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Date: April 18, 1996
Refer to: EM/ER:96-210

Mr. David Neleigh
U.S. Environmental Protection Agency
Region 6, 6PD-N
1445 Ross Ave, Suite 1200
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SUBJECT: SUBMITTAL OF THE RESOURCE CONSERVATION AND RECOVERY ACT FACILITY INVESTIGATION (RFI) REPORT FOR POTENTIAL RELEASE SITES (PRSs) IN TECHNICAL AREA (TA) 10

Dear Mr. Neleigh:

Enclosed are two copies of the Los Alamos National Laboratory's RFI Report concerning PRSs 10-002(a,b), 10-003(a-o), 10-004(a,b), 10-005, and 10-007 in TA-10. The report documents the sampling results for hazardous constituents at these PRSs. Jim Piatt of the New Mexico Surface Water Bureau has been included on the distribution of this report. The Surface Water Bureau will be reviewing the sampling results for surface water concerns.

Please ask your office to contact Garry Allen at (505) 667-6080 or Bonnie Koch at (505) 665-7202, if you have any questions.

Sincerely,

Jorg Jansen, Program Manager
Environmental Restoration

Sincerely,

Theodore J. Taylor, Program Manager
Los Alamos Area Office

JJ/TT/bp

Enclosure: Two copies of the RFI Report for PRSs at TA-10
Certification

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APR 1996
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RFI Report for Potential Release Sites

10-002(a-b)
10-003(a-o)
10-004(a-b)
10-005
10-007

TA-10 Subsurface

Field Unit 1

Environmental Restoration Project

April 1996

A Department of Energy
Environmental Cleanup Program

Los Alamos
NATIONAL LABORATORY

LA-UR-96-1284

EXECUTIVE SUMMARY

This report presents the results of the Phase I Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) at Technical Area (TA) 10, Potential Release Sites (PRSs) 10-002(a-b), 10-003(a-o), 10-004(a-b), 10-005, and 10-007 at Los Alamos National Laboratory (LANL). Included in this report are the data assessment and analysis approach used in this investigation, and the site-specific results, conclusions, and recommendations regarding RCRA constituents for the PRSs listed above. Radiological constituents, although not regulated by RCRA, were also addressed in this investigation. The results for radiological constituents will be discussed in an addendum to this report.

TA-10, also referred to as Bayo Site, was located in Bayo Canyon between Kwage Mesa to the south and Otowi Mesa to the north. TA-10 was used from 1943 to 1961 as a firing site to conduct experiments using high explosives in conjunction with nuclear weapons research. The site consisted of firing pads, control buildings, battery buildings, a radiochemistry laboratory, subsurface disposal systems, and other associated structures. All of these structures were removed during decontamination and decommissioning of the site. TA-10 was released to Los Alamos County in 1967 and remains under Department of Energy (DOE) administrative control.

The specific area under investigation for this report is the Subsurface Aggregate, which includes all areas at TA-10 where subsurface contamination is a concern. The PRSs in the Subsurface Aggregate are located near the former radiochemistry laboratory, and include PRSs 10-002(a-b), 10-003(a-o), 10-004(a-b), 10-005, and 10-007. The list of chemicals of potential concern (COPCs) for these PRSs includes target analyte list metals, high explosives, semivolatile organic compounds, volatile organic compounds, total uranium, isotopic uranium, and strontium-90. The discussion for radionuclides will be included in an addendum to this report.

The primary objective of the TA-10 Subsurface Aggregate Phase I investigation was to characterize the nature, concentrations, and lateral and vertical extent of potential subsurface contamination related to historical activities at the site. The investigation was conducted from May to November 1994 and included geodetic surveys, radiological surveys, geophysical surveys, borehole drilling, and subsurface sampling.

A total of 93 boreholes were drilled and sampled. Boreholes were organized into 12 four-armed drilling arrays, each of which consisted of between five and ten boreholes. The arrays were generally centered on former structure locations or areas known or suspected to be contaminated

based the results of previous investigations. Boreholes were advanced to a minimum depth of 50 ft below ground surface. A minimum of four soil samples were collected from each borehole for laboratory analysis of selected radiological and nonradiological constituents. Soil samples were also collected at 5-ft intervals for gross radioactivity screening at the mobile radiological analytical laboratory and screening of selected nonradiological constituents at the mobile chemistry analytical laboratory. Based on field screening and mobile laboratory analytical data, arrays were advanced laterally to adequately bound the zones of contamination.

For the purpose of data analyses and discussion, the PRSs of the Subsurface Aggregate are considered as six distinct investigation areas.

- PRS 10-002(a) consists of a former solid waste disposal pit (TA-10-44) for the former radiochemistry laboratory (TA-10-1).
- PRS 10-002(b) consists of another former solid waste disposal pit (TA-10-48) for the former radiochemistry laboratory (TA-10-1).
- The Central Area consists of the former radiochemistry laboratory liquid waste disposal complex [PRSs 10-003(a-o)] as well as the building debris landfill (PRS 10-007) created during the 1963 decontamination and decommissioning of TA-10.
- PRS 10-004(a) consists of a former sanitary septic tank and overflow pit (TA-10-40) that served the former personnel building (TA-10-21).
- PRS 10-004(b) consists of a former sanitary septic tank (TA-10-38) that served the former radiochemistry laboratory (TA-10-1).
- PRS 10-005 consists of an open surface disposal pit formerly used to contain shot debris swept from TA-10 firing sites and adjacent areas.

No RCRA constituents were retained as COPCs at any of the TA-10 Subsurface Aggregate investigation areas. Based on the results of the Phase I RFI, PRSs 10-002(a-b), 10-003(a-o), 10-004(a-b), 10-005, and 10-007 are recommended for removal from the Hazardous and Solid Waste Amendments (HSWA) Module of LANL's RCRA operating permit. This recommendation is based on LANL's No Further Action Criteria Policy, criterion 4, which states that the PRS has been characterized or remediated in accordance with current applicable state or federal

regulations, and available data indicate that contaminants of concern are either not present or are present in concentrations that pose an acceptable level of risk. A Class III permit modification will be requested to remove PRSs 10-002(a-b), 10-003(a-o), 10-004(a-b), 10-005, and 10-007 from the HSWA Module of LANL's RCRA operating permit.

TABLE ES-1
SUMMARY OF PROPOSED ACTIONS

PRS[a]	HSWA[b]	PROPOSED ACTION		RATIONALE	SECTION NUMBER
		NFA CRITERIA[c]	FURTHER ACTION		
10-002(a)	X	4		COPCs[d] present below SALs[e]	5.1
10-002(b)	X	4		COPCs present below SALs	5.2
10-003(a)	X	4		COPCs present below SALs	5.3
10-003(b)	X	4		COPCs present below SALs	5.3
10-003(c)	X	4		COPCs present below SALs	5.3
10-003(d)	X	4		COPCs present below SALs	5.3
10-003(e)	X	4		COPCs present below SALs	5.3
10-003(f)	X	4		COPCs present below SALs	5.3
10-003(g)	X	4		COPCs present below SALs	5.3
10-003(h)	X	4		COPCs present below SALs	5.3
10-003(i)	X	4		COPCs present below SALs	5.3
10-003(j)	X	4		COPCs present below SALs	5.3
10-003(k)	X	4		COPCs present below SALs	5.3
10-003(l)	X	4		COPCs present below SALs	5.3
10-003(m)	X	4		COPCs present below SALs	5.3
10-003(n)	X	4		COPCs present below SALs	5.3
10-003(o)	X	4		COPCs present below SALs	5.3
10-004(a)	X	4		COPCs present below SALs	5.4
10-004(b)	X	4		COPCs present below SALs	5.5
10-005	X	4		COPCs present below SALs	5.6
10-007	X	4		COPCs present below SALs	5.3

[a] PRS = Potential release site.
[b] HSWA = PRS is included on the Hazardous and Solid Waste Ammendment Module of Los Alamos National Laboratory's Resource Conservation and Recovery Act operating permit
[c] NFA criteria = Criteria under which the PRS was recommended for no further action.
[d] COPCs = Chemicals of potential concern.
[e] SALs = Screening action levels.

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1.0 INTRODUCTION

This report presents the results of the Phase I Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) at former Technical Area (TA) 10, Potential Release Sites (PRSs) 10-002(a-b), 10-003(a-o), 10-004(a-b), 10-005, and 10-007 at Los Alamos National Laboratory (LANL). Included in this report are the data assessment and analysis approach used in this investigation, and the site-specific results, conclusions, and recommendations regarding RCRA constituents for the PRSs listed above. Radiological constituents, although not regulated by RCRA, were also addressed in this investigation. The results for radiological constituents will be discussed in an addendum to this report.

1.1 General Site History

TA-10, also referred to as Bayo Site, was located in Bayo Canyon between Kwage Mesa to the south and Otowi Mesa to the north (Figs. 1.1-1 and 1.1-2). TA-10 was used from 1943 to 1961 as a firing site to conduct experiments using high explosives in conjunction with nuclear weapons research. The site consisted of firing pads, control buildings, battery buildings, a radiochemistry laboratory, subsurface disposal systems, and other associated structures.

Experiments conducted at TA-10 involved assemblies containing conventional high explosives and components made from depleted or natural uranium. The assemblies were loaded with a lanthanum-140 source of several hundred to several thousand curies for blast diagnostics. The lanthanum-140, which has a half-life 40.3 hours, was contaminated with a small amount of strontium-90, which has a half-life 28.8 years. The explosives detonations at TA-10 resulted in dispersion of radioactive materials, including uranium, lanthanum-140, and strontium-90, in the forms of aerosols and solid debris.

Decontamination and decommissioning activities at TA-10 began in 1960 with the demolition and burning of several buildings. Explosives testing ceased in 1961. Site-wide decommissioning of both firing sites and the radiochemistry laboratory and associated structures was completed in 1963 (LANL 1992, 0783). TA-10 was released to Los Alamos County in 1967 and remains under Department of Energy (DOE) administrative control. Portions of Bayo Canyon are currently open to the public for recreational use.

The specific area under investigation for this report is the Subsurface Aggregate, which includes all areas at TA-10 where subsurface contamination is a concern. The PRSs in the Subsurface Aggregate are located near the radiochemistry laboratory and include PRSs 10-002(a-b), 10-003(a-o), 10-004(a-b), 10-005, and 10-007.

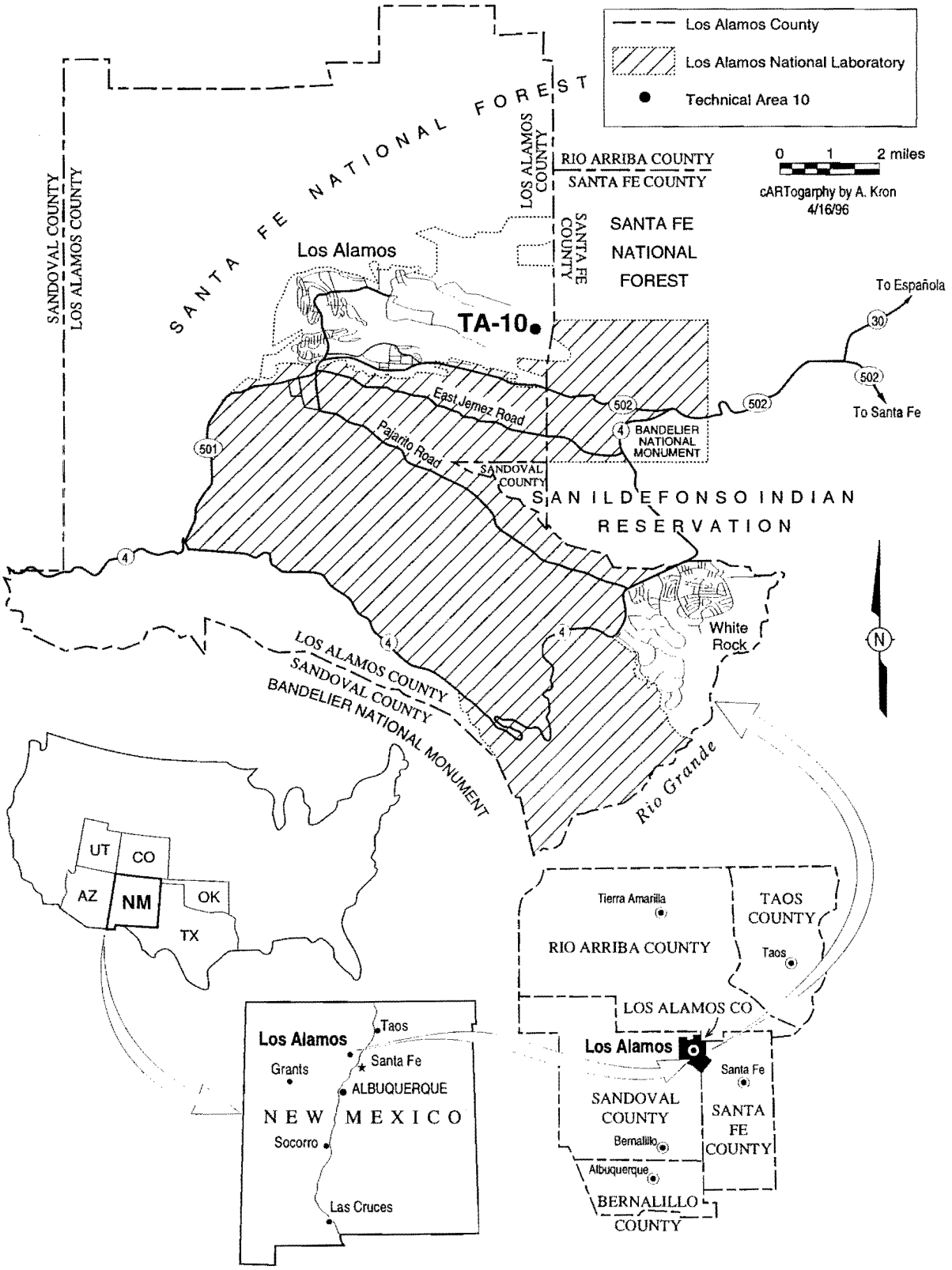


Fig. 1.1-1 Location map of TA-10 within Los Alamos National Laboratory, Los Alamos County, New Mexico.

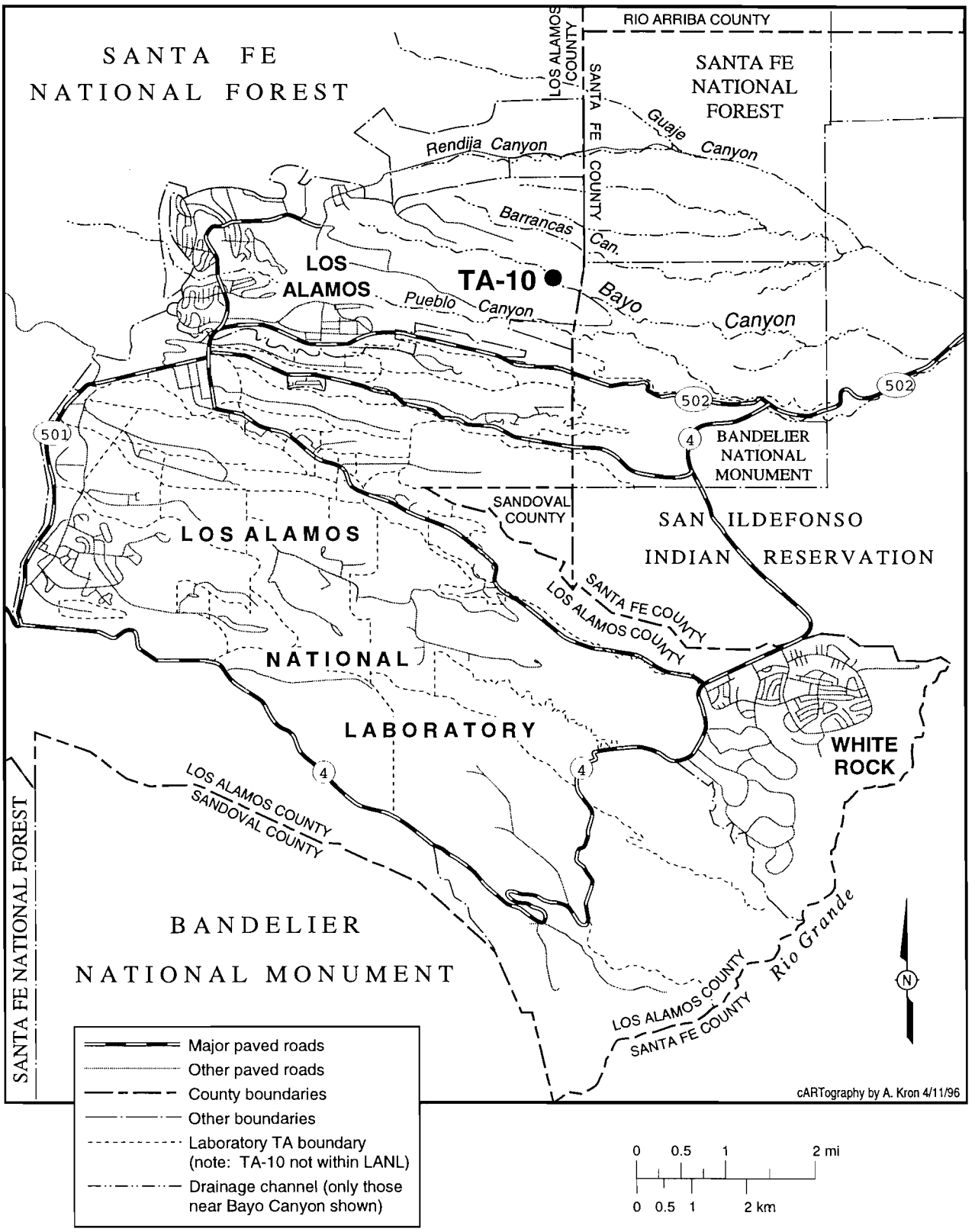


Fig. 1.1-2 Location of TA-10 with respect to Laboratory and surrounding land holdings.

For the purpose of data analyses and discussion, the PRSs of the Subsurface Aggregate are considered as six distinct investigation areas (Fig. 1.1-3).

- PRS 10-002(a) consists of a former solid waste disposal pit (TA-10-44) for the radiochemistry laboratory (TA-10-1).
- PRS 10-002(b) consists of another former solid waste disposal pit (TA-10-48) for the radiochemistry laboratory (TA-10-1).
- The Central Area consists of the radiochemistry laboratory liquid waste disposal complex [PRSs 10-003(a-o)] as well as the building debris landfill (PRS 10-007) created during the 1963 decontamination and decommissioning.
- PRS 10-004(a) consists of a sanitary septic tank and overflow pit (TA-10-40) that served the personnel building (TA-10-21).
- PRS 10-004(b) consists of a sanitary septic tank (TA-10-38) that served the radiochemistry laboratory (TA-10-1).
- PRS 10-005 consists of an open surface disposal pit used to contain shot debris swept from TA-10 firing sites and adjacent areas.

No previous investigations for RCRA constituents were conducted at this site. Therefore, based on historical information and knowledge of process, the list of chemicals of potential concern (COPCs) includes target analyte list (TAL) metals, beryllium, mercury, high explosives, semivolatile organic compounds (SVOCs), and volatile organic compounds (VOCs). Because radionuclides were associated with former Laboratory processes at this site and previous investigations have shown radionuclides to be present, total uranium, isotopic uranium, and strontium-90 were also included as COPCs in this investigation. The discussion and results for radionuclides will be discussed in an addendum to this report.

