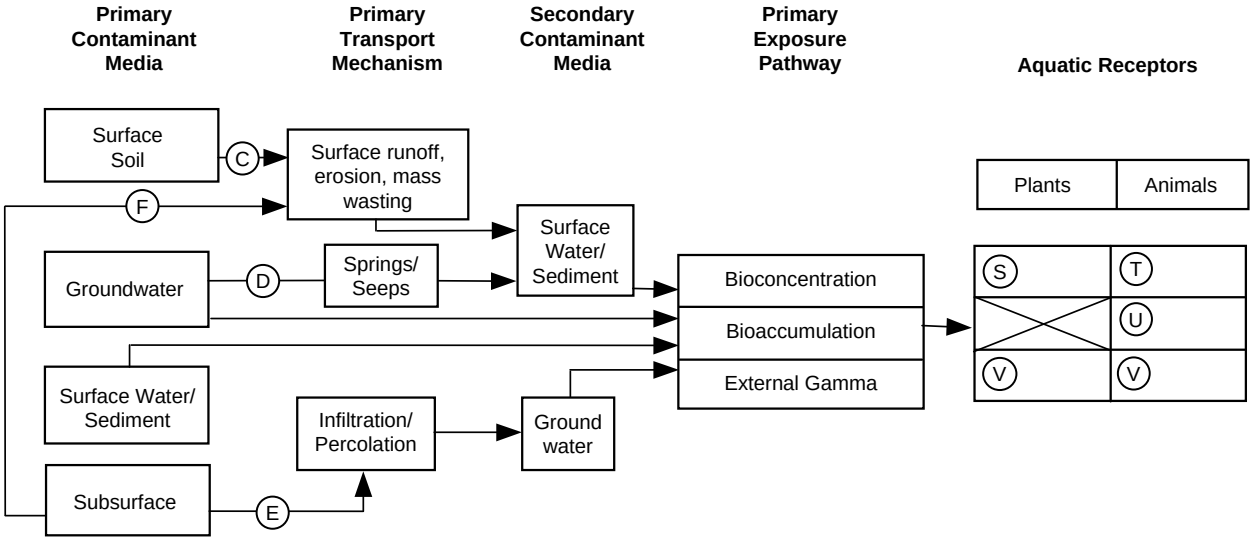
Ecological Scoping Checklist
Terrestrial Receptors
Ecological Pathways Conceptual Exposure Model

NOTE:
Letters in circles refer to questions on the Scoping Checklist



Ecological Scoping Checklist
Aquatic Receptors
Ecological Pathways Conceptual Exposure Model

NOTE:
Letters in circles refer to questions on the Scoping Checklist



Signatures and certifications:

Checklist completed by (provide name, organization and phone number):

Name (printed):	Shannon Smith
Name (signature):	
Organization:	ERSS-GS
Phone number:	665-8057
Date completed:	**6-15-07**

Verification by another party (provide name, organization and phone number):

Name (printed):	**Richard Mirenda**
Name (signature):	
Organization:	**ERSS-GS**
Phone number:	**665-6953**