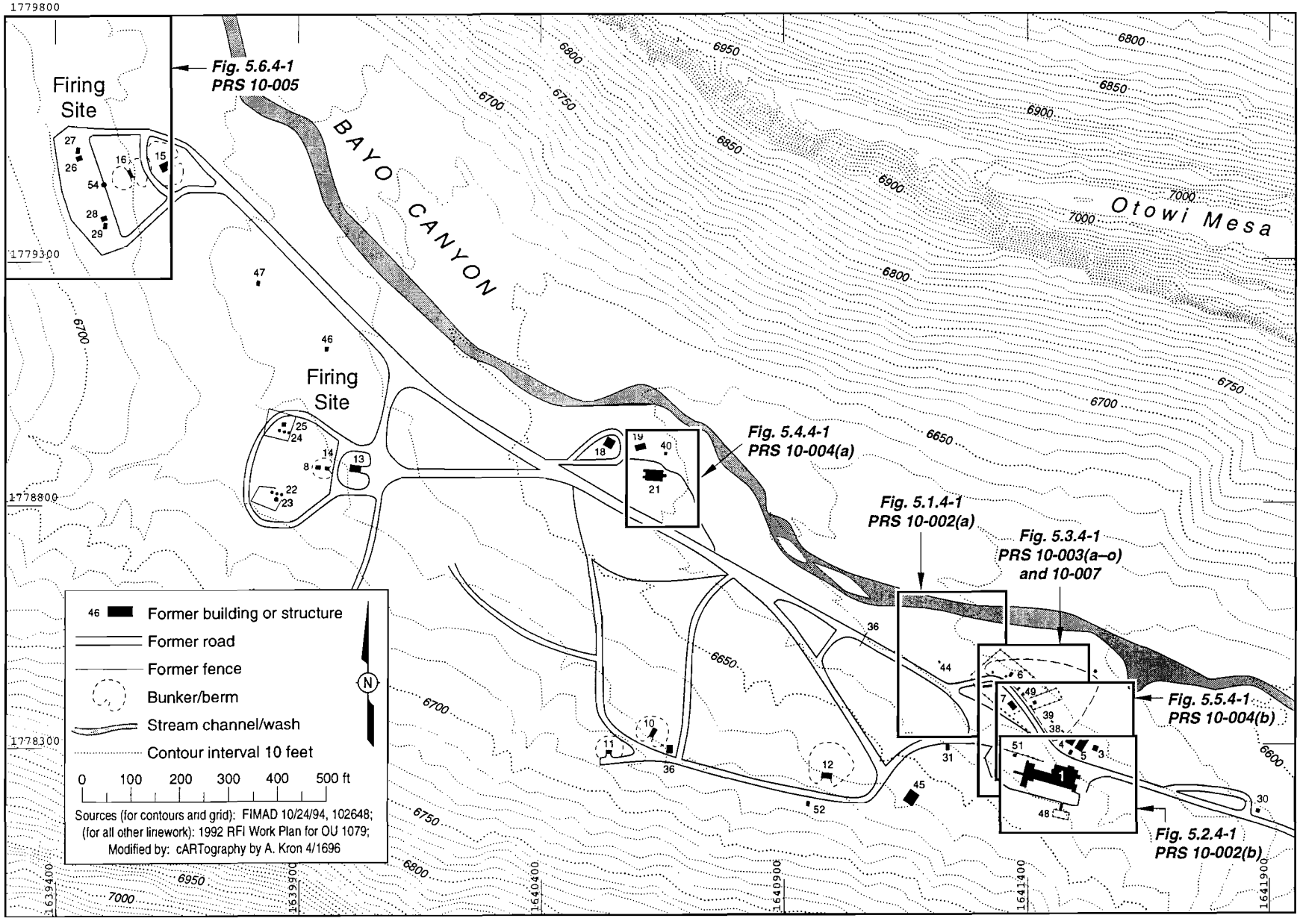


Fig. 1.1-3 Index map of investigation areas within the TA-10 Subsurface Aggregate.

1.2 RFI Overview

The primary objective of the TA-10 Subsurface Aggregate Phase I investigation was to characterize the nature, concentrations, and lateral and vertical extent of potential subsurface contamination related to historical activities at the site.

The RFI Work Plan for Operable Unit (OU) 1079 describes the conceptual exposure model for the TA-10 Subsurface Disposal Aggregate (LANL 1992, 0783). The model describes the potential sources of chemicals, potential migration pathways for chemicals released from the source, and subsequent human and biota exposure pathways. The conceptual model serves as the basis for the proposed field investigations.

1.3 Field Activities

The Phase I investigation of the TA-10 Subsurface Disposal Aggregate was conducted from May to November 1994. The investigation included geodetic surveys, radiological surveys, geophysical surveys, drilling, and subsurface sampling.

1.3.1 Geodetic Survey

A geodetic survey was conducted to identify the locations of former buildings and structures associated with TA-10 operations. All points were recorded in the New Mexico State Planar Coordinate System.

1.3.2 Radiological Surveys

A radiological survey was conducted by LANL's Environmental Safety and Health group (ESH-1) personnel for health and safety purposes because the site was a suspected radiological site. The initial survey was conducted at the site before drilling operations began. The ground surface and vegetation in the areas in and around the drilling arrays and support areas were surveyed with an Eberline™ ESP-1/HP-260 for the presence of beta and gamma radiation. Elevated radioactivity was detected in the surface soils and chamisa plants near drilling arrays 1 and 2 in the western portion of the Central Area. The area of these elevated readings is cordoned off with temporary fencing, and appropriate control signs are posted.

To assess the presence of residual surface contamination associated with drilling activities, a second radiological survey was conducted once sampling activities were completed. No additional surface contamination was detected during the second radiological survey.

1.3.3 Geophysical Survey

A geophysical survey was conducted to assess the precise location of PRS 10-005, a surface disposal pit. The objective of this survey was to locate the pit by surveying for metallic debris using a magnetometer. No large, metallic anomalies were detected in the subsurface during the survey. Therefore, PRS 10-005 could not be precisely located using geophysical techniques, and surface features were used to estimate the location of this PRS.

1.3.4 Drilling and Subsurface Sampling

Sampling activities during the TA-10 Subsurface Aggregate investigation included borehole drilling and subsurface sampling. All boreholes were drilled using Failing™ F-10 drill rigs with 8.25-in. outside diameter and 4-in. inside diameter hollow-stem augers. Continuous subsurface core samples were collected as the augers were advanced using 3.125-in. outside diameter, 5-ft long, stainless steel, split-barrel samplers retrieved on a wireline system.

A total of 93 boreholes were drilled and sampled. Boreholes were organized into 12 four-armed drilling arrays, each consisting of between 5 and 10 boreholes. The arrays were generally centered on former structure locations or areas known or suspected to be contaminated based on the results of previous investigations. Some of the drilling arrays were oriented according to the expected distribution of subsurface contaminants and others were oriented in the four cardinal directions. Borehole spacing within each array ranged from 5 to 15 ft. Sampling arrays are shown on Figs. 5.1.4-1, 5.2.4-1, 5.3.4-1, 5.4.4-1, 5.5.4-1, and 5.6.4-1 in Section 5.0.

Boreholes were advanced to a minimum depth of 50 ft below ground surface (bgs). A minimum of four soil samples were collected from each borehole for laboratory analysis of selected radiological and nonradiological constituents.

Soil samples were also collected at 5-ft intervals for gross radioactivity screening at the mobile radiological analytical laboratory (MRAL) and screening of selected nonradiological constituents at the mobile chemistry analytical laboratory (MCAL). Based on field screening and mobile laboratory analytical data, arrays were advanced laterally to adequately bound the zones of contamination.

Field screening was conducted for health and safety purposes and to determine which core intervals should be sampled. Recovered core was field-screened for gross beta and gamma radiation using an Eberline™ ESP-1 with an HP 260 probe or a Ludlum Model 12™ with a 44-40 shielded probe, and for VOCs using a Thermo Environmental™ Model 580B PID. Core

barrels and borehole cuttings were initially screened for gross beta/gamma radioactivity as they were retrieved from the borehole. Each borehole was screened for VOCs and combustible gases. Gross beta/gamma and VOC screening were also performed immediately after the core barrel was opened and prior to core logging and sampling. Samples were collected every five feet in each borehole for analysis by the MRAL and the MCAL. Samples were collected from that portion of the core run showing the highest radioactivity based on field screening or from an interval selected at random. MRAL suites included moisture and gross alpha, beta, and gamma radiation, and MCAL analyses included analyses of SVOCs and x-ray fluorescence (XRF) metals.

Quality assurance/quality control (QA/QC) samples were collected to determine the quality of the data generated during this investigation. QA/QC samples included duplicates, field blanks, and rinsate blanks.

All applicable LANL Environmental Restoration (ER) Standard Operating Procedures (SOPs) were followed, unless otherwise noted in Section 5.0.

2.0 ENVIRONMENTAL SETTING

The environmental setting of the Laboratory is described in Section 2.4 of the Installation Work Plan (IWP) for Environmental Restoration (LANL 1995, 1164). A detailed discussion of the environmental setting for TA-10, including climate, geology, hydrology, and a conceptual hydrogeologic model for the area and its surroundings is presented in the RFI Work Plan for OU 1079 (LANL 1992, 0783). A summary of the information specific to this site is presented in Sections 2.1 through 2.5 of this report.

2.1 Climate

Los Alamos County has a semiarid, temperate, mountain climate. Summers are generally sunny with moderate, warm days and cool nights. High altitude, light winds, clear skies, and dry atmosphere allow summer temperatures to range from 11°C to 28°C for TA-10. During the winter, temperatures typically range from -7°C to 4.5°C. The average annual precipitation in the area of TA-10 is estimated at 17.5 in. Of this total, approximately 40% occurs as brief, intense thunderstorms during July and August. Streamflow in canyons can occur as a result of these storms. Spring snowmelt runoff may also induce streamflow in the area canyons.

2.2 Geology

2.2.1 Geologic Setting

A detailed discussion of the geology of the entire Los Alamos area can be found in Section 2.5.1 of the IWP (LANL 1995, 1164). Site-specific material related to TA-10 is presented below.

Former TA-10 is located on the floor of Bayo Canyon at an elevation of 6 600 to 6 740 ft. Adjacent mesa tops range in elevation from about 7 000 ft to slightly over 7 100 ft (Fig. 2.2.1-1). The upper portions of the canyon walls are vertical or near-vertical cliffs cut into the upper (Tshirege) member of the Bandelier Tuff, the general stratigraphy of which is provided in Fig. 2.2.1-2. From the base of the cliffs, steep slopes ranging from 10° to 30° lead downward to a wide, gently sloping canyon floor to flat canyon floor. The slopes and canyon floor are mainly cut into the lower (Otowi) member of the Bandelier Tuff (Fig. 2.2.1-3). The slopes are overlain by talus and colluvium derived from the cliffs above. The canyon floor consists of broad, gentle side slopes covered with from less than 0.5 m to more than 2 m (from less than 1.5 ft to greater than 6 ft) of colluvium. The canyon floor also includes a narrow inner canyon consisting of the modern braided steam channel with low banks ranging in height from 0.5 m to 2 m (1.5 ft to 6 ft) (Drake and Inoué 1993, 06-0122). Up to 40 ft of Quaternary stream alluvium underlie the canyon floor. Near the site of the former radiochemistry laboratory, structure TA-10-1, sediments of the Puyé Formation underlie the Bandelier Tuff at a depth of approximately 62 ft.

Alluvium. In general, alluvium consists of poorly sorted, clay-rich sand and gravel. Because the head of Bayo Canyon is on the western part of the Pajarito Plateau, it receives a large fraction of its sediment supply from terrane underlain by volcanic rocks of the Tshicoma Formation. Thus, much of the alluvium consists of 1) angular to sub-rounded lithic clasts of Tshicoma rocks; 2) crystals of feldspar, biotite, and other ferromagnesian minerals; and 3) quartz derived from the Tshicoma Formation. In addition, the alluvium also contains a large component of clasts of pumice and tuff that are derived from both members of the Bandelier Tuff (Tshirege and the Otowi).

Alluvial and colluvial sediments exposed at the surface in Bayo Canyon underlie four distinct geomorphic surfaces of different ages (Drake and Inoué 1993, 06-0122). The youngest sediments, those within and adjacent to the stream channel, contain metal fragments; in places, these sediments are up to 1.1 m (3.5 ft) thick. The metal particles, which include lead disks, indicate that sediments were deposited concurrent with or subsequent to use of TA-10

Fig. 2.2.1-1. Generalized topography of TA-10.

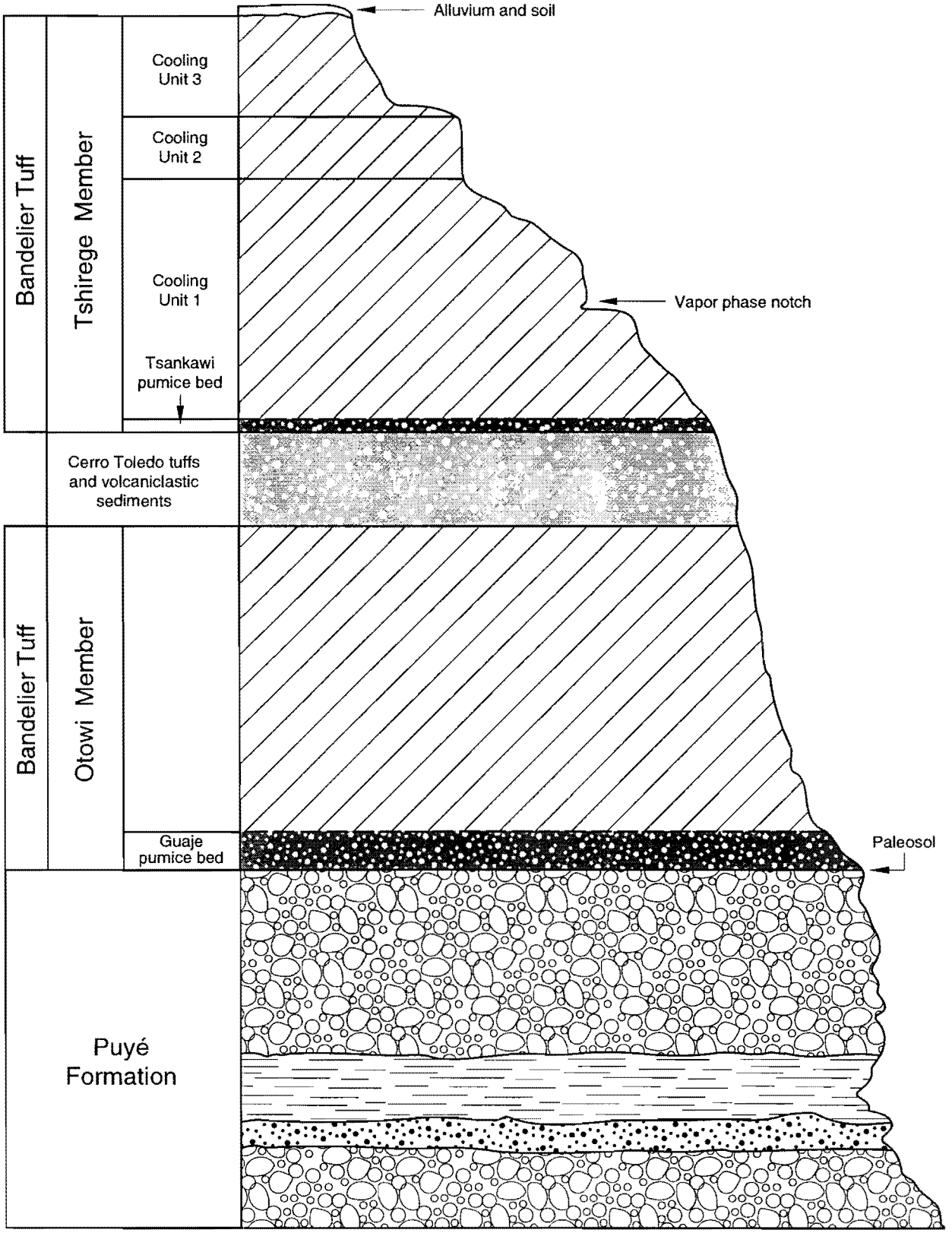
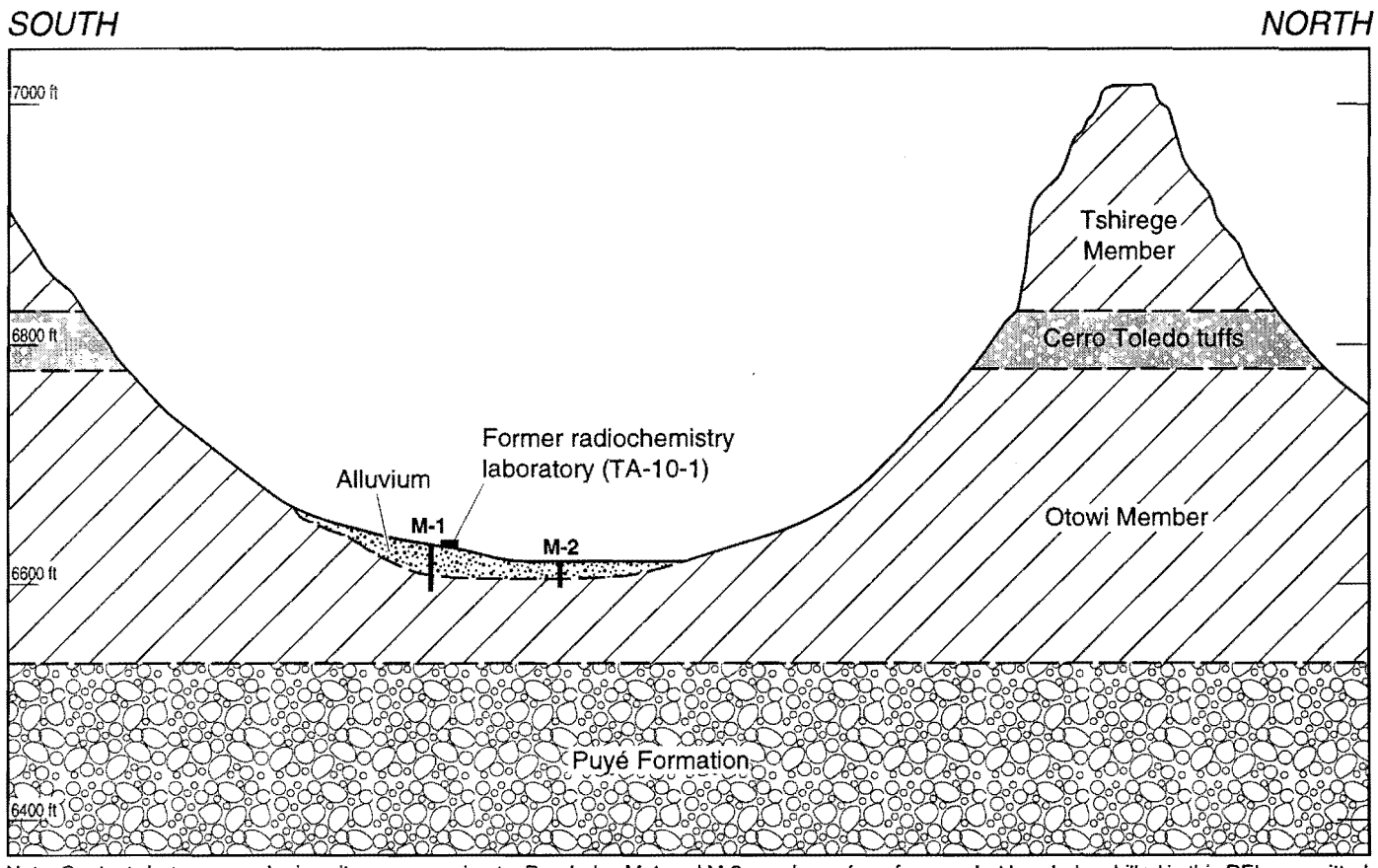


Fig. 2.2.1-2. Generalized stratigraphy of the Bandelier Tuff as expected at TA-10.



Note: Contacts between geologic units are approximate. Boreholes M-1 and M-2 are shown for reference, but boreholes drilled in this RFI are omitted for simplification.

Fig. 2.2.1-3. Cross section through Bayo Canyon at the location of the former radiochemistry laboratory.

as a firing site (Drake and Inoué 1993, 06-0122). The thickness of alluvium is shown by data from Bayo Canyon boreholes (Fig. 2.2.1-4). Although preliminary, these data indicate that the alluvial fill varies in thickness from 20 ft to approximately 40 ft. Alluvial thicknesses are greater toward the modern drainage, indicating that a narrower, inner canyon was cut into Bandelier Tuff prior to aggradation of the alluvium.

The composition of the alluvium varies depending on local clasts, and detailed studies of the composition or stratigraphy of the alluvium in Bayo Canyon have not currently been undertaken.

Otowi Member. The Otowi Member of the Bandelier Tuff is exposed in the lower canyon walls (Fig. 2.2.1-3), where it consists entirely of nonwelded vitric ignimbrite. The absence of bedding or parting features suggests that it is a single ash-flow deposit. A detailed description of the Otowi Member is provided by Broxton et al. (Broxton et al. 1995, 1162). The Guaje pumice bed, which comprises the lower part of the Otowi Member, is not exposed at TA-10 but was encountered in boreholes drilled in Bayo Canyon. In some of the cores, both the unwelded ignimbrite and the underlying Guaje pumice bed were encountered (borehole 10-1262). In others, generally lying in the northern part of the drilling array (e.g., borehole 10-1277), alluvium directly overlies the Guaje pumice bed. Preliminary observations of a small number of cores show that the top of the Bandelier Tuff may be characterized by a reddish, clay-rich zone with rare lithic clasts. This horizon is tentatively interpreted as a weakly developed soil horizon, or possibly as reworked soil or colluvium.

Puyé Formation. The Puyé Formation consists of fine- to coarse-grained fanglomerates interbedded locally with axial river gravels and lacustrine siltstone and clay. Material comprising the fanglomerates is derived mainly from the Tschicoma Formation to the west. At TA-10, the Puyé Formation was only penetrated approximately 5.5 ft.

The upper several feet of the Puyé Formation are characterized by a weakly to moderately developed soil horizon, or paleosol. The clay content of the paleosol apparently results in a low permeability at the top of the Puyé Formation, which can cause water (if available) to perch at the Bandelier/Puyé contact, as observed at TA-21 (Broxton et al. 1995, 1162).

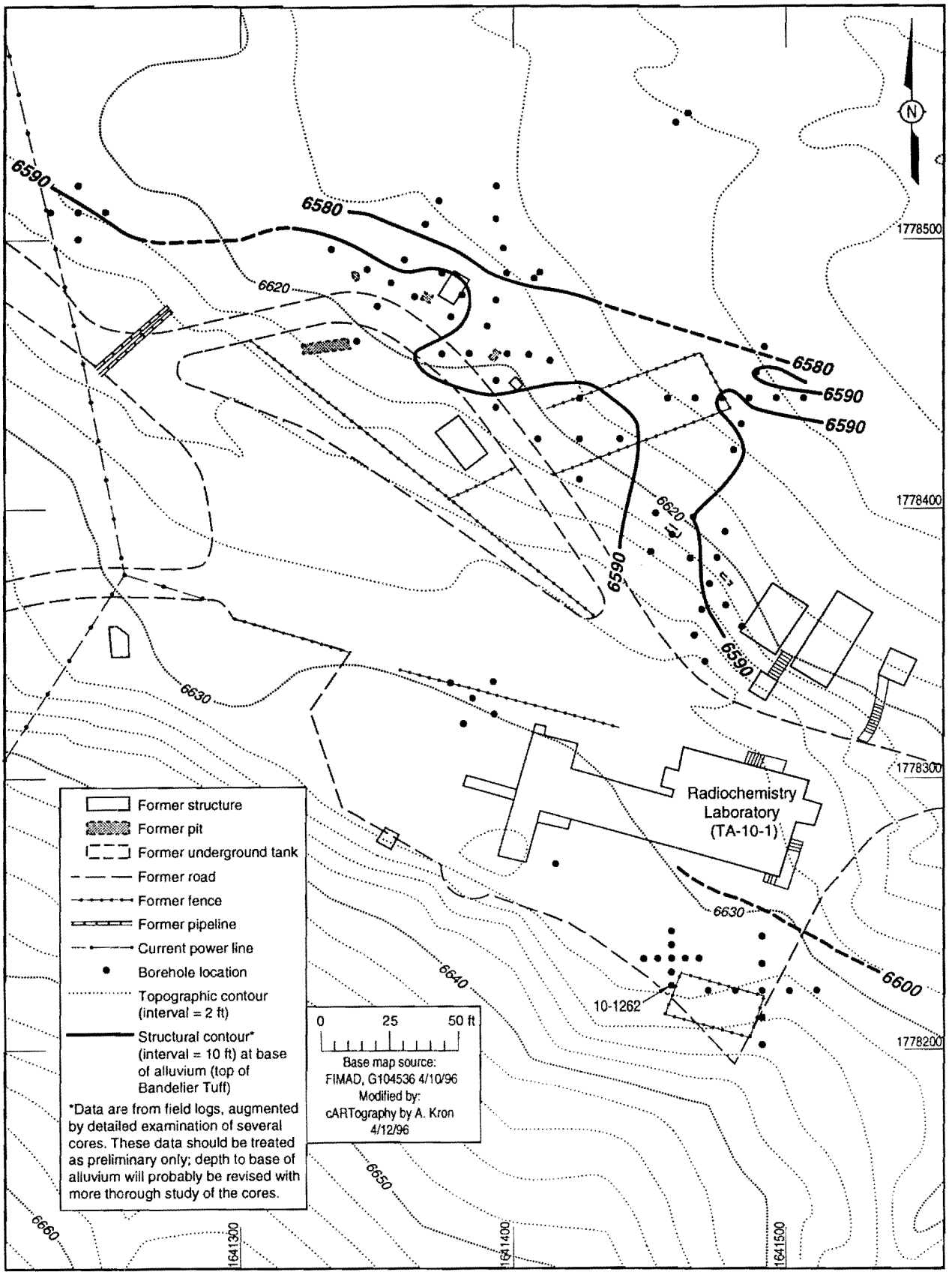


Fig. 2.2.1-4. Preliminary map of thickness of alluvium in central area.

2.2.2 Soils

Surface soils in undisturbed parts of Bayo Canyon consist of poorly developed, well-drained soils of the Totavi Series developed on Bandelier Tuff and alluvium (see Section 2.2.1 of this report). These soils are generally 5 cm to 10 cm thick. In many parts of former TA-10, the soil has been completely disturbed and reworked by construction and activities associated with former site processes. Reworking occurred during the operating lifetime of the site; further reworking and removal of soil and alluvium occurred during site remediation.

2.3 Hydrology

2.3.1 Surface Water

Surface water flow on the canyon slopes and floor occurs mostly by sheet flow during intense rains. Several shallow tributary channels collect water that flows over the cliffs and across the ground surface. The only sediment sampling station in Bayo Canyon is located at the intersection with Los Alamos Canyon about 2 miles to the east.

The ephemeral stream in Bayo Canyon carries water only during periods of intense thunderstorm activity, which occur irregularly. Anecdotal reports suggest that flooding has occurred on several occasions during the lifetime of TA-10. Individual flooding events probably cause realignment of the main channel during each event.

2.3.2 Ground Water

The elevation of the main aquifer is about 6 000 ft, approximately 600 ft below the level of Bayo Canyon at the site of the former TA-10. No perched or alluvial aquifers were known to be present in Bayo Canyon prior to RFI sampling, and none were encountered during subsurface sampling at the site of the TA-10 radiochemistry laboratory in 1994.

Ninety-three boreholes were augered to a minimum depth of approximately 50 ft during the TA-10 Subsurface Aggregate RFI. The boreholes encountered only damp alluvium and Bandelier Tuff. Two boreholes were deepened and cased to the area of contact between the Bandelier Tuff and the underlying Puyé Formation, at a depth of approximately 62 ft below the floor of Bayo Canyon near the former radiochemistry laboratory (TA-10-1). Because it was uncertain whether a saturated zone might overlie the contact, one hole was completed as a ground water monitoring well and the second equipped with a suction lysimeter to measure formation pore water in unsaturated rock. To date, no saturated conditions have been

observed. No other ground water monitoring wells and no environmental surveillance stations are present in Bayo Canyon. Therefore, no connection between the surface water and the main aquifer within Bayo Canyon is known or suspected.

2.4 Biological Surveys

Biological resource field surveys have been conducted in the area of TA-10 for compliance with the Federal Endangered Species Act of 1973; the New Mexico Wildlife Conservation Act; the New Mexico Endangered Species Act; Executive Order 11990, "Protection of Wetlands;" Executive Order 11988, "Floodplain Management;" 10 CFR 1022, Compliance With Floodplain/Wetlands Environmental Review Requirements (DOE 1979, 0633); and DOE Order 5400.1, General Environmental Protection Program (DOE 1988, 0075).

Ecosystems on the Pajarito Plateau support a large number of plant and animal species because of the number of plant communities convergent in this region. In Bayo Canyon, several plant communities are distributed based on elevational and aspect gradients. Each plant community has a number of habitats supporting characteristic fauna. Biological field surveys were conducted throughout Bayo Canyon in areas including the upper, middle, and lower portions of the canyon; the north- and south-facing slopes; the canyon bottom; and the areas along the stream channel (Biggs 1993, 06-0101).

Bayo Canyon is considered a floodplain and contains a stream channel with intermittent runoff (Biggs 1993, 06-0101; McLin 1992, 0825). However, this area does not contain a well-defined riparian plant community like the plant community found along the perennial stream in adjacent Pueblo Canyon. Biological surveys did not find any threatened and endangered plant or animal species in Bayo Canyon (Biggs 1993, 06-0101). The spotted bat may use the rocky cliffs as a roosting area. The northern goshawk prefers ponderosa pine/oak and mixed conifer habitats, which cover only the north-facing slopes in the upper portion of the canyon. However, the goshawk tends to avoid humans, and its presence is unlikely because of the suburban areas on the mesa tops above the upper canyon. The peregrine falcon nests in lower Pueblo Canyon and is expected to forage into middle Pueblo Canyon and adjacent Bayo Canyon. This area is considered one of the better nesting sites in New Mexico because the peregrine falcon occupied it during a time when the species was at its lowest numbers in the state.

2.5 Cultural Surveys

A cultural resource survey has also been conducted in the area of former OU 1079 (which includes TA-10, as well as TA-31, TA-32, and TA-45) as required by the National Historic Preservation Act (amended). As described in the RFI Work Plan for OU 1079, 20 archaeological sites eligible for inclusion on the National Register of Historic Places under Criterion D are located within the survey area. The attributes of these sites that make them eligible for inclusion on the National Register were not expected to be affected by any Environmental Restoration sampling activities proposed at OU 1079. A report documenting the survey area, methods, results, and monitoring recommendations was transmitted to the New Mexico State Historic Preservation Office for its concurrence in a "Determination of No Effect." As specified in 36 CFR 800.5(b), and following the intent of the American Indian Religious Freedom Act, a copy of this report was also sent to the Governor of San Ildefonso Pueblo for comments on any possible impacts to sacred and traditional places. All monitoring and avoidance recommendations contained in the work plan were followed by all personnel involved in ER sampling activities (LANL 1992, 0783).

3.0 Approach to Data Assessment and Analysis

The decision approach used for the TA-10 Subsurface Disposal Aggregate involves a series of quantitative steps that occur after the field investigation, chemical analysis, and data reporting are complete. These steps begin with routine data validation and continue with more focused data validation, if necessary. Routine validation involves validating each data item against specific targets and adding qualifier flags to the data signifying a potential deficiency. Focused validation consists of analyzing QA/QC data for their potential impact on the succeeding data assessment steps, i.e., comparing site data to background concentration data, verifying the identities of detected organic chemicals, comparing site data to SALs for potential human health impacts, and performing human health risk assessments when necessary. The following subsections provide overviews of the methods used to complete these quantitative steps. Further details can be found in Technical Approach to RFI reports (LANL in preparation, 1281).

3.1 Sample Analysis

All samples requiring chemical and radiological analysis and chain-of-custody documentation are submitted to the sample management office (SMO), the MRAL, and/or the MCAL for analysis. All forms of analysis were used during this investigation.

3.1.1 Analytical Methods

All samples were analyzed using Environmental Protection Agency (EPA) SW-846 methods or their equivalents.

3.1.2 Data Validation

Data verification and validation procedures are used to determine whether data packages have been generated according to specifications, are of known quality, and contain the information necessary to determine data sufficiency for decision making.

Data verification is a check of data deliverables against a set of stated requirements to ensure that what has been ordered has been delivered, thus indicating that the laboratories have met their contractual obligations. All analytical data generated in support of the ER Project are verified.

Data validation is the process of determining whether individual results (a datum) can be reliably used to support the decision-making process. During the process, validators determine whether data should be qualified or used with caution because of the potential impact of noted flaws or the failure to achieve analytical precision or bias constraints.

Routine validation is the comparison of quality indicators (such as surrogate recovery, measurements of method blanks, holding times, and differences between replicate measurements) with clearly defined limits to determine whether limitations may need to be placed on the use of the data. Routine validation is most suitable for routine analyses and for those nonroutine analyses for which clearly defined limits have been established.

The focused data validation process addresses those characteristics of the data (e.g., precision and bias) that directly affect the decisions based on the data. The same data set may undergo different focused validations for different decisions.

3.2 Background Comparisons

Once the data validation process is complete and the site data are finalized, the next step in the process is to compare site data to available background data. The results of a focused data validation should exclude from consideration for background comparison any contaminant that is identified as an artifact of laboratory or field contamination, analytical interference, or

improper analyte identification or quantitation. The purpose of this decision step is to determine if chemicals that have natural or anthropogenic background distributions should be retained as COPCs or eliminated from further consideration. Background data are available from two sources: 1) soil samples collected throughout Los Alamos County for which chemical analyses were performed for certain inorganic (metal) chemicals and naturally occurring radioactive chemicals (Longmire et al. 1995, 1142; 1266); and, 2) background concentrations of radioactive chemicals associated with global fallout from atmospheric nuclear testing (e.g., plutonium, cesium, strontium, and tritium) reported in LANL Environmental Surveillance reports (Purtymun et al. 1987, 0211; ESG 1988, 0408; ESG 1989, 0308; Environmental Protection Group 1990, 0497; Environmental Protection Group 1992, 0740).

The RFI data considered in this report were collected entirely from boreholes. The ER Project procedure is to make comparisons of PRS data to the most geologically relevant subset of the LANL-wide background data. Subsurface materials sampled and samples from these cores were described as alluvium, transitional material, Guaje pumice, the Otowi Member of the Bandelier Tuff (Qbo), the Puyé Formation, and fill material. Because more than half the material sampled from each borehole is composed of alluvium derived from Bandelier Tuff, the LANL-wide soil background data are applicable for this comparison. Table 3.2-1 summarizes the rationale for using LANL-wide soil background data for these subsurface materials.

Appendix D uses box plots to graphically present the comparison of PRS data for inorganic constituents to LANL-wide background data (Figs. D-1 through D-13). As the box plots show, all constituents sampled lie either well below or within a statistically valid range of the LANL background data.

Uranium is an important exception in using LANL-wide soil background data for comparison because it is known to be present in elevated concentrations in certain geological strata (Longmire et al. 1995, 1266). The Guaje pumice background value of 17.8 mg/kg for uranium (based on Kuentz 1986, 0602) will be used for comparisons with all subsurface materials. The uranium value derived from the Guaje pumice is an appropriate comparison value for all of the subsurface strata because a large pumice component is suspected in all of these subsurface materials and these values are probably typical of the entire Otowi Member.

TABLE 3.2-1

SUMMARY OF SITE MATERIALS SAMPLED IN BOREHOLES AND RATIONALE FOR SELECTING LANL-WIDE SOIL BACKGROUND DATA

SITE MATERIAL	RATIONALE FOR SELECTING LANL-WIDE SOIL BACKGROUND DATA FOR STATISTICAL COMPARISONS
Alluvium	Composes large percentage of material sampled; derived primarily from the Bandelier Tuff.[a]
Transitional material	No background data exist for this medium; composes very low percentage of material sampled.[a]
Guaje pumice	No background data exist for this medium; composes very low percentage of material sampled.[a]
Bandelier Tuff - Otowi Member (Qbo)	Existing background data for the Otowi are not adequate for statistical background comparisons; composes less than half of material sampled.[a]
Puyé Formation	Material sampled is actually a paleosoil; therefore, comparison with soil is appropriate.[a]
Fill material	Soil is likely to be a key component of the fill material used at these PRSs.[a]

[a] Background data for uranium was derived from literature values for the Guaje pumice.

Comparisons between site data and background data are initially performed by comparing each observed concentration datum to a background screening value (a maximum reported concentration or an upper tolerance limit [UTL] estimated from background data). Details of statistical methods used to generate UTLs from the background data sets, as well as suggestions for statistical methods for comparing site and background concentration distributions, are presented in the guidance document, Statistical Comparisons to Background, Part I (Environmental Restoration Project Assessments Council 1995, 1218). The UTLs used in the TA-10 subsurface background comparisons are summarized in Table 3.2-2.

TABLE 3.2-2

SUMMARY OF BACKGROUND SCREENING VALUES

CHEMICAL	BACKGROUND SCREENING VALUE (mg/kg)
Aluminum	38 700
Antimony	1
Arsenic	7.82
Barium	315
Beryllium	1.95
Cadmium	2.6
Calcium	6 120
Chloride	75.9
Chromium	19.3
Cobalt	19.2
Copper	15.5
Iron	21 300
Lead	23.3
Magnesium	4 610
Manganese	714
Mercury	0.1
Nickel	15.2
Potassium	3 410
Silver	NA[a]
Selenium	1.7
Sodium	915
Sulfate	317
Tantalum	<0.9
Thallium	1
Uranium[b]	17.8
Vanadium	41.9
Zinc	50.8

[a] NA = No applicable value is available.
[b] The Guaje pumice uranium maximum is 17.8 mg/kg (Kuentz 1986, 0602). The Guaje pumice uranium maximum is used as a background screening value for all uranium background comparisons.

If a chemical has a reported concentration that exceeds its background screening value and it fails all appropriate statistical background comparison tests (i.e., the site data are statistically greater than background data), then that chemical is carried forward to the screening assessment process. If a chemical does not have a reported concentration that exceeds the background screening value or it passes all statistical background comparison tests, then that chemical is removed from further consideration. For rarely detected inorganics (cadmium and mercury), only the Slippage test is appropriate. For all other inorganics the Gehan, Slippage, and Quantile tests are used for statistical comparisons between the PRS data and the LANL-wide soil data. The Gehan test is a nonparametric version of the Student's t-test, which is designed to detect differences between mean concentrations of background and PRS data. The Slippage and Quantile tests are designed to detect differences in the upper percentiles (compare the highest PRS results to the highest background results).

3.3 Evaluation of Organic Constituents

Background data are not available for organic chemicals. The preliminary evaluation of organic chemicals considers detected chemicals and chemicals that were analyzed for but not detected in any sample. The purpose of this decision step is to determine if organic chemicals should be retained as COPCs or eliminated from further consideration based on detection status. Detection status is determined by the analytical laboratory on a sample-by-sample, analyte-by-analyte basis. Estimated quantitation limits (EQLs) have been established for each analyte as reporting limits when the analyte is not detected. It should be noted that the EQLs reported for individual samples are dependent on a number of factors and may vary from sample to sample and from analysis to analysis. Therefore, the sample-specific EQL for a chemical must be used in this comparison.

If a chemical has a reported concentration that exceeds its reporting limits, then that chemical is generally carried forward through the screening assessment process. If a chemical does not have a reported concentration that exceeds its reporting limits, then that chemical is generally removed from further consideration. Exceptions to these general rules may be made if site-specific process knowledge so indicates. A chemical that is detected may be removed from further consideration if it can be determined that its presence is not due to Laboratory operations.

3.4 Human Health Assessment

3.4.1 Screening Assessment

The purpose of this decision step is to determine if chemicals should be retained as COPCs or eliminated from further consideration based on comparisons with screening action levels (SALs). This is the last step in the screening assessment process for human health concerns. If COPCs remain after this step, then further action may be proposed. If no COPCs remain after this step, then no further action (NFA) may be proposed based on human health concerns. SALs are medium-specific concentrations that are calculated using chemical-specific toxicity information and health-protective, default exposure assumptions. For those chemicals for which SALs are available, each observed concentration datum is compared to the chemical's SAL. If a chemical has a reported concentration greater than its SAL, then that chemical is retained as a COPC pending further analysis. If a chemical does not have a reported concentration greater than its SAL, then that chemical is generally removed from further consideration. If more than one chemical is present at the site, this decision is deferred pending the results of the multiple chemical evaluation (described below). The decision to identify a chemical as a COPC when a SAL is not available is made on a case-by-case basis, taking into account the availability of process knowledge and toxicological information.

It is possible that COPCs should be retained because of the combined adverse health effects of several chemicals. This possibility is evaluated in the multiple chemical evaluation, in which the reported concentration for each chemical is divided by its respective SAL, and the resulting "normalized" values are added. If the sum of the normalized values (i.e., the total normalized value) is less than one, then the chemicals are removed from further consideration. If the total normalized value is greater than one, then chemicals having an individual normalized value greater than or equal to 0.1 are retained as COPCs pending further evaluation.

Only those chemicals that do not have reported concentrations greater than SAL in at least one sample are included in the multiple chemical evaluation. These chemicals are divided into three classes: noncarcinogens, chemical carcinogens, and radionuclides. Additive effects are assumed within each class, but each class is evaluated separately. For further information on the calculation of multiple chemical evaluations see Technical Approach to RFI reports (LANL in preparation, 1281).

3.4.2 Risk Assessment

No human health risk assessment is included with this report because no chemicals were retained as COPCs in the screening assessments (see Section 5.0).

3.5 Ecological Assessment

The methodology for preliminary ecological screening assessment consists of evaluating the site for 1) the presence of threatened or endangered species and sensitive habitats, 2) the potential for off-site transport of contaminants, and 3) receptor access to the site or areas potentially contaminated by off-site transport.

In accordance with conversations between LANL ER Project personnel and regulators, further ecological risk assessment at this site is deferred until the site can be assessed as part of the ecological exposure unit approach that is being developed by LANL in conjunction with EPA Region VI and the New Mexico Environment Department.

4.0 RESULTS OF QUALITY ASSURANCE/QUALITY CONTROL ACTIVITIES

As a result of QA/QC activities, qualifiers are added to the data when necessary as part of routine data validation activities. The following is a list of the qualifiers used in this RFI report and their definitions.

U = Undetected quantity. The analyte was not detected in the sample above the EQL.

J = Estimated quantity. The analyte was detected in the sample, but there were one or more QC parameters associated with this sample that were outside allowed limits.

UJ = Estimated undetected quantity. The analyte was not detected in the sample, and there were one or more QC parameters associated with this sample that were outside allowed limits.

R = Rejected quantity. The data are deemed not usable because one or more of the QC parameters for the analyte were outside allowed limits to the point that the analyte value is highly questionable.

There can be many reasons for qualifying analytical data. For example, there is a set of sample-specific QC parameters that can cause analytes from individual samples to be qualified, such as surrogate recoveries or duplicate results. There are also batch-specific parameters, such as blind QC samples and method blanks, that affect all of the samples analyzed in a particular group. Often, the quantity of QA/QC data available for site-specific investigations is inadequate for estimating components of measurement error because statistics cannot be defined for sample sizes of one, or estimated well with small sample sizes. Consequently, QA/QC data for site-specific investigations will rarely be used to adjust data.

The results of QA/QC activities for the Phase I investigation of the TA-10 subsurface are discussed below. The discussion is organized according to the suite of analyses performed and the request numbers under which samples were analyzed for each suite. The request numbers associated with specific analyses for specific samples are shown in the sample summary tables in Section 5.0. The QA/QC issues that arose are summarized according to the request number and the associated samples in Appendix B, Table B-1.

4.1 Inorganic Analyses

Samples were analyzed for inorganic constituents under many different request numbers. The QA/QC results for each request are discussed below.

For requests 18320, 18432, 18501, 18578, 18586, 18781, 19013, 19400, 19401, 19870, 20011, 20231, 20317, 20319, and 20500, all data are valid and usable without qualification.

For request 18421, mercury data are qualified R for exceeding the required water sample holding time by 12 days. Data for arsenic, barium, calcium, chromium, cobalt, copper, iron, lead, manganese, nickel, silver, sodium, vanadium, and zinc are qualified J or UJ for low matrix spike recoveries (30 to 75%). All other data are valid and usable without qualification.

For request 18430, aluminum, thallium, and vanadium data are qualified J or UJ for low recoveries (40 to 75%) in the QC sample. All other data are valid and usable without qualification.

For request 18544, aluminum, chromium, iron, magnesium, nickel, and vanadium data are qualified J or UJ for low recoveries (40 to 75%) in the QC sample. All other data are valid and usable without qualification.

For requests 18581 and 18583, aluminum, chromium, iron, magnesium, lead, thallium, and vanadium data are qualified J or UJ for low recoveries (30 to 75%) in the QC sample. All

detected values of arsenic are qualified J for high recovery (130%) in the QC sample. All other data are valid and usable without qualification.

For request 18584, aluminum, chromium, iron, magnesium, and vanadium data are qualified J or UJ for low recoveries (40 to 75%) in the QC sample. All detected values of sodium are qualified J for high recovery (132%) in the QC sample. All other data are valid and usable without qualification.

For request 18585, aluminum, chromium, iron, magnesium, lead, thallium, and vanadium data are qualified J or UJ for low recoveries (30 to 75%) in the QC sample. All other data are valid and usable without qualification.

For request 18849, aluminum, chromium, and mercury data are qualified J or UJ for low recoveries in the QC sample. All other data are valid and usable without qualification.

For requests 18852, 18869 and 18871, aluminum, chromium, magnesium, and vanadium data are qualified J or UJ for low recoveries in the QC sample. All other data are valid and usable without qualification.

For requests 18853, 18862, and 18863, there were recovery problems for six analytes in the QC sample. Aluminum, chromium, iron, magnesium, and vanadium had recoveries between 40 and 70% and the data for these analytes are qualified J or UJ. The recovery for lead was about 10%. Lead values ranged from less than 2 mg/kg to 29 mg/kg in the samples. Because all of the samples had low values and all of the matrix spike and laboratory control sample (LCS) results are within allowed limits, the lead values are not rejected but are qualified J for possible low bias. All other data are valid and usable without qualification.

For request 18867, there were numerous QC problems. Silver, cadmium, and antimony had low recoveries in the matrix spike sample. Aluminum, chromium, iron, potassium, magnesium, nickel, and vanadium had low recoveries in the QC sample. Silver and cadmium had widely divergent values in the duplicate sample. Data for all of the above analytes are qualified J or UJ for the QC deficiencies. Manganese had a high recovery in the matrix spike sample. Therefore, all detected values of manganese are qualified J. For sample AAB6321, arsenic had a low post-digestion spike recovery in the atomic absorption (AA) and all arsenic data are qualified UJ. For sample AAB6336, selenium had a low post-digestion spike recovery in the AA and all selenium data are qualified UJ. All other data are valid and usable without qualification.

For request 19114, aluminum, chromium, iron, and zinc data are qualified J for widely divergent values in the duplicate sample. This is most likely caused by heterogeneity in the samples.

Data for silver and antimony are qualified J or UJ for low recoveries in the QC or matrix spike sample (40 to 75%). Detected values of arsenic and mercury are qualified J for high recoveries in the QC sample (120 to 180%). All other data are valid and usable without qualification.

For request 19397, chromium, mercury, and thallium had low recoveries (40 to 75%) in the QC sample and all data for these analytes are qualified J or UJ. Beryllium had a high recovery in the QC sample (greater than 120%) and all detected beryllium values are qualified J. All other data are valid and usable without qualification.

For request 19402, chromium had a low recovery (40 to 75%) in the QC sample and all chromium data are qualified J or UJ. Mercury missed the recommended holding time for soils by about 30 days, and mercury data are qualified J or UJ. All other data are valid and usable without qualification.

For requests 19404, 19571, 19779, 19780, 19781, 19782, 19783, 19784, 19786, 19793, 19813, 19821, and 20307, mercury missed the recommended holding time for soils by one to two months. Mercury data are qualified J or UJ. All other data are valid and usable without qualification.

For request 19406, mercury missed the recommended holding time for soils by about 40 days. Mercury also had a low recovery in the QC sample. Mercury data are qualified J or UJ. All other data are valid and usable without qualification.

For requests 19409 and 19410, chromium and aluminum had low recoveries in the QC sample (40 to 75%) and all data for these analytes are qualified J or UJ. Mercury missed the recommended holding time for soils by about 30 days. Mercury data are qualified J or UJ. All other data are valid and usable without qualification.

For requests 19428 and 19429, chromium and aluminum had low recoveries (40 to 75%) in the QC sample and all data for these analytes are qualified J or UJ. Detected values of mercury are qualified J for high recoveries (greater than 120%) in the QC sample. All other data are valid and usable without qualification.

For requests 19430 and 19431, mercury missed the recommended holding time for soils by one to two months and also has a low recovery in the QC sample (73%). Mercury data are qualified J or UJ. Antimony had a high recovery in the QC sample (greater than 120%). All detected values of antimony are qualified J. All other data are valid and usable without qualification.

For requests 19445 and 19446, mercury missed the recommended holding time for soils by one to two months. Mercury data are qualified J or UJ. Vanadium had a high recovery (greater than

120%) in the QC sample. All detected values of vanadium are qualified J. All other data are valid and usable without qualification.

For request 19745, mercury missed the recommended holding time for soils by one to two months and the mercury data are qualified J or UJ. Chromium, iron, manganese, and zinc showed sample heterogeneity in the duplicate and matrix spike samples and all data for these analytes are qualified J. All other data are valid and usable without qualification.

For request 19761, mercury missed the recommended holding time for soils by one to two months and the data are qualified J or UJ. Chromium and silver had low recoveries in the QC sample and all data for these analytes are qualified J or UJ. Detected values of cadmium and antimony are qualified J for high recoveries (greater than 120%). All other data are valid and usable without qualification.

For request 19787, mercury missed the recommended holding time for soils by one to two months and the mercury data are qualified J or UJ. Antimony, selenium and silver data are qualified J or UJ for low matrix spike recoveries. All other data are valid and usable without qualification.

For request 19810, mercury missed the recommended holding time for soils byone to two months and the mercury data are qualified J or UJ. Aluminum data are qualified J or UJ for low recovery (40 to 75%) in the QC sample. All other data are valid and usable without qualification.

For requests 19818, 19850, and 20371, mercury missed the recommended holding time for soils by one to two months and the mercury data are qualified J or UJ. Data for chromium are qualified J or UJ for low recovery in the QC sample (40 to 75%). All other data are valid and usable without qualification.

For request 19852, mercury missed the recommended holding time for soils by one to two months and the mercury data are qualified J or UJ. Data for chromium and thallium are qualified J or UJ for low recoveries (40 to 75%) in the QC sample. All other data are valid and usable without qualification.

For request 19898, mercury missed the recommended holding time for soils by one to two months and the mercury data are qualified J or UJ. The data for chromium, lead, arsenic, silver, and thallium are qualified J or UJ for low recoveries (40 to 75%) in the QC sample. All other data are valid and usable without qualification.

For requests 20067, 20079, 20088, 20090, 20091, and 20092, mercury missed the recommended holding time for soils by one to two months and the mercury data are qualified J or UJ. Data for

antimony and zinc are qualified J or UJ for low recoveries in the matrix spike samples (40 to 75%). Data for lead and magnesium are qualified J for sample heterogeneity shown in the duplicates. All other data are valid and usable without qualification.

For request 20110, aluminum and nickel data are qualified J or UJ for low recoveries (40 to 75%) in the QC sample. All other data are valid and usable without qualification.

For request 20112, silver data are qualified R because the matrix spike recovery was less than 10%. Mercury data are qualified UJ for low recovery (40 to 75%) in the matrix spike sample. All other data are valid and usable without qualification.

For request 20318, lead data are qualified R for a recovery of less than 10% in the QC sample. Data for silver and mercury are qualified J or UJ for low recoveries (40 to 75%) in the QC sample. Detected values of chromium are qualified J for a high recovery (greater than 120%) in the QC sample. Data for calcium are qualified J or UJ for a low recovery (40 to 75%) in the LCS. All other data are valid and usable without qualification.

For request 20323, silver and lead are qualified R for recoveries of less than 10% in the matrix spike sample. Data for antimony, arsenic, barium, beryllium, cobalt, copper, magnesium, nickel, and thallium are qualified J or UJ for low recoveries (40 to 75%) in the matrix spike sample. All other data are valid and usable without qualification.

In a number of the metal requests, inductively coupled plasma emission spectroscopy (ICPES) was used for the detection of selenium and antimony instead of electrothermal vaporization atomic absorption (ETVAA) and inductively coupled plasma mass spectrometry (ICPMS). This resulted in elevated reporting limits for these two elements in some circumstances, depending upon the instrument used and the sample matrix interference in the analysis. The reporting limit ranged from 0.27 mg/kg to 23.8 mg/kg for selenium, and from 0.27 mg/kg to 14.9 mg/kg for antimony. This does not pose a significant problem because there are many data points for which the analyses were conducted with the correct methods, and the reporting limits for these analyses were all less than 1 mg/kg. Also, selenium and antimony were not listed as COPCs at this site.

4.2 Organic Analyses

4.2.1 Volatile Organic Compounds

Samples were analyzed for VOCs under many different request numbers. The QA/QC results for each request are discussed below.

For requests 18697, 18827, 19042, 19097, 19107, 19143, 19199, 19316, 19376, 19377, 19434, 19460, 19487, 19503, 19522, 19547, 19630, 20032, 20039, 20147, 20209, 20230, and 20282, all data are valid and usable without qualification.

For request 19249, all values of 4-methyl-2-pentanone are qualified R for a false negative result in the QC sample. All other data are valid and usable without qualification.

In request 19260, methylene chloride and acetone were detected in the method blank due to laboratory contamination. All values detected in samples were less than 10 times the concentrations found in the blank. The reporting limits were raised for these analytes in all associated samples to the levels detected. All other data are valid without qualification.

For request 19420, there were several QC problems. Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blanks due to contamination. All values detected in samples were less than 10 times the concentrations found in the blank. The reporting limit was raised for these analytes in all associated samples to the level detected. Internal standards 1,4-difluorobenzene and chlorobenzene-d5 had low responses for sample AAB9296; therefore, data for 24 analytes were qualified UJ. Mixed xylenes had a low recovery in one of the QC samples. Data for this analyte are qualified UJ for all associated samples. All other data are valid and usable without qualification.

In request 19570, methylene chloride was detected in the method blank due to laboratory contamination. All detected sample values were less than 10 times the concentration found in the blank. The reporting limit was raised for this analyte in all associated samples to the level detected. All other data are valid and usable without qualification.

For request 19895 there were problems with the internal standards. For samples AAB9382 and AAB9330, all of the internal standards failed to meet acceptance criteria and data for all analytes are qualified UJ. For the rest of the samples in the request, the fourth internal standard failed to meet acceptance criteria. Data for the 16 analytes associated with this internal standard are qualified UJ for these samples. All other data are valid and usable without qualification.

4.2.2 Semivolatile Organic Compounds

Samples were analyzed for SVOCs under many different request numbers. The QA/QC results for each request are discussed below.

For requests 17853, 17869, 17874, 17877, 17880, 17993, 18001, 18206, 18209, 18248, 18272, 18278, 18318, 18484, 18485, 18487, 18556, 18564, 18750, 18995, 19042, 19143, 19932, 20230, and 20282, all data are valid and usable without qualification.

In request 17842, there was a problem with low recoveries in the QC sample. Anthracene, benzo-a-pyrene, bis(2-chloroethyl)ether, 4-chloro-3-methylphenol, dibenzofuran, 1,2-dichlorobenzene, 4-methylphenol, 2-methylphenol, naphthalene, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol all had recoveries between 10 and 50%. Data for these analytes are qualified UJ. Hexachloroethane was a false negative in the QC sample; therefore, all results for this analyte are qualified R. All other data are valid and usable without qualification.

For request 17852, benzidine data are qualified UJ for a low response factor and large percent difference in the continuing calibrations. All other data are valid and usable without qualification.

For request 17854, di-n-butyl phthalate was found at the same concentration in the samples and in the method blank. The reporting limit was raised for this analyte in all associated samples to the level detected. All other data are valid and usable without qualification.

In request 17875, there were a number of low recoveries in the QC sample. Anthracene and 2-methylphenol had recoveries of less than 10% and data for these analytes are qualified R. Dichlorobenzene[1,2-], 2,4-dichlorophenol, naphthalene, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol had recoveries between 10 and 50%. These analytes are all qualified UJ. All other data are valid and usable without qualification.

In request 17994, for sample AAB6180, all of the surrogate recoveries were below allowed limits. Because no analytes were detected, all of the data are qualified UJ. All other data are valid and usable without qualification.

In request 18004, there were many analytes with low recoveries in the QC sample. Dichlorobenzene[1,2-], hexachloroethane, and 2-methylphenol data are qualified R for recoveries of less than 10% in the QC sample. Data for the following 13 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample: anthracene, benzo-a-pyrene, benzo(g,h,i)perylene, bis(2-chloroethyl)ether, 4-chloro-3-methylphenol, chrysene, dibenzofuran, 2,4-dinitrotoluene, naphthalene, pentachlorophenol, pyrene, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

In request 18046, di-n-butylphthalate was found in the method blank due to laboratory contamination. All detected sample values were less than five times the concentration found

in the blank. The reporting limit was raised for this analyte in all associated samples to the level detected. All other data are valid without qualification.

For request 18100, there were a number of problems with surrogate recoveries. For sample AAB6186, all of the surrogate recoveries were less than 10%. Therefore, all analytes for this sample are qualified R. For samples AAB6182, all of the surrogate recoveries were low, between 10 and 20%. Therefore, all analytes for this sample are qualified UJ. For sample AAB2978, two of the base/neutral surrogates were below allowable limits (10 to 20%). For the low recoveries, data for all base-neutral extractable analytes are qualified UJ. All other data are valid and usable without qualification.

In request 18149, sample AAB3002 had several QC problems. In the first extraction, the surrogates were inadvertently not added to the sample. The second extraction took place four days outside the recommended holding time. No analytes were detected in either extraction. However, because of the QC deficiencies, data for all analytes are qualified UJ. All other data are valid and usable without qualification.

For request 18189, there were a number of low recoveries in the QC sample. The recovery for benzo-b-fluoranthene was less than 10% resulting in an R qualification for this analyte. Ten analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, o-chlorophenol, o-dichlorobenzene, 2,4-dichlorophenol, fluorene, 2-methylphenol, naphthalene, pentachlorophenol, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

For request 18305, there were a number of low recoveries in the QC sample. The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all less than 10% resulting in an R qualification for the data for these analytes. Seven analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, benzo-a-pyrene, bis(2-chloroethyl)ether, 4-chloro-3-methylphenol, naphthalene, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

For request 18348, there were a number of low recoveries in the QC sample. Eleven analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, o-chlorophenol, 1,2-dichlorobenzene, 2,4-dichlorophenol, fluorene, 2-methylphenol, naphthalene, 2-nitrophenol, pentachlorophenol, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

In request 18362, there was a problem with sample AAB6416. None of the surrogates were detected in the sample. It is possible that the surrogate mix was not added, but this is unknown.

Because the sample was not reanalyzed, the data for the sample are qualified R. All other data are valid and usable without qualification.

For requests 18397 and 18443, di-n-butylphthalate was found in the method blank from laboratory contamination. All values detected in samples were less than five times the concentration found in the blank. The reporting limit was raised for this analyte in all associated samples to the level detected. All other data are valid without qualification.

In request 18546, there were several QC problems. Bis(2-ethylhexyl)phthalate was found in the method blank due to laboratory contamination. EQLs were raised for samples in which it was detected at concentrations less than five times the amount detected in the blank. Six analytes had low recoveries (10 to 50%) in the QC sample and their data are qualified UJ. They are o-chlorophenol, 2,4-dichlorophenol, 2-methylphenol, pentachlorophenol, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

In request 18621, there were problems with the QC sample results. The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methphenol were all less than 10% resulting in an R qualification for these analytes. Nine analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, benzo-a-pyrene, bis(2-chloroethyl)ether, 4-chloro-3-methylphenol, 4-methylphenol, naphthalene, pentachlorophenol, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

In request 18660, there were low recoveries for the QC sample. The recoveries for 1,2-dichlorobenzene and 2-methylphenol were all less than 10% resulting in an R qualification for these analytes. Six analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, o-chlorophenol, 2,4-dichlorophenol, naphthalene, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

For request 18668, there were several QC problems. Di-n-butylphthalate was found in the method blank due to laboratory contamination. EQLs were raised for samples in which it was detected at concentrations less than five times the amount detected in the blank. Fifteen analytes had low recoveries (10 to 50%) in the QC sample and their data are qualified UJ. They are anthracene, benzo-a-pyrene, 2-chloronaphthalene, dibenzofuran, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 2,6-dinitrotoluene, 2-methylphenol, 4-methylphenol, naphthalene, 4-nitrophenol, pentachlorophenol, pyrene, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

For request 18712, there were several QC problems. In sample AAB6537 there were two acid surrogates with recoveries less than 10%; therefore, data for all acid compounds in the sample are qualified R. There was also a low recovery of phenol in the water QC sample; therefore, phenol is qualified UJ in the water samples (AAB6538 and AAB6539). All other data are valid and usable without qualification.

For request 18768, there were several QC problems. Di-n-butylphthalate was found in the method blank due to laboratory contamination. EQLs were raised for samples in which it was detected at concentrations less than five times the amount detected in the blank. The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methphenol were all less than 10% resulting in an R qualification for these analytes. Ten analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, benzo-a-pyrene, benzo[g,h,i]perylene, bis(2-chloroethyl)ether, 4-chloro-3-methylphenol, 4-methylphenol, naphthalene, pentachlorophenol, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

In request 18780, for sample AAB6581, there were four surrogate recoveries below allowable limits. The analytes for this sample are qualified UJ (there were no detected values). All other data are valid and usable without qualification.

For request 18793, there were several QC problems. The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methphenol were all less than 10% resulting in an R qualification for these analytes. Eleven analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, benzo-a-pyrene, benzo[g,h,i]perylene, bis(2-chloroethyl)ether, 2,6-dinitrotoluene, 4-methylphenol, naphthalene, pentachlorophenol, pyrene, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

In request 18917, there were low recoveries for the QC sample. Eleven analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, benzo-a-pyrene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 2-methylphenol, 4-methylphenol, naphthalene, 4-nitrophenol, pentachlorophenol, pyrene, and 1,2,4-trichlorobenzene. All other data are valid and usable without qualification.

In request 18993, there were low recoveries for the QC sample. Ten analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, benzo-a-pyrene, 2-chloronaphthalene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 2-methylphenol, 4-methylphenol, naphthalene, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

For request 19011, the extraction holding time for the samples was exceeded by one day; therefore, all data are qualified UJ (there were no detected values). Also, bis(2-ethylhexyl)phthalate was found in the method blank due to laboratory contamination. EQLs were raised for samples in which it was detected at concentrations less than five times the amount detected in the blank. All other data are valid and usable without qualification.

In request 19107, there were low recoveries for the QC sample. The recovery for benzo[b]fluoranthene was less than 10% resulting in an R qualification for this analyte. Five analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, 1,2-dichlorobenzene, 2-methylphenol, pentachlorophenol, and 1,2,4-trichlorobenzene. All other data are valid and usable without qualification.

In request 19199, there were low recoveries for the QC sample. Fourteen analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, benzo-a-pyrene, 2-chloronaphthalene, dibenzofuran, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 2,6-dinitrotoluene, 2-methylphenol, 4-methylphenol, naphthalene, 4-nitrophenol, pentachlorophenol, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

In request 19249, there were low recoveries for the QC sample. Twelve analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, benzo-a-pyrene, dibenzofuran, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 2-methylphenol, 4-methylphenol, naphthalene, 4-nitrophenol, pentachlorophenol, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

In request 19260, there were low recoveries for the soil and water QC samples. Sixteen analytes had recoveries between 10 and 50% in the QC soil sample and their data are qualified UJ. They are anthracene, benzo-a-pyrene, bis(2-ethylhexyl)phthalate, 2-chloronaphthalene, dibenzofuran, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 2,6-dinitrotoluene, 2-methylphenol, 4-methylphenol, naphthalene, 4-nitrophenol, pentachlorophenol, pyrene, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. In the QC water sample four analytes had recoveries between 10 and 50% and their data are qualified UJ. They are 2-methylphenol, 4-methylphenol, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

In request 19316, there were low recoveries for the QC sample. Fifteen analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, benzo-a-pyrene, butylbenzylphthalate, 4-chloro-3-methylphenol, chrysene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 2-methylphenol, 4-methylphenol, naphthalene, 4-nitrophenol,

pentachlorophenol, pyrene, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

For request 19376, there were several QC problems. The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all less than 10% resulting in an R qualification for these analytes. Eighteen analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, benzo-a-pyrene, benzo[g,h,i]perylene, bis(2-chloroethyl)ether, bis(2-ethylhexyl)phthalate, 4-chloro-3-methylphenol, 2-chloronaphthalene, chrysene, dibenzofuran, diethylphthalate, 2,4-dinitrotoluene, 2,6-dinitrotoluene, 4-methylphenol, naphthalene, pentachlorophenol, pyrene, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

For request 19377, there were several QC problems. The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methphenol were all less than 10% resulting in an R qualification for these analytes. Eighteen analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, benzo-a-pyrene, benzo[g,h,i]perylene, bis(2-chloroethyl)ether, bis(2-ethylhexyl)phthalate, 4-chloro-3-methylphenol, 2-chloronaphthalene, chrysene, dibenzofuran, diethylphthalate, 2,4-dinitrotoluene, 2,6-dinitrotoluene, 4-methylphenol, naphthalene, pentachlorophenol, pyrene, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

In request 19420, there were low recoveries for the QC sample. The recoveries for 1,2-dichlorobenzene and 1,4-dichlorobenzene were less than 10% resulting in an R qualification for these analytes. Seven analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, benzo-a-pyrene, 0-chlorophenol, 2-methylphenol, 4-methylphenol, naphthalene, and 1,2,4-trichlorobenzene. All other data are valid and usable without qualification.

In request 19434, there were low recoveries for the QC sample. The recoveries for 1,2-dichlorobenzene and 1,4-dichlorobenzene were less than 10% resulting in an R qualification for these analytes. Twelve analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, benzo-a-pyrene, bis(2-ethylhexyl)phthalate, 2-chloronaphthalene, 2-methylphenol, 4-methylphenol, naphthalene, 4-nitrophenol, pentachlorophenol, pyrene, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

In request 19460, there were low recoveries for the QC sample. The recovery for 1,2-dichlorobenzene was less than 10% resulting in an R qualification for this analyte. Five analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, 2-chlorophenol, 2-methylphenol, naphthalene, and 1,2,4-trichlorobenzene. All other data are valid and usable without qualification.

For request 19487, there were low recoveries in the QC sample. Sixteen analytes had recoveries between 10 and 50% and are qualified UJ. They are anthracene, butylbenzylphthalate, 4-chloro-3-methylphenol, 2-chloronaphthalene, dibenzofuran, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 2,6-dinitrotoluene, 2-methylphenol, 4-methylphenol, naphthalene, 4-nitrophenol, pentachlorophenol, pyrene, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. Also, bis(2-ethylhexyl)phthalate was found in the method blank due to laboratory contamination. EQLs were raised for samples in which it was detected at concentrations less than five times the amount detected in the blank. All other data are valid and usable without qualification.

In requests 19503 and 19522, there were low recoveries for the QC sample. The recovery for 1,2-dichlorobenzene was less than 10% resulting in an R qualification for this analyte. Four analytes had recoveries between 10 and 50% and are qualified UJ. They are anthracene, 2-methylphenol, naphthalene, and 1,2,4-trichlorobenzene. All other data are valid and usable without qualification.

In request 19547, there was a surrogate problem for sample AAB9375. For this sample, the surrogate recovery for phenol-d5 was less than 10%. Therefore, the 14 associated analytes are qualified R. They are 4-chloro-3-methylphenol, o-chlorophenol, 2,4-dichlorophenol, 2,4-dimethylphenol, 2,4-dinitrophenol, 2-methyl-4,6-dinitrophenol, 2-methylphenol, 4-methylphenol, 2-nitrophenol, 4-nitrophenol, pentachlorophenol, phenol, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

For request 19570, the recommended extraction holding time was exceeded for all samples by several weeks. However, the samples were kept frozen from the time of collection until the time of extraction. Because the samples did exceed the recommended holding time, all analytes are qualified UJ.

In request 19630, there were low recoveries for the QC sample. The recovery for 1,2-dichlorobenzene and 2-methylphenol were less than 10% resulting in an R qualification for these analytes. Three analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, naphthalene, and 1,2,4-trichlorobenzene. All other data are valid and usable without qualification.

In request 19895, there were low recoveries for the QC sample. Five analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, fluorene, 1,2-dichlorobenzene, 2-methylphenol, and 1,2,4-trichlorobenzene. All other data are valid and usable without qualification.

For request 20010, all samples exceeded the recommended extraction holding time by seven days. However, the samples were kept preserved from the time of collection until the time of extraction. Because the samples did exceed the recommended holding time, all analytes are qualified UJ.

For request 20032, there were several QC problems. Nitroaniline[3-] and 4-nitroaniline had a percent difference greater than 30% in the continuing calibration and are, therefore, qualified UJ. Ten analytes had recoveries between 10 and 50% in the QC sample and their data are qualified UJ. They are anthracene, o-chlorophenol, 1,2-dichlorobenzene, 2,4-dichlorophenol, fluorene, 2-methylphenol, naphthalene, pentachlorophenol, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

In request 20147, there were low recoveries for the QC sample. The recoveries for anthracene, 1,2-dichlorobenzene, and 2-methylphenol were less than 10% resulting in an R qualification for these analytes. Four analytes had recoveries between 10 and 50% and their data are qualified UJ. They are 2,4-dichlorophenol, naphthalene, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. All other data are valid and usable without qualification.

In request 20209, there were low recoveries for the QC sample. The recoveries for hexachloroethane, 1,2-dichlorobenzene, and 2-methylphenol were less than 10% resulting in an R qualification for these analytes. Seventeen analytes had recoveries between 10 and 50% and their data are qualified UJ. They are anthracene, benzo-a-pyrene, benzo[g,h,i]perylene, bis(2-ethylhexyl)phthalate, 4-chloro-3-methylphenol, 2-chloronaphthalene, chrysene, dibenzofuran, diethylphthalate, 2,4-dinitrotoluene, 2,6-dinitrotoluene, 4-methylphenol, naphthalene, pentachlorophenol, pyrene, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol. For the two water samples in this request, the holding times were exceeded by six days. Therefore, all analytes in the water samples are qualified UJ. All other data are valid and usable without qualification.

4.2.3 High Explosives

Samples were analyzed for high explosives under many different request numbers. The QA/QC results for each request are discussed below.

For requests 17920, 18388, 18396, 18627, 18675, 18718, 18795, 18919, 19487, 19547, and 19570, all data are valid and usable without qualification.

For request 17850, the required extraction holding time of seven days for water samples was grossly exceeded (by greater than two months). Therefore, the data for the water samples in this request are qualified R.

For request 17918, o-nitrotoluene and tetryl had recoveries of less than 50% in the QC sample and their data are qualified UJ in all samples for this request. All other data are valid and usable without qualification.

For request 18008, all of the samples exceeded the extraction holding times. The water sample, AAB6207, exceeded the required holding time of 7 days by 50 days; therefore, the data for this sample are qualified R. The soil samples exceeded the recommended extraction holding time of 14 days for soils by 56 days. Analytical holding times were also exceeded. The samples were preserved until extraction and all other QC parameters were within allowed limits. Data for the soil sample analytes are qualified J or UJ for exceeding the holding times.

For requests 18010, 18274, 18285, 18539, 18557, 18568, 18630, 19015, 19144, 19251, 19270, 19631, 19896, 19933, and 20033, the soil samples exceeded the recommended extraction holding time of 14 days for soils by one to two months. Analytical holding times were also exceeded. The samples were preserved until extraction and all other QC parameters were within allowed limits. All analytes are qualified J or UJ for exceeding the holding times.

For requests 18307, 18398, 18771, 19108, 19376, 19460, 19503, and 19522, there were low recoveries of nitrobenzene in the QC sample (10 to 50%). Because of these low recoveries, nitrobenzene is qualified UJ in all of the samples in these requests. All other data are valid and usable without qualification.

For request 18451, there was a low recovery of o-nitrotoluene in the QC sample. Therefore, all values of this analyte are qualified UJ. All other data are valid and usable without qualification.

For request 18609, the soil samples exceeded the recommended extraction holding time of 14 days for soils by one to two months. Analytical holding times were also exceeded. The samples were preserved until extraction. There was also one low surrogate recovery (43%) for sample AAB3004. Data for all analytes are qualified J or UJ for exceeding the holding times.

For request 19012, nitrobenzene, hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX), and 2,4,6-trinitrotoluene had recoveries between 10 and 50% in the QC sample. However the soil

samples exceeded the recommended extraction holding time of 14 days for soils by one to two months. Analytical holding times were also exceeded. The samples were preserved until extraction. All analytes are qualified J or UJ for exceeding the recommended holding times for soil samples.

For requests 19420 and 19441, m-nitrotoluene, o-nitrotoluene, and p-nitrotoluene had low recoveries in the QC sample (10 to 50%) and are qualified UJ. All other data are valid and usable without qualification.

4.3 Radiochemistry Analyses

The results of QA/QC activities for radiological constituents will be discussed in an addendum to this report.

5.0 SPECIFIC RESULTS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 PRS 10-002(a)

PRS 10-002(a) consists of a former solid waste disposal pit (TA-10-44) for the former radiochemistry laboratory. No RCRA constituents are retained as COPCs in the human health screening assessment for PRS 10-002(a), and this PRS is recommended for removal from LANL's RCRA operating permit in a Class III permit modification.

5.1.1 History of PRS 10-002(a)

PRS 10-002(a) is discussed in Subsection 3.1.4 of the RFI Work Plan for OU 1079 (LANL 1992, 0783).

PRS 10-002(a) was a waste disposal pit used to dispose of spent chemicals, laboratory equipment, and trash such as gloves, rags, and acid bottles. The exact dates of use for this pit are not known, but are thought to have been between 1945 and 1950. It is also not known whether this pit was covered during or after the period of active use, but it is thought that after it was no longer in use in the early 1950s, it was covered with soil until cleanup activities began in 1963. The quantities of contaminants buried in the pit are also unknown. Specific contaminants listed as potentially present in the pit include strontium-90, uranium, barium, cadmium, platinum, benzene, carbon tetrachloride, unspecified acids (probably nitric, hydrochloric, hydrofluoric, and sulfuric acids), and unspecified organics and inorganics. Other radionuclides may have been in the waste, but were not documented.

The COPCs for PRS 10-002(a) include strontium-90, total uranium, barium, cadmium, TAL metals, VOCs, and SVOCs. The discussion of the results for radiological constituents will be included in an addendum to this report.

5.1.2 Description of PRS 10-002(a)

PRS 10-002(a) was a waste disposal pit, measuring 8 ft long by 5 ft wide by 12 ft deep. It was decontaminated and decommissioned in 1963. All waste items were removed and the pit was excavated to a depth of 15 ft. The pit was then backfilled with clean soil. The environmental setting of PRS 10-002(a) is described in Section 2.0 of this report.

5.1.3 Previous Investigations of PRS 10-002(a)

PRS 10-002(a) was investigated previous to the RFI discussed in this report. These previous investigations are described in Subsection 3.1.4.2.2 of the RFI Work Plan for OU 1079 and summarized below (LANL 1992, 0783).

During the 1963 decontamination and decommissioning, readings at the bottom of the pit after excavation indicated 1.5 mR/hr of beta/gamma radioactivity. In addition, five holes were drilled in or near PRS 10-002(a) during the Former Utilized Sites Remedial Action Program (FUSRAP) survey. These holes indicated no gross beta radioactivity above background, but did indicate above background gross alpha radioactivity.

5.1.4 Field Investigation of PRS 10-002(a)

The objective of the RFI at PRS 10-002(a) was to characterize the nature, concentration, and lateral and vertical extent of potential subsurface contamination related to historical activities at the site. The RFI was conducted in July 1994. The area of PRS 10-002(a) was characterized using one four-armed sampling array (Fig. 5.1.4-1). This array was centered on structure TA-10-44, and was oriented in the four cardinal directions (i.e., oriented north-south and east-west). The array consisted of 5 boreholes augered to 50 ft bgs. Boreholes were spaced 10 ft apart along the arms of the array.

At least four samples were collected from each borehole for a full suite of fixed laboratory analyses. These four samples were collected from 1) the midpoint of the first 10-ft interval, 2) the bottom of the borehole, 3) the interval exhibiting the highest field screening levels for radionuclides and VOCs, and 4) a random core interval retrieved from below 10 ft bgs and selected to target locations immediately underlying previously existing structures, exhibiting a change in color or obvious staining of the core, showing significant changes in lithology,

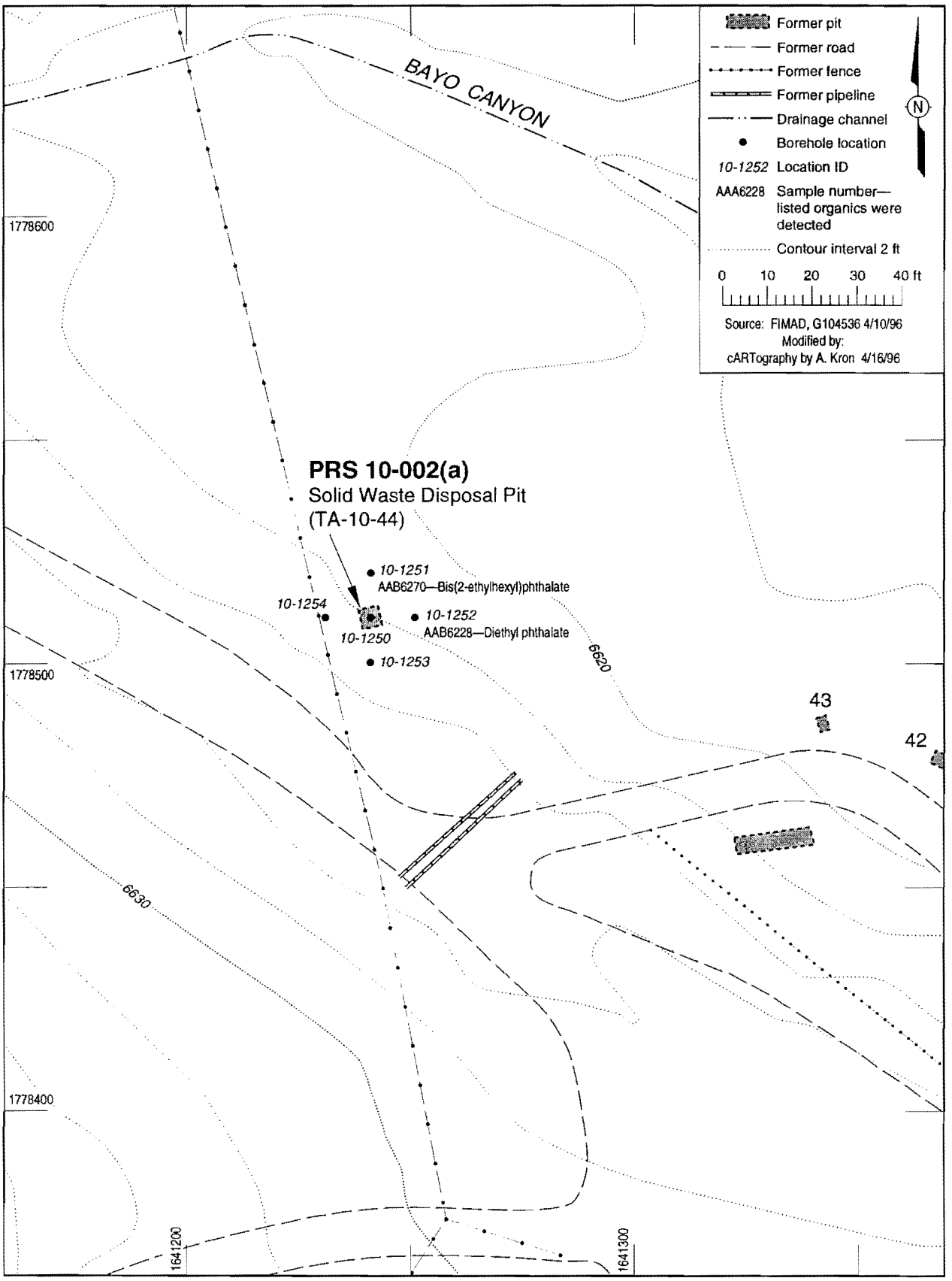


Fig. 5.1.4-1. Locations of PRS 10-002(a) samples and detected organic analytes.

and/or contacting the fill/tuff interface. Samples were submitted for analysis for SVOCs, TAL metals, total uranium, and strontium-90. All appropriate QC samples, including duplicates, field blanks, and rinsate blanks, were collected during subsurface soil sampling activities. Sampling information is summarized in Table 5.1.4-1.

VOCs were detected with a PID at concentrations of 11.4 and 66.4 ppm in the 0- to 5-ft interval in borehole 10-1252. Pine tree roots, which often emit natural organics that are detected by a PID, were observed in the core at intervals with elevated detections of VOCs. No elevated VOCs were detected with the PID from any other interval or borehole at PRS 10-002(a). No soil staining or odor was observed in any core with elevated detections of VOCs. Radioactive field screening data indicated that no radioactivity was detected above instrument background levels in this drilling array. Boreholes were backfilled with drill cuttings and completed with a 2-ft thick concrete cap.

There was one deviation from the approved sampling plan. Fifty percent of the total number of samples collected at PRS 10-002(a) and sent to the fixed laboratory for analysis were also to be analyzed for high explosives. In addition, the US EPA Region VI approval of the notice of deficiency (NOD) response for the RFI work plan stipulated that samples must be collected for VOC analysis regardless of field screening results. However, neither VOC nor high explosives analyses were requested for samples collected from the boreholes drilled at this PRS. Despite this deviation, there is sufficient evidence to suggest that VOCs and high explosive constituents are not present in the subsurface of this PRS at levels above SALs. Analytical results of samples collected from other PRSs in the TA-10 Subsurface Aggregate indicate that VOCs and high explosives are not present at levels above SALs. Also, VOC field screening of cores and samples from boreholes drilled at PRS 10-002(a) do not indicate the presence of VOCs.

TABLE 5.1.4-1

SUMMARY OF SAMPLES COLLECTED AT PRS 10-002(a)

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]				
				ISOTOPIC URANIUM	METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM
10-1250	AAB6215	3.3-3.9 ft	Alluvium	—	20371	20370	18206	20370
10-1250	AAB6222	25.5-26.1 ft	Alluvium	—	20371	20370	18206	20370
10-1250	AAB6226	40.7-41.3 ft	Pumice	20370	20371	20370	18206	20370
10-1250	AAB6227	49.4-50 ft	Pumice	—	20371	20370	18206	20370
10-1251	AAB6258	3.1-3.8 ft	Alluvium	—	19786	19760	18209	19760
10-1251	AAB6264	28.9-29.5 ft	Alluvium	—	19786	19760	18209	19760
10-1251	AAB6268	44-44.6 ft	Pumice	—	19786	19760	18209	19760
10-1251	AAB6270	49.4-50 ft	Pumice	—	19786	19760	18209	19760
10-1252	AAB6228	3.4-4 ft	Alluvium	—	18852	18932	18149	18932
10-1252	AAB6231–Field Duplicate	15.4-16.6 ft	Alluvium	—	18852	18932	18149	18932
10-1252	AAB6232	15.4-16.6 ft	Alluvium	—	18852	18932	18149	18932
10-1252	AAB6241	40.9-41.5 ft	Pumice	—	18852	18932	18149	18932
10-1252	AAB6243	49.4-50 ft	Pumice	—	18852	18932	18149	18932
10-1253	AAB6244	3.5-4.1 ft	Alluvium	—	18581	18713	18189	18713
10-1253	AAB6251	26.5-27.1 ft	Transitional	—	18581	18713	18189	18713
10-1253	AAB6256	49.4-50 ft	Pumice	—	18581	18713	18189	18713
10-1253	AAB6257	37.5-38.1 ft	Pumice	—	18581	18713	18189	18713
10-1254	AAB6271	3.1-4.3 ft	Alluvium	—	19786	19760	18209	19760
10-1254	AAB6272–Field Duplicate	3.1-4.3 ft	Alluvium	—	19786	19760	18209	19760
10-1254	AAB6281–Field Blank	28.4-29.3 ft	Alluvium	—	19786	19760	18209	19760
10-1254	AAB6282	NA[e]	Water	—	18421	18900	—	18900

TABLE 5.1.4-1 (CONTINUED)

SUMMARY OF SAMPLES COLLECTED AT PRS 10-002(a)

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]				
				ISOTOPIC URANIUM	METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM
10-1254	AAB6283–Equipment Blank	NA	Water	—	18421	18900	—	18900
10-1254	AAB6288	49.4-50 ft	Pumice	—	19786	19760	18209	19760
10-1254	AAB6289	33-33.6 ft	Pumice	—	19786	19760	18209	19760

[a] Listed five-digit number indicates request number under which analysis was performed.
[b] Metals = Target analyte list metals.
[c] Radionuclide results will be discussed in an addendum to this report.
[d] SVOCs = Semivolatile organic compounds.
[e] NA = Not applicable.
— = Sample was not analyzed for this suite.

5.1.5 Background Comparison for PRS 10-002(a)

No inorganics were detected at concentrations exceeding background screening values.

5.1.6 Evaluation of Organic Constituents for PRS 10-002(a)

Two organics, bis(2-ethylhexyl)phthalate and diethyl phthalate, were detected in samples collected from PRS 10-002(a). The results for these analytes are summarized in Table 5.1.6-1, and the locations where they were detected are shown on Fig. 5.1.4-1.

TABLE 5.1.6-1

PRS 10-002(a) SOIL CONCENTRATIONS FOR ORGANIC ANALYTES WITH VALUES GREATER THAN EQLs

SAMPLE ID	DEPTH (ft)	MATRIX TYPE	BIS(2-ETHYLHEXYL)PHTHALATE (mg/kg)	DIETHYL PHTHALATE (mg/kg)
		SAL (mg/kg)[a]	32	52 000
		EQL (mg/kg)[b]	0.33	0.33
AAB6270	49.4 – 50	Pumice	30	<0.42
AAB6228	3.4 – 4	Alluvium	<0.35	26

[a] SAL = Screening action level.
b EQL = Estimated quantitaiton limit.

5.1.7 Human Health Assessment for PRS 10-002(a)

5.1.7.1 Screening Assessment for PRS 10-002(a)

This subsection discusses the comparison with SALs for RCRA COPCs detected at levels greater than background UTLs or with no background data for comparison at PRS 10-002(a).

Greater than or equal to SALs. There were no chemicals detected above SALs.

No SAL. All of the detected chemicals had SALs for comparison.

Below SAL. Two chemicals, bis(2-ethylhexyl)phthalate and diethyl phthalate, were detected in concentrations below their respective SALs.

To evaluate multiple chemical effects for this data set, COPCs detected below their respective SALs were grouped according to their toxicological effects (carcinogenic or noncarcinogenic). There is only one chemical, bis(2-ethylhexyl)phthalate, that falls in the carcinogenic category. Because there are no other carcinogens with which to combine bis(2-ethylhexyl)phthalate, the

multiple chemical evaluation for carcinogens is not conducted. There is only one chemical, diethyl phthalate, that falls in the noncarcinogenic category. Because there are no other noncarcinogens with which to combine diethyl phthalate, the multiple chemical evaluation for noncarcinogens is not conducted. Therefore, all of the chemicals with concentrations below their respective SALs are eliminated as COPCs.

At the conclusion of this screening assessment, no RCRA chemicals remain as COPCs.

5.1.7.2 Risk Assessment for PRS 10-002(a)

No risk assessment was performed for PRS 10-002(a) because there were no RCRA chemicals retained as COPCs in the screening assessment.

5.1.8 Ecological Assessment for PRS 10-002(a)

The preliminary ecological screening assessment indicates that this site is located in a floodplain and is potentially within the foraging range of the spotted bat and peregrine falcon. These factors must be taken into consideration should any remedial action be undertaken at this site.

Further ecological risk assessment at this site will be deferred until the site can be assessed as part of the new ecological exposure unit approach that is being developed by LANL in conjunction with EPA Region VI and the New Mexico Environment Department.

5.1.9 Extent of Contamination for PRS 10-002(a)

There were no RCRA chemicals retained as COPCs in the screening assessment for PRS 10-002(a).

5.1.10 Conclusions and Recommendations for PRS 10-002(a)

Based on the results of the Phase I RFI, PRS 10-002(a) is recommended for removal from the Hazardous and Solid Waste Amendments (HSWA) Module of LANL's RCRA operating permit. This recommendation is based on LANL's No Further Action Criteria Policy, criterion 4, which states that the PRS has been characterized or remediated in accordance with current applicable state or federal regulations, and available data indicate that contaminants of concern are either not present or are present in concentrations that pose an acceptable level of risk. A Class III permit modification will be requested to remove PRS 10-002(a) from the HSWA Module of LANL's RCRA operating permit (Environmental Restoration Project 1995, 1173).

5.2 PRS 10-002(b)

PRS 10-002(b) consists of a former solid waste disposal pit (TA-10-48) for the former radiochemistry laboratory. No RCRA constituents are retained as COPCs in the human health screening assessment for PRS 10-002(b), and this PRS is recommended for removal from LANL's RCRA operating permit in a Class III permit modification.

5.2.1 History of PRS 10-002(b)

PRS 10-002(b) is discussed in Subsection 3.1.4 of the RFI Work Plan for OU 1079 (LANL 1992, 0783).

PRS 10-002(b) was a waste disposal pit used to dispose of spent chemicals, laboratory equipment, and trash such as gloves, rags, and acid bottles. In addition, this pit was used to dispose of residues from the lanthanum-140 extraction process performed in the radiochemistry laboratory. The exact dates of use for this pit are not known, but are thought to have been between 1945 and 1950. After it was no longer in use in the early 1950s, the pit was covered with soil until cleanup activities began in 1963. The quantities of contaminants buried in the pit are unknown. Specific contaminants listed as potentially present in the pit include strontium-90, uranium, barium, cadmium, platinum, benzene, carbon tetrachloride, unspecified acids (probably nitric, hydrochloric, hydrofluoric, and sulfuric acids), and unspecified organics and inorganics. Other radionuclides may have been in the waste but were not documented.

The COPCs for PRS 10-002(b) include strontium-90, total uranium, barium, cadmium, TAL metals, VOCs, and SVOCs. The discussion of the results for radiological constituents will be included in an addendum to this report.

5.2.2 Description of PRS 10-002(b)

PRS 10-002(b) was a waste disposal pit that was divided into two sections, each measuring 5 ft by 5 ft by 10 ft. The pit sections were lined with boards and had wood covers. PRS 10-0002(b) was decontaminated and decommissioned in 1963. All solid waste was removed and the pit was excavated to a depth of 26 ft. The pit was then backfilled with clean fill. The environmental setting of PRS 10-002(b) is described in Section 2.0 of this report.

5.2.3 Previous Investigations of PRS 10-002(b)

PRS 10-002(a) was investigated previous to the RFI discussed in this report. These previous investigations are described in Subsection 3.1.4.3.2 of the RFI Work Plan for OU 1079 and summarized below (LANL 1992, 0783).

During the 1963 decontamination and decommissioning, it was determined that slight strontium contamination remained in the bottom of the pit. However, because gross beta radioactivity was approaching background, the pit was backfilled with clean fill.

Several test holes were drilled at or near PRS 10-002(b) in 1973 and 1974. Test hole Mq, drilled in 1973 to a depth of approximately 38 ft, was a few meters north of the PRS. Plutonium and strontium-90 analyses indicated only background activity, indicating no subsurface migration had occurred from the pit. A test hole drilled in the pit in 1974 to a depth of approximately 11 ft contained only background gross alpha and beta radioactivity.

During the FUSRAP survey, five holes were augered in or near PRS 10-002(b). Contrary to the results from the 1973 and 1974 test holes, the FUSRAP boreholes indicated gross beta activity to 290 pCi/g, especially at depths of 15 to 20 ft.

5.2.4 Field Investigation of PRS 10-002(b)

The objective of the RFI at PRS 10-002(b) was to characterize the nature, concentration, and lateral and vertical extent of potential subsurface contamination related to historical activities at the site. The RFI was conduced in July 1994. The area of PRS 10-002(b) was characterized using two four-armed sampling arrays (see Fig. 5.2.4-1). The first of these arrays consisted of eight boreholes and was drilled according to the survey coordinates of the array, which were thought to be centered on structure TA-10-48. However, it was later determined that this original array was too far west of the location of the former waste pit and the beta contamination detected during previous investigations. It was determined that the center of the array should have been 50 ft east of the original surveyed location, and a second sampling array consisting of eight boreholes was drilled at that location. Both arrays were oriented in the four cardinal directions (i.e., oriented north-south and east-west). All boreholes were drilled to approximately 50 ft bgs. Boreholes were spaced 5 ft apart along the arms of the original array and 10 ft apart along the arms of the second array.

At least four samples were collected from each borehole for a full suite of fixed laboratory analyses. These four samples were collected from 1) the midpoint of the first 10-ft interval, 2) the bottom of the borehole, 3) the interval exhibiting the highest field screening levels for radionuclides and VOCs, and 4) a random core interval retrieved from below 10 ft bgs and selected to target locations immediately underlying previously existing structures, exhibiting a change in color or obvious staining of the core, showing significant changes in lithology, and/or contacting the fill/tuff interface. Samples were submitted for analysis for SVOCs, TAL metals, total uranium, and strontium-90. If field screening revealed elevated gross radioactivity,

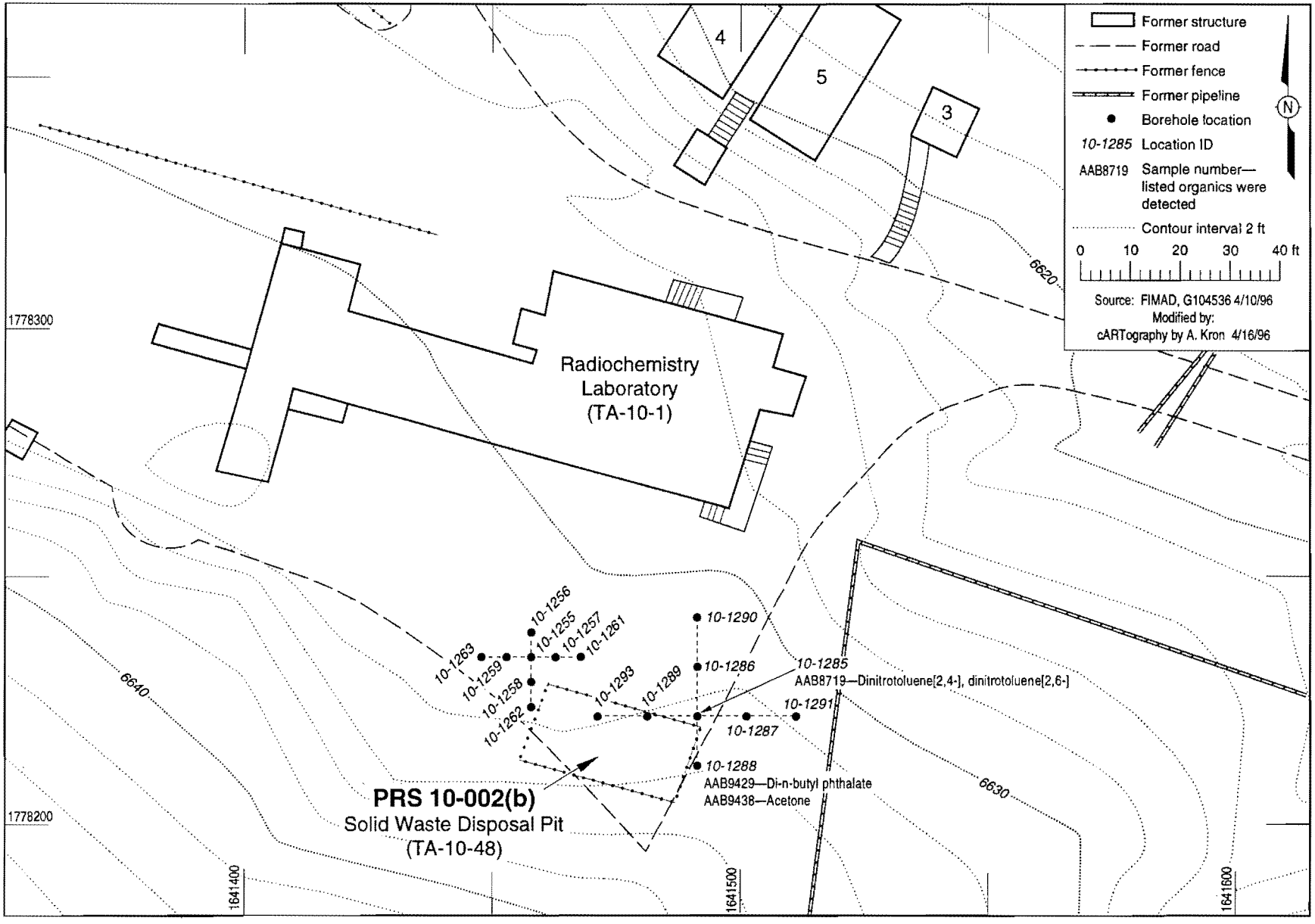


Fig. 5.2.4-1. Locations of PRS 10-002(b) samples and detected organic analytes.

the laboratory analysis request also included isotopic uranium and gamma spectroscopy. Fifty percent of the total number of samples sent to the fixed laboratory for analysis were also analyzed for high explosives. All appropriate QC samples, including duplicates, field blanks, and rinsate blanks, were collected during subsurface soil sampling activities. Sampling information is summarized in Table 5.2.4-1.

Elevated VOC concentrations were detected in four boreholes, as shown in Table 5.2.4-2. Samples for VOC analysis by EPA SW-846 method 8240 were collected from each of the intervals in which elevated VOC concentrations were detected. The organics detected in the core from boreholes 10-1262 and 10-1293 at the interval between 0 and 2.5 ft bgs appeared to be a result of ponderosa pine roots that were present in the core. No soil staining or odor was observed in any core in which elevated VOCs were detected. Radioactive field screening with hand-held instruments indicated elevated radioactivity was present only in borehole 10-1289 from 10 ft to 14 ft bgs.

All boreholes were backfilled with drill cuttings and completed with a 2-ft thick concrete cap except borehole 10-1289. Because MRAL analytical results indicated the presence of elevated beta radioactivity in samples collected from this borehole at a depth of approximately 11.5 ft to 13 ft bgs, borehole 10-1289 was backfilled with a cement/bentonite slurry.

The following deviations from the work plan occurred.

The US EPA Region VI approval of the NOD Response for the RFI Work Plan for OU 1079 stipulated that samples must be collected for VOC analysis regardless of field screening results. However, VOC analyses were only requested for those samples collected from intervals that exhibited elevated VOCs based on hand-held field screening. Despite this deviation, there is sufficient evidence to suggest that VOCs are not present in the subsurface of this PRS at levels above SALs. Analytical results of samples collected from other PRSs in the TA-10 Subsurface Aggregate indicate that VOCs are not present at levels above SALs. Also, VOC field screening of cores and samples from boreholes drilled at PRS 10-002(b) do not indicate the presence of elevated levels of VOCs.

An additional eight-borehole array was added to assess the presence of beta contamination previously detected in the area of TA-10-48. Prior to the start of the field sampling program,

inconsistencies were found between the figures showing the location of the waste pit and array in the work plan, the written descriptions of the array, and the surveyed coordinates of the array. It was originally decided that the surveyed coordinates were likely the most accurate, and that is where the drilling began. During the course of drilling, additional questions were raised regarding the location of the array in reference to the location of the waste pit and previously detected beta contamination. As discussed above, the array appeared to be too far west of the location of the former waste pit and previously detected beta contamination. It was determined that the surveyed coordinates were incorrect, and that the center of the array should have been 50 ft to the east of the original surveyed location. The second array was drilled at this new location.

Borehole 10-1260 was supposed to be included in the original array targeting the previously detected beta contamination associated with TA-10-48. However, the array was never completed because it was determined to be incorrectly located and borehole 10-1260 was never drilled.

Borehole 10-1292 was supposed to be included in the new drilling array targeting TA-10-48, but was not drilled because it was located on steep terrain and adjacent to a large tree, which prevented the safe operation of the drilling rig.

TABLE 5.2.4-1

SUMMARY OF SAMPLES COLLECTED AT PRS 10-002(b)

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]							
				HIGH EXPLOSIVES	ISOTOPIC THORIUM	ISOTOPIC URANIUM	METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM	VOCs[e]
10-1255	AAB6501	3.6-4.2 ft	Alluvium	—	—	—	19401	19695	18621	19695	—
10-1255	AAB6507	28.7-29.3 ft	Alluvium	—	—	—	19401	19695	18621	19695	—
10-1255	AAB6510	48.7-49.4 ft	Pumice	—	—	—	19401	19695	18621	19695	—
10-1255	AAB6511	20-20.7 ft	Alluvium	—	—	—	19401	19695	18621	19695	—
10-1256	AAB6565	3.9-4.6 ft	Alluvium	—	—	—	19402	19809	18768	19809	—
10-1256	AAB6566–Field Duplicate	3.9-4.6 ft	Alluvium	—	—	—	19402	19809	18768	19809	—
10-1256	AAB8647	28.5-29 ft	Pumice	—	—	—	19402	19809	18768	19809	—
10-1256	AAB8651	47.4-48.1 ft	Pumice	—	—	—	19402	19809	18768	19809	—
10-1256	AAB8652	35-35.8 ft	Pumice	—	—	—	19402	19809	18768	19809	—
10-1257	AAB6537	3.6-4.2 ft	Alluvium	18718	—	—	19400	19808	18712	19808	—
10-1257	AAB6538 Field Blank	NA[f]	Water	18718	—	—	19400	19808	18712	19808	—
10-1257	AAB6539 Equipment Blank	NA	Water	18718	—	—	19400	19808	18712	19808	—
10-1257	AAB6546	28.4-29.1 ft	Qbo[g]	18718	—	—	19400	19808	18712	19808	—
10-1257	AAB6550	48.5-49.4 ft	Pumice	18718	—	—	19400	19808	18712	19808	—
10-1257	AAB6551	20-20.8 ft	Transitional	18718	—	—	19400	19808	18712	19808	—
10-1258	AAB8653	3.5-4.1 ft	Alluvium	18795	—	—	19397	19811	18793	19811	—
10-1258	AAB8661	28.5-29.1 ft	Qbo	18795	—	—	19397	19811	18793	19811	—
10-1258	AAB8665	48.6-49.4 ft	Pumice	18795	—	—	19397	19811	18793	19811	—
10-1258	AAB8666	15-15.8 ft	Alluvium	18795	—	—	19397	19811	18793	19811	—
10-1259	AAB6512	2.8-3.7 ft	Alluvium	—	—	—	19401	19695	18621	19695	—
10-1259	AAB6517	18.7-19.1 ft	Alluvium	—	—	—	—	—	—	—	18697
10-1259	AAB6520	28.5-29.2 ft	Qbo	—	—	—	19404	19804	18660	19804	—
10-1259	AAB6524	48.6-49.5 ft	Qbo	—	—	—	19404	19804	18660	19804	—
10-1259	AAB6525	15.2-16 ft	Alluvium	—	—	—	19404	19804	18660	19804	—
10-1261	AAB6552	2.8-3.8 ft	Alluvium	18771	—	—	19402	19809	18768	19809	—
10-1261	AAB6558	25.6-26.2 ft	Transitional	18771	—	—	19402	19809	18768	19809	—
10-1261	AAB6562	48.4-49.3 ft	Pumice	18771	—	—	19402	19809	18768	19809	—
10-1261	AAB6563	15-15.8 ft	Alluvium	18771	—	—	19402	19809	18768	19809	—
10-1262	AAB8667	1.8-1.9 ft	Alluvium	—	—	—	—	—	—	—	18827
10-1262	AAB8668	2.7-3.3 ft	Alluvium	—	—	—	19410	19812	18827	19812	—

TABLE 5.2.4-1 (CONTINUED)

SUMMARY OF SAMPLES COLLECTED AT PRS 10-002(b)

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]							
				HIGH EXPLOSIVES	ISOTOPIC THORIUM	ISOTOPIC URANIUM	METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM	VOCs[e]
10-1262	AAB8674	29.5-29.8 ft	Transitional	—	—	—	19410	19812	18827	19812	—
10-1262	AAB8678	47.3-48.3 ft	Pumice	—	—	—	19410	19812	18827	19812	—
10-1262	AAB8679	15-15.8 ft	Alluvium	—	—	—	19410	19812	18827	19812	—
10-1263	AAB6526	3.1-4 ft	Alluvium	18675	—	—	19409	19805	18668	19805	—
10-1263	AAB6527–Field Duplicate	3.1-4 ft	Alluvium	18675	—	—	19409	19805	18668	19805	—
10-1263	AAB6532	28.9-29.6 ft	Qbo	18675	—	—	19409	19805	18668	19805	—
10-1263	AAB6535	41.5-42 ft	Qbo	18675	—	—	19409	19805	18668	19805	—
10-1263	AAB6536	16-16.7 ft	Alluvium	18675	—	—	19409	19805	18668	19805	—
10-1285	AAB8680	3.6-4 ft	Alluvium	18919	—	—	19431	19814	18917	19814	—
10-1285	AAB8685	22.5-23.5 ft	Qbo	18919	—	—	19431	19814	18917	19814	—
10-1285	AAB8686–Field Duplicate	22.5-23.5 ft	Qbo	18919	—	—	19431	19814	18917	19814	—
10-1285	AAB8687–Field Blank	NA	Water	18919	—	—	19431	19814	18917	19814	—
10-1285	AAB8688–Equipment Blank	NA	Water	18919	—	—	19431	19814	18917	19814	—
10-1285	AAB8719	46.6-47.2 ft	Pumice	19012	—	—	19430	19815	18993	19815	—
10-1285	AAB8722	30-30.7 ft	Qbo	19012	—	—	19430	19815	18993	19815	—
10-1286	AAB8691	4.2-4.6 ft	Alluvium	19012	—	—	19430	19815	18993	19815	—
10-1286	AAB8697	24-24.4 ft	Qbo	19012	—	—	19430	19815	18993	19815	—
10-1286	AAB8727	49.1-49.6 ft	Pumice	19012	—	—	19430	19815	18993	19815	—
10-1286	AAB8728	15-15.4 ft	Alluvium	19012	—	—	19430	19815	18993	19815	—
10-1287	AAB8715	3.5-4.1 ft	Alluvium	—	—	—	19428	19890	19042	19890	19042
10-1287	AAB9201	13.5-14 ft	Alluvium	—	—	—	—	—	—	—	—
10-1287	AAB9204	29.1-30 ft	Qbo	—	—	—	19428	19890	19042	19890	19042
10-1287	AAB9205–Field Duplicate	29.1-30 ft	Qbo	—	—	—	19428	19890	19042	19890	19042
10-1287	AAB9209	48.5-49.1 ft	Pumice	—	—	—	19428	19890	19042	19890	19042
10-1287	AAB9210	10-10.8 ft	Alluvium	—	—	—	19428	19890	19042	19890	19042
10-1288	AAB9429	4.2-5 ft	Alluvium	—	—	—	19810	19887	19249	19887	19249
10-1288	AAB9433	22.5-23.5 ft	Alluvium	—	—	—	19810	19887	19249	19887	19249
10-1288	AAB9438	46.2-47 ft	Qbo	—	—	—	19818	19880	19260	19880	19260
10-1288	AAB9439	47.8-48.5 ft	Pumice	—	—	—	19818	19880	19260	19880	19260

TABLE 5.2.4-1 (CONTINUED)

SUMMARY OF SAMPLES COLLECTED AT PRS 10-002(b)

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]							
				HIGH EXPLOSIVES	ISOTOPIC THORIUM	ISOTOPIC URANIUM	METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM	VOCs[e]
10-1288	AAB9440–Field Blank	47.8-48.5 ft	Water	—	—	—	19818	19880	19260	19880	—
10-1288	AAB9441–Equipment Blank	47.8-48.5 ft	Water	—	—	—	19818	19880	19260	19880	—
10-1289	AAB9224	3.3-4.1 ft	Alluvium	—	—	—	19445	19892	19107	19892	19107
10-1289	AAB9227	11.4-12.1 ft	Alluvium	—	19892	19892	19445	19892	19107	19892	19107
10-1289	AAB9231	28.9-29.3 ft	Qbo	—	—	—	19445	19892	19107	19892	19107
10-1289	AAB9234	48.5-49.4 ft	Pumice	—	—	—	19445	19892	19107	19892	19107
10-1290	AAB8701	4.1-4.5 ft	Alluvium	—	—	—	19429	19884	18995	19884	—
10-1290	AAB8709	29-29.4 ft	Qbo	—	—	—	19429	19884	18995	19884	—
10-1290	AAB8712	48-48.5 ft	Pumice	—	—	—	19428	19890	19042	19890	—
10-1290	AAB8714	15-15.4 ft	Alluvium	—	—	—	19428	19890	19042	19890	—
10-1291	AAB9211	2.8-3.7 ft	Alluvium	19108	—	—	19445	19892	19107	19892	19107
10-1291	AAB9216	28.2-29 ft	Qbo	19108	—	—	19445	19892	19107	19892	19107
10-1291	AAB9222	48.5-49.5 ft	Pumice	19108	—	—	19445	19892	19107	19892	19107
10-1291	AAB9223	15-15.8 ft	Alluvium	19108	—	—	19445	19892	19107	19892	19107
10-1293	AAB9235	2.5-3.9 ft	Alluvium	19251	—	—	19810	19887	19249	19887	19249
10-1293	AAB9236–Field Duplicate	2.5-3.9 ft	Alluvium	19251	—	—	19810	19887	19249	19887	19249
10-1293	AAB9242	28.7-29.4 ft	Qbo	19251	—	—	19810	19887	19249	19887	19249
10-1293	AAB9246	48.6-49.6 ft	Pumice	19251	—	—	19810	19887	19249	19887	19249
10-1293	AAB9247	10-10.8 ft	Alluvium	19251	—	—	19810	19887	19249	19887	19249

[a] Listed five-digit number indicates request number under which analysis was performed.
[b] Metals = Target analyte list metals.
[c] Radionuclide results will be discussed in an addendum to this report.
[d] SVOCs = Semivolatile organic compounds.
[e] VOCs = Volatile organic compounds.
[f] NA = Not applicable.
[g] Qbo = The Otowi Member of the Bandelier Tuff.
-- = Sample was not analyzed for this suite.

TABLE 5.2.4-2

FIELD SCREENING RESULTS FOR VOLATILE ORGANIC VAPORS AT PRS 10-002(b)[a]

	MEASURED CONCENTRATION OF VOLATILE ORGANIC VAPORS BY DEPTH (parts per million)				
BOREHOLE	0 – 10 ft	10 – 20 ft	20 – 30 ft	30 – 40 ft	40 – 50 ft
10-1255	1.5	0	0	0	0
10-1256	0	0	0	0	0
10-1257	0	0	0	0	0
10-1258	0	0	0	0	0
10-1259	50	7	1	0	0
10-1261	0	0	0	0	0
10-1262	30, 200, 60, 50, 40	10, 15	0	0	0
10-1263	0	0	0	0	0
10-1285	0	0	0	0	0
10-1286	0	0	0	0	0
10-1287	0	20	0	0	0
10-1288	0	0	0	0	0
10-1289	0	0	0	0	0
10-1290	0	0	0	0	0
10-1291	0	0	0	0	0
10-1293	30	0	0	0	0

[a] Field screening for volatile organic vapors was conducted using a photoionization detector (PID).

5.2.5 Background Comparisons for PRS 10-002(b)

Two inorganics, copper and zinc, had concentrations greater than the background screening values. Statistical comparisons were made between copper and zinc PRS data and LANL-wide soil background data. These statistical comparisons are discussed in detail in Appendix D. As shown in Table D-2 and Figs. D-6 and D-13 in Appendix D, the concentrations of copper and zinc are not statistically elevated compared to the LANL-wide soil data. Therefore, no inorganics exceed soil background concentrations, and no inorganics are carried forward to the screening assessment for PRS 10-002(b).

5.2.6 Evaluation of Organic Constituents for PRS 10-002(b)

Four organics, dinitrotoluene[2,4-], dinitrotoluene[2,6-], di-n-butyl phthalate, and acetone, were detected in samples collected from PRS 10-002(b). The results for these analytes are summarized in Table 5.2.6-1, and the locations where they were detected are shown on Fig. 5.2.4-1.

TABLE 5.2.6-1

PRS 10-002(b) SOIL CONCENTRATION FOR ORGANIC ANALYTES WITH VALUES GREATER THAN EQLs

SAMPLE ID	DEPTH (ft)	MATRIX TYPE	ACETONE (mg/kg)	DI-N-BUTYL PHTHALATE (mg/kg)	DINITRO-TOLUENE[2,4-] (mg/kg)	DINITRO-TOLUENE[2,6-] (mg/kg)
		SAL (mg/kg)[a]	2 000	6 500	130	65
		EQL (mg/kg)[b]	0.01	0.33	0.33	0.33
AAB9438	46.2 – 47	Qbo[c]	0.088	<0.36	<0.36	<0.36
AAB9429	4.2 – 5	Alluvium	<0.021	0.42	<0.34	<0.34
AAB8719	46.6 – 47.2	Pumice	–	<0.38	0.31	0.31

[a] SAL = Screening action level.
[b] EQL = Estimated quantitation limit.
[c] Qbo = The Otowi Member of the Bandelier Tuff.

5.2.7 Human Health Assessment for PRSs 10-002(b)

5.2.7.1 Screening Assessment for PRS 10-002(b)

This subsection discusses the comparison with SALs for RCRA COPCs detected at levels greater than background UTLs or with no background data for comparison at PRS 10-002(b).

Greater than or equal to SAL. No chemicals were detected above SALs.

No SAL. All of the chemicals detected at PRS 10-002(b) had SALs for comparison.

Below SAL. Four chemicals, acetone, di-n-butyl phthalate, dinitrotoluene[2,4-], and dinitrotoluene[2,6-], were detected in concentrations below their respective SALs.

To evaluate multiple chemical effects for this data set, COPCs detected below their respective SALs were grouped according to their toxicological effects (carcinogenic or noncarcinogenic). SALs for all chemicals were normalized and summed as described in Subsection 3.4.1. The results of the analysis are shown in Table 5.2.7-1

The results of the multiple chemical evaluation based on both carcinogenic and noncarcinogenic effects are less than one, indicating that potential resultant adverse human health effects from exposure are unlikely. Therefore, all of the chemicals with concentrations below their respective SALs are eliminated as COPCs.

At the conclusion of this screening assessment, no RCRA chemicals remain as COPCs.

TABLE 5.2.7-1

MULTIPLE CHEMICAL EVALUATION FOR PRS 10-002(b)

CHEMICAL	SAMPLE VALUE (mg/kg)	SAL[a] (mg/kg)	NORMALIZED VALUE
SAL BASED ON CARCINOGENIC EFFECTS			
Dinitrotoluene[2,4-]	0.31	1 30	0.0024
Dinitrotoluene[2,6-]	0.31	65	0.0048
NORMALIZED SUM			0.0072
SAL BASED ON NONCARCINOGENIC EFFECTS			
Acetone	0.088	2 000	0.000044
Di-n-butyl phthalate	0.42	6 500	0.000065
NORMALIZED SUM			0.00011

a SAL = Screening action level.

5.2.7.2 Risk Assessment for PRS 10-002(b)

No risk assessment was performed for PRS 10-002(b) because there were no chemicals detected above SAL and the results of the multiple chemical evaluation conducted for chemicals detected below SALs indicate that potential resultant adverse human health effects from exposure are unlikely.

5.2.8 Ecological Assessment for PRS 10-002(b)

The preliminary ecological screening assessment indicates that this site is located in a floodplain and is potentially within the foraging range of the spotted bat and peregrine falcon. These factors must be taken into consideration should any remedial action be undertaken at this site.

Further ecological risk assessment at this site will be deferred until the site can be assessed as part of the new ecological exposure unit approach that is being developed by LANL in conjunction with EPA Region VI and the New Mexico Environment Department.

5.2.9 Extent of Contamination for PRS 10-002(b)

There were no RCRA chemicals retained as COPCs in the screening assessment for PRS 10-002(b).

5.2.10 Conclusions and Recommendations for PRS 10-002(b)

Based on the results of the Phase I RFI, PRS 10-002(b) is recommended for removal from the HSWA Module of LANL's RCRA operating permit. This recommendation is based on LANL's No Further Action Criteria Policy, criterion 4, which states that the PRS has been characterized or remediated in accordance with current applicable state or federal regulations, and available data indicate that contaminants of concern are either not present or are present in concentrations that pose an acceptable level of risk. A Class III permit modification will be requested to remove PRS 10-002(b) from the HSWA Module of LANL's RCRA operating permit (Environmental Restoration Project 1995, 1173).

5.3 PRSs 10-003(a-o) and 10-007

The Central Area includes the former radiochemistry laboratory liquid waste disposal complex [PRSs 10-003(a-o)] as well as the building debris landfill (PRS 10-007) created during the 1963 decontamination and decommissioning of TA-10. No RCRA constituents are retained as COPCs in the human health screening assessment for the Central Area, and PRSs 10-003(a-o) and 10-007 are recommended for removal from the RCRA permit in a Class III permit modification.

5.3.1 History of PRSs 10-003(a-o) and 10-007

The PRSs of the TA-10 Subsurface Aggregate Central Area [PRSs 10-003(a-o) and 10-007] are discussed in Subsection 3.1.4 of the RFI Work Plan for OU 1079 (LANL 1992, 0783).

PRSs 10-003(a-o) were part of a liquid waste disposal complex that served the radiochemistry laboratory, TA-10-1. The radiochemistry laboratory was used to separate, precipitate, and encapsulate lanthanum-140 into sources. The liquid disposal complex consisted of liquid disposal pits, industrial waste (acid waste) manholes and septic tanks, industrial waste (acid waste) lines, and a leach field that received the liquid radioactive and chemical wastes generated by radiochemistry laboratory operations.

PRS 10-007 was a landfill located near the intermittent stream at TA-10. PRS 10-007 was used to dispose of building debris from the decommissioning of TA-10 facilities in 1963. Items in the landfill include concrete from the two firing site detonation control buildings (TA-10-13 and TA-10-15), as well as soil from the vicinity of the inspection building (TA-10-8), one of the battery buildings (TA-10-14), and building TA-10-13 (LANL 1992, 0783).

Because radionuclides were used and disposed of at the site, the COPCs in the Central Area include strontium-90, total uranium, barium, cadmium, lead, beryllium, TAL metals, VOCs, and SVOCs. The discussion of the results for radiological constituents will be included in an addendum to this report.

5.3.2 Description of PRSs 10-003(a-o) and 10-007

The entire liquid waste disposal complex [PRSs 10-003(a-o)] was excavated to a depth of approximately 18.6 ft during the 1963 decontamination and decommissioning of TA-10. The excavation was then backfilled with soil from other parts of Bayo Canyon as well as building debris from the TA-10 decontamination and decommissioning. The landfill (PRS 10-007) was sited within the excavation created by the removal of the liquid waste disposal complex. The exact size of the landfill is not known. The environmental setting of PRSs 10-003(a-o) and 10-007 is discussed in Section 2.0 of this report.

5.3.3 Previous Investigations of PRSs 10-003(a-o) and 10-007

PRSs 10-003(a-o) were investigated previous to the RFI discussed in this report. These previous investigations are described in Subsection 3.1.4.1.2 of the RFI Work Plan for OU 1079 and summarized below (LANL 1992, 0783).

During the 1963 decontamination and decommissioning activities, radiation levels in the Central Area excavation area ranged as high as 35 mR/hr. It was recognized at the time of decommissioning that potentially radioactive materials may have remained in the canyon. Periodic surveys were therefore conducted from 1966 to 1976.

In 1973, a test hole was drilled to a depth of 18.9 ft in the vicinity of PRS 10-003(g), a former industrial waste (acid waste) manhole. The drill encountered blocks of concrete from the building debris left in the excavation during decommissioning, and sample analyses indicated surface and subsurface strontium-90 contamination. Five additional test holes were drilled in 1974. Samples from these holes had gross beta activity at levels above background, and there was some indication of movement of the contamination. Extensive sampling was also performed at the former radiochemistry laboratory (TA-10-1) and the entire liquid waste disposal complex [PRS 10-003(a-o)] through trenching and drilling during the FUSRAP survey. The FUSRAP results indicated that subsurface contamination was mostly low level and was within 31 ft of the radiochemistry laboratory and the liquid waste disposal complex. The highest levels were found near PRS 10-003(b), a former liquid waste disposal pit.

No investigations specific to PRS 10-007 occurred previous to the RFI discussed in this report.

5.3.4 Field Investigation of PRSs 10-003(a-o) and 10-007

The objective of the RFI at PRSs 10-003(a-o) and 10-007 was to characterize the nature, concentration, and lateral and vertical extent of potential subsurface contamination related to historical activities at the site. The RFI was conducted from June through November 1994. The TA-10 Central Area was characterized using seven four-armed sampling arrays (see Fig. 5.3.4-1). These arrays were generally centered on or near former waste pits, drain lines, manholes, septic tanks, or known areas of subsurface beta contamination as determined from previous studies. The arrays consisted of 5, 9, or 10 boreholes with depths of 50 ft bgs. The arms of some arrays were oriented along former drain lines, trenches, surface depressions, or the long axis of suspected areas of contamination. The arms of other arrays were oriented in the four cardinal directions (i.e., oriented north-south and east-west). Boreholes were spaced 5 to 15 ft apart along the arms of each array.

At least four samples were collected from each borehole for a full suite of fixed laboratory analyses. These four samples were collected from 1) the midpoint of the first 10-ft interval, 2) the bottom of the borehole, 3) the interval exhibiting the highest field screening levels for radionuclides and VOCs, and 4) a random core interval retrieved from below 10 ft bgs and selected to target locations immediately underlying previously existing structures, exhibiting a change in color or obvious staining of the core, showing significant changes in lithology, and/or contacting the fill/tuff interface. Samples were submitted for analysis for SVOCs, TAL metals, total uranium, and strontium-90. If field screening revealed elevated gross radioactivity, the laboratory analysis request also included isotopic uranium and gamma spectroscopy. Fifty percent of the total number of samples sent to the fixed laboratory for analysis were also analyzed for high explosives. All appropriate QC samples, including duplicates, field blanks, and rinsate blanks, were collected during subsurface soil sampling activities. Sampling information is summarized in Table 5.3.4-1.

Elevated VOC concentrations, ranging from 4 ppm to 15 ppm, were detected in four boreholes. No soil staining or odor was observed in any core in which elevated VOCs were detected. Samples for VOC analysis by EPA SW-846 method 8240 were collected from each interval with elevated VOC concentrations. Radioactivity field screening data indicated no radioactivity above background levels in drilling arrays 4, 5, 6, and 7. However, field screening and MRAL results did indicate the presence of radioactivity above background levels in boreholes in arrays 1, 2, and 3. These results are summarized in Table 5.3.4-2.

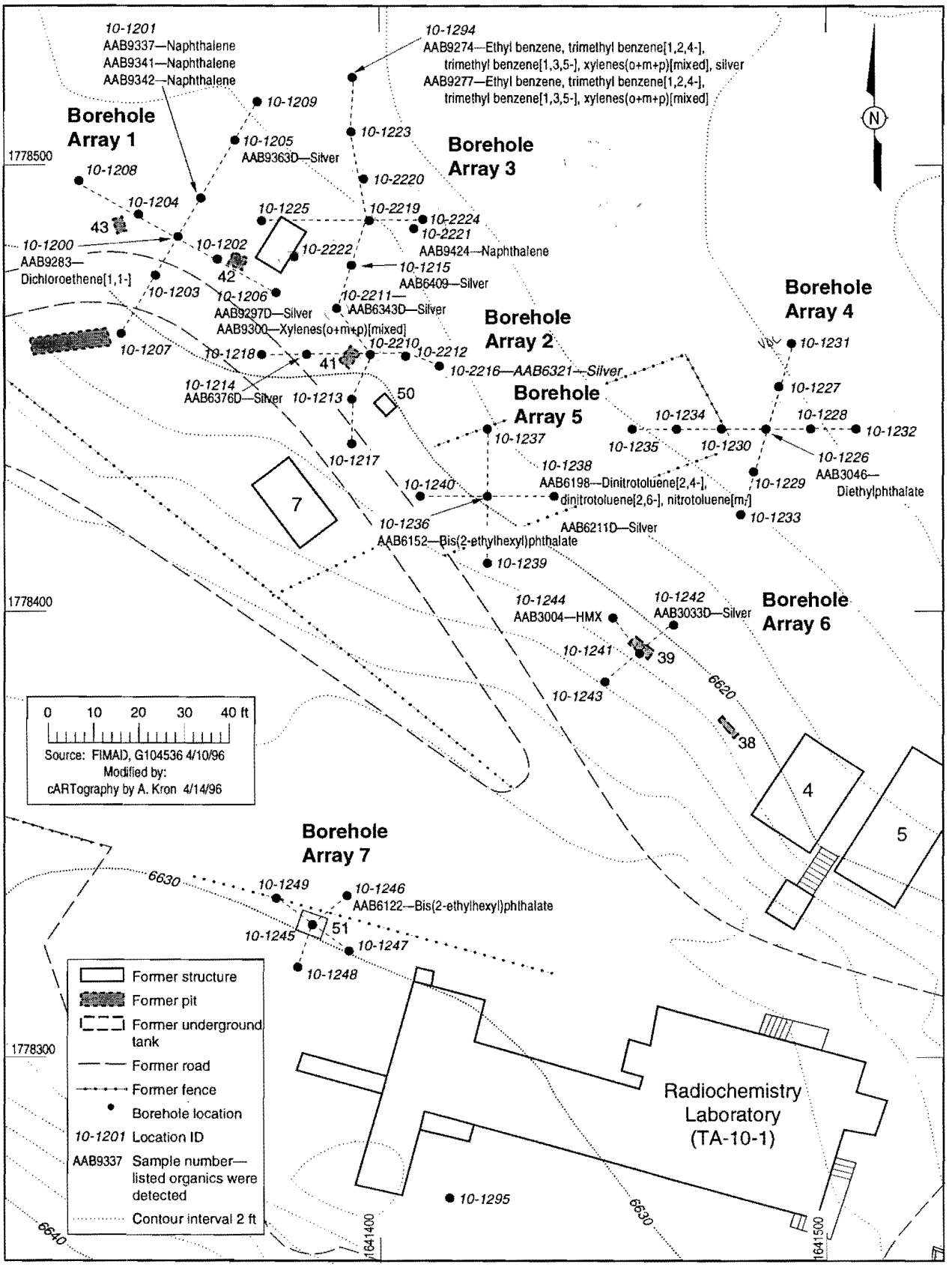


Fig. 5.3.4-1. Locations of samples collected at PRSs 10-003(a-o) and 10-007, and locations of detected organic analytes and inorganic analytes greater than background.

TABLE 5.3.4-1

SUMMARY OF SAMPLES COLLECTED AT PRSs 10-003(a-o) AND 10-007

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]								
				CYANIDE	HIGH EXPLOSIVES	ISOTOPIC THORIUM	ISOTOPIC URANIUM	METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM	VOCs[e]
10-1200	AAB9278	16.1-16.8 ft	Alluvium	—	19420	—	—	19898	20077	19420	20077	19420
10-1200	AAB9281	26.1-26.8 ft	Alluvium	—	19420	—	—	19898	20077	19420	20077	19420
10-1200	AAB9283	36-37 ft	Qbo[f]	—	19420	—	—	19898	20077	19420	20077	19420
10-1200	AAB9286	48.7-49.6 ft	Qbo	—	19420	—	—	19898	20077	19420	20077	19420
10-1201	AAB9337	11.1-11.8 ft	Alluvium	—	—	—	20012	20011	20012	20010	20012	20039
10-1201	AAB9338–Field Blank	NA[g]	Water	—	19933	—	—	20112	20109	19932	20109	—
10-1201	AAB9339–Equipment Blank	NA	Water	—	—	—	—	20112	20109	19932	20109	—
10-1201	AAB9341	16.9-17.5 ft	Alluvium	—	—	20012	20012	20011	20012	20010	20012	20039
10-1201	AAB9342	19.2-20 ft	Alluvium	—	—	—	20012	20011	20012	20010	20012	20039
10-1201	AAB9347	33.3-33.7 ft	Qbo	—	20033	—	—	20323	20111	20032	20111	20032
10-1201	AAB9350	48-48.9 ft	Pumice	—	20033	—	—	20323	20111	20032	20111	20032
10-1202	AAB9287	15.8-16.6 ft	Alluvium	—	—	—	—	19898	20077	19420	20077	19420
10-1202	AAB9289	25.4-26.2 ft	Alluvium	—	—	—	—	19898	20077	19420	20077	19420
10-1202	AAB9293	36-36.8 ft	Qbo	—	—	—	—	19898	20077	19420	20077	19420
10-1202	AAB9296	48.7-49.5 ft	Qbo	—	—	—	—	19898	20077	19420	20077	19420
10-1203	AAB9385	13.6-14.3 ft	Alluvium	—	—	—	—	20092	20087	19630	20087	19630
10-1203	AAB9388	20.5-20.8 ft	Alluvium	—	—	—	—	—	—	—	—	19630
10-1203	AAB9389	27.5-28.3 ft	Qbo	—	—	—	—	20092	20087	19630	20087	19630
10-1203	AAB9390	38-39.5 ft	Pumice	—	—	—	—	20092	20087	19630	20087	19630
10-1203	AAB9392–Field Duplicate	38-39.5 ft	Pumice	—	—	—	—	20092	20087	19630	20087	19630
10-1203	AAB9394	49.1-50 ft	Pumice	—	—	—	—	20092	20087	19630	20087	19630
10-1204	AAB9309	15.7-16.4 ft	Alluvium	—	19570	—	19574	19571	19574	19570	19574	19570
10-1204	AAB9310	47.7-49.3 ft	Qbo	—	19487	—	—	20079	20082	19487	20082	19487
10-1204	AAB9313	25.8-26.4 ft	Alluvium	—	19487	—	—	20079	20082	19487	20082	19487
10-1204	AAB9315	35.5-36.5 ft	Qbo	—	19487	—	—	20079	20082	19487	20082	19487
10-1205	AAB9360	10-10.5 ft	Alluvium	—	—	—	—	20317	20325	20282	20325	20282
10-1205	AAB9361	14.3-14.8 ft	Alluvium	—	—	—	20232	20231	20232	20230	—	20230
10-1205	AAB9363	19.5-20 ft	Alluvium	—	—	—	—	20317	20325	20282	20325	20282
10-1205	AAB9364	20-20.9 ft	Alluvium	—	—	—	20232	20231	20232	20230	—	20230
10-1205	AAB9368	39-40 ft	Transitional	—	—	—	—	20318	20328	20209	20328	20209
10-1205	AAB9397–Field Duplicate	39-40 ft	Transitional	—	—	—	—	20318	20328	20209	20328	20209
10-1205	AAB9399	49.3-50 ft	Qbo	—	—	—	—	20318	20328	20209	20328	20209
10-1206	AAB9297	15.8-16.8 ft	Alluvium	—	19441	—	—	19870	20080	—	20080	19434
10-1206	AAB9300	35.7-36.9 ft	Pumice	—	19441	—	—	19870	20080	19434	20080	19434

TABLE 5.3.4-1 (CONTINUED)

SUMMARY OF SAMPLES COLLECTED AT PRSs 10-003(a-o) AND 10-007

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]								
				CYANIDE	HIGH EXPLOSIVES	ISOTOPIC THORIUM	ISOTOPIC URANIUM	METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM	VOCs[e]
10-1206	AAB9301	25.9-26.8 ft	Qbo	—	19441	—	—	19870	20080	19434	20080	19434
10-1206	AAB9302–Field Duplicate	35.7-36.9 ft	Pumice	—	19441	—	—	19870	20080	19434	20080	19434
10-1206	AAB9303–Field Blank	NA	Water	—	19441	—	—	19870	20080	19434	20080	—
10-1206	AAB9304–Equipment Blank	NA	Water	—	19441	—	—	19870	20080	19434	20080	—
10-1206	AAB9308	48.4-49.3 ft	Pumice	—	19441	—	—	19870	20080	19434	20080	19434
10-1207	AAB9327	10.8-11.5 ft	Alluvium	—	—	—	—	20110	20113	19895	20113	19895
10-1207	AAB9330	25.5-26.1 ft	Alluvium	—	—	—	—	20110	20113	19895	20113	19895
10-1207	AAB9333	35.9-36.6 ft	Qbo	—	—	—	—	20110	20113	19895	20113	19895
10-1207	AAB9336	48.3-49.3 ft	Pumice	—	—	—	—	20110	20113	19895	20113	19895
10-1208	AAB9317	15.6-16.6 ft	Alluvium	—	19522	—	—	20090	20084	19522	20084	19522
10-1208	AAB9322	26-26.7 ft	Alluvium	—	19522	—	—	20090	20084	19522	20084	19522
10-1208	AAB9324	35.7-36.5 ft	Qbo	—	19522	—	—	20090	20084	19522	20084	19522
10-1208	AAB9326	49-50 ft	Pumice	—	19522	—	—	20090	20084	19522	20084	19522
10-1209	AAB9351	14-14.7 ft	Alluvium	—	—	—	—	20319	20332	20147	20332	20147
10-1209	AAB9354	29-29.6 ft	Transitional	—	—	—	—	20319	20332	20147	20332	20147
10-1209	AAB9357	37.5-38.4 ft	Transitional	—	—	—	—	20319	20332	20147	20332	20147
10-1209	AAB9359	48.4-49.2 ft	Qbo	—	—	—	—	20319	20332	20147	20332	20147
10-1213	AAB6392	6.3-6.8 ft	Alluvium	—	—	—	—	19404	19804	18660	19804	—
10-1213	AAB6395	19.2-19.7 ft	Alluvium	—	—	—	—	19404	19804	18660	19804	—
10-1213	AAB6403	46.8-47.3 ft	Pumice	—	—	—	—	19404	19804	18660	19804	—
10-1213	AAB6404	39.2-39.7 ft	Pumice	—	—	—	—	19404	19804	18660	19804	—
10-1214	AAB6363	5-6 ft	Alluvium	—	18568	—	—	18869	19604	18564	19604	—
10-1214	AAB6364–Field Duplicate	5-6 ft	Alluvium	—	18568	—	—	18869	19604	18564	19604	—
10-1214	AAB6371	25.9-26.4 ft	Alluvium	—	18568	—	—	18869	19604	18564	19604	—
10-1214	AAB6376	36.6-37.1 ft	Transitional	—	18568	—	—	18869	19604	18564	19604	—
10-1214	AAB6378	49.4-50 ft	Pumice	—	18568	—	—	18869	19604	18564	19604	—
10-1215	AAB6405	7.9-8.4 ft	Alluvium	—	—	—	—	19409	19805	18668	19805	—
10-1215	AAB6409	15-15.9 ft	Alluvium	—	—	19807	19807	19406	19807	18750	19807	—
10-1215	AAB6410–Field Duplicate	15-15.9 ft	Alluvium	—	—	19807	19807	19406	19807	18750	19807	—
10-1215	AAB6569	21.7-22.2 ft	Alluvium	—	—	—	19574	19571	19574	19570	19574	—
10-1215	AAB6579	46.1-46.6 ft	Pumice	—	—	—	—	19406	19807	18750	19807	—
10-1215	AAB6580	26.6-27.1 ft	Alluvium	—	—	—	19574	19571	19574	19570	19574	—
10-1217	AAB6350	5-5.5 ft	Alluvium	—	—	—	—	18853	19106	18556	19106	—

TABLE 5.3.4-1 (CONTINUED)

SUMMARY OF SAMPLES COLLECTED AT PRSs 10-003(a-o) AND 10-007

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]								
				CYANIDE	HIGH EXPLOSIVES	ISOTOPIC THORIUM	ISOTOPIC URANIUM	METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM	VOCs[e]
10-1217	AAB6353	15.8-16.3 ft	Alluvium	—	—	—	—	18853	19106	18556	19106	—
10-1217	AAB6354–Field Blank	NA	Water	—	—	—	—	18853	19106	18546	19106	—
10-1217	AAB6355–Equipment Blank	15.8-16.3 ft	Water	—	—	—	—	18853	19106	18546	19106	—
10-1217	AAB6360	37.5-38.2 ft	Qbo	—	—	—	—	18853	19106	18556	19106	—
10-1217	AAB6362	48.7-49.4 ft	Qbo	—	—	—	—	18853	19106	18556	19106	—
10-1218	AAB6379	5.9-6.4 ft	Alluvium	—	18627	—	—	19401	19695	18621	19695	—
10-1218	AAB6384	21.5-22 ft	Alluvium	—	18627	—	—	19401	19695	18621	19695	—
10-1218	AAB6390	48.9-49.4 ft	Qbo	—	18627	—	—	19401	19695	18621	19695	—
10-1223	AAB6604	16-16.5 ft	Alluvium	—	—	19892	19892	19445	19892	19107	19892	19107
10-1223	AAB6610	30-30.5 ft	Alluvium	—	—	—	—	19445	19892	19107	19892	19107
10-1223	AAB6612	37.5-38 ft	Transitional	—	—	—	—	19445	19892	19107	19892	19107
10-1223	AAB6614	46.5-47 ft	Pumice	—	—	—	—	19445	19892	19107	19892	19107
10-1225	AAB9257	16.4-16.9 ft	Alluvium	—	—	—	—	19821	19878	19316	19878	19316
10-1225	AAB9260	26.2-26.9 ft	Alluvium	—	—	—	—	19821	19878	19316	19878	19316
10-1225	AAB9265	41.2-42.1 ft	Pumice	—	—	—	—	19821	19878	19316	19878	19316
10-1225	AAB9267	48.5-49.3 ft	Pumice	—	—	—	—	19821	19878	19316	19878	19316
10-1226	AAB3046	3.9-4.7 ft	Alluvium	—	18285	—	—	18432	19101	18278	19101	—
10-1226	AAB3047–Field Duplicate	3.9-4.7 ft	Alluvium	—	18285	—	—	18432	19101	18278	19101	—
10-1226	AAB3057	32.5-33 ft	Transitional	—	18285	—	—	18432	19101	18278	19101	—
10-1226	AAB3059	43.9-44.3 ft	Pumice	—	18285	—	—	18432	19101	18278	19101	—
10-1226	AAB3060	49.1-49.8 ft	Pumice	—	18285	—	—	18432	19101	18278	19101	—
10-1227	AAB6423	3.1-3.7 ft	Alluvium	—	18398	—	—	18584	18731	18397	18731	—
10-1227	AAB6428	29.1-29.6 ft	Transitional	—	18398	—	—	18584	18731	18397	18731	—
10-1227	AAB6432	49.1-49.8 ft	Qbo	—	18398	—	—	18584	18731	18397	18731	—
10-1227	AAB6433	44.5-45 ft	Qbo	—	18398	—	—	18584	18731	18397	18731	—
10-1228	AAB3062	3.5-4.2 ft	Alluvium	—	18307	—	—	18430	18725	18305	18725	—
10-1228	AAB3069	32.1-32.5 ft	Transitional	—	18274	—	—	18501	18727	18272	18727	—
10-1228	AAB3072	49-49.8 ft	Pumice	—	18274	—	—	18501	18727	18272	18727	—
10-1228	AAB3073	21.4-21.8 ft	Alluvium	—	18274	—	—	18501	18727	18272	18727	—
10-1229	AAB3087	3-3.5 ft	Alluvium	—	—	—	—	18862	19104	18362	19104	—
10-1229	AAB6414	28-28.2 ft	Qbo	—	—	—	—	18862	19104	18362	19104	—
10-1229	AAB6415–Field Blank	NA	Water	—	—	—	—	18862	19104	18362	19104	—
10-1229	AAB6416–Equipment Blank	NA	Water	—	—	—	—	18862	19104	18362	19104	—

TABLE 5.3.4-1 (CONTINUED)

SUMMARY OF SAMPLES COLLECTED AT PRSs 10-003(a-o) AND 10-007

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]								
				CYANIDE	HIGH EXPLOSIVES	ISOTOPIC THORIUM	ISOTOPIC URANIUM	METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM	VOCs[e]
10-1229	AAB6420	47.5-47.8 ft	Qbo	—	—	—	—	18862	19104	18362	19104	—
10-1229	AAB6421	35-35.8 ft	Qbo	—	—	—	—	18584	18731	18397	18731	—
10-1229	AAB6422–Field Duplicate	35-35.8 ft	Qbo	—	—	—	—	18584	18731	18397	18731	—
10-1230	AAB6434	4-4.5 ft	Alluvium	—	—	—	—	18584	18731	18397	18731	—
10-1230	AAB6439	29-29.6 ft	Transitional	—	—	—	—	18584	18731	18397	18731	—
10-1230	AAB6444	48.5-49.5 ft	Qbo	—	—	—	—	18584	18731	18397	18731	—
10-1230	AAB6445–Field Duplicate	48.5-49.5 ft	Qbo	—	—	—	—	18584	18731	18397	18731	—
10-1230	AAB6446	46.6-47.1 ft	Qbo	—	—	—	—	18584	18731	18397	18731	—
10-1231	AAB6461	4-4.5 ft	Alluvium	—	—	—	—	18585	18743	18487	18743	—
10-1231	AAB6465	16.7-17.2 ft	Alluvium	—	—	—	—	18585	18743	18487	18743	—
10-1231	AAB6471	48.4-49.3 ft	Qbo	—	—	—	—	18585	18743	18487	18743	—
10-1231	AAB6472	32-32.8 ft	Transitional	—	—	—	—	18585	18743	18487	18743	—
10-1232	AAB3074	4.1-4.6 ft	Alluvium	—	18388	—	—	18583	18729	18348	18729	—
10-1232	AAB3080	21.5-21.9 ft	Alluvium	—	18388	—	—	18583	18729	18348	18729	—
10-1232	AAB3085	41.8-42.3 ft	Pumice	—	18388	—	—	18583	18729	18348	18729	—
10-1232	AAB3086	49.4-50 ft	Pumice	—	18388	—	—	18583	18729	18348	18729	—
10-1233	AAB6447	3.7-4.3 ft	Alluvium	—	—	—	—	18586	18742	18485	18742	—
10-1233	AAB6454	28.6-29.5 ft	Transitional	—	—	—	—	18871	19102	18484	19102	—
10-1233	AAB6455–Field Duplicate	28.6-29.5 ft	Transitional	—	—	—	—	18871	19102	18484	19102	—
10-1233	AAB6459	48.7-49.5 ft	Pumice	—	—	—	—	18871	19102	18484	19102	—
10-1233	AAB6460	40-40.8 ft	Pumice	—	—	—	—	18871	19102	18484	19102	—
10-1234	AAB6473	0.6-1 ft	Alluvium	—	18557	—	—	18853	19106	18556	19106	—
10-1234	AAB6478	23.4-23.9 ft	Alluvium	—	18557	—	—	18853	19106	18556	19106	—
10-1234	AAB6483	48.2-49.1 ft	Pumice	—	18557	—	—	18853	19106	18556	19106	—
10-1234	AAB6484	30-30.8 ft	Pumice	—	18557	—	—	18853	19106	18556	19106	—
10-1235	AAB6485	3.5-4.5 ft	Alluvium	—	—	—	—	18853	19106	18556	19106	—
10-1235	AAB6486–Field Duplicate	3.5-4.5 ft	Alluvium	—	—	—	—	18853	—	18556	—	—
10-1235	AAB6492	33.1-33.7 ft	Transitional	—	—	—	—	18853	19106	18556	19106	—
10-1235	AAB6493–Field Blank	NA	Water	—	—	—	—	18853	19106	18546	19106	—
10-1235	AAB6493-Field Blank	NA	Water	—	—	—	—	18853	—	—	—	—
10-1235	AAB6494–Equipment Blank	NA	Water	—	—	—	—	18853	19106	18546	19106	—
10-1235	AAB6498	48.9-49.4 ft	Pumice	—	—	—	—	18853	19106	18556	19106	—

TABLE 5.3.4-1 (CONTINUED)

SUMMARY OF SAMPLES COLLECTED AT PRSs 10-003(a-o) AND 10-007

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]								
				CYANIDE	HIGH EXPLOSIVES	ISOTOPIC THORIUM	ISOTOPIC URANIUM	METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM	VOCs[e]
10-1235	AAB6500	43.6-44.1 ft	Pumice	—	—	—	—	18853	19106	18556	19106	—
10-1236	AAB6126	2.8-3.4 ft	Fill	—	18010	—	—	18544	18709	18004	18709	—
10-1236	AAB6151	30-31.2 ft	Transitional	—	18010	—	—	18544	18709	18004	18709	—
10-1236	AAB6152–Field Duplicate	30-31.2 ft	Transitional	—	18010	—	—	18544	18709	18004	18709	—
10-1236	AAB6155	47.5-47.9 ft	Pumice	—	18010	—	—	18544	18709	18004	18709	—
10-1237	AAB6157	2.5-3.1 ft	Alluvium	—	—	—	—	18544	18709	18004	18709	—
10-1237	AAB6162	23.5-24.1 ft	Transitional	—	—	—	—	18544	18709	18004	18709	—
10-1237	AAB6166	41.6-42.2 ft	Pumice	—	—	—	—	18544	18709	18004	18709	—
10-1237	AAB6168	49.4-50 ft	Pumice	—	—	—	—	18544	18709	18004	18709	—
10-1238	AAB6198	4.4-5 ft	Alluvium	—	18008	—	—	18849	18898	18100	18898	—
10-1238	AAB6205	23.1-23.7 ft	Alluvium	—	18008	—	—	18849	18898	18100	18898	—
10-1238	AAB6206–Field Reagent	NA	Water	—	—	—	—	18849	18898	18001	18898	—
10-1238	AAB6207–Equipment Blank	NA	Water	—	18008	—	—	18849	18898	18001	18898	—
10-1238	AAB6211	38.8-39.4 ft	Pumice	—	18008	—	—	18849	18898	18100	18898	—
10-1238	AAB6214	49.4-50 ft	Pumice	—	18008	—	—	18849	18898	18100	18898	—
10-1239	AAB6169	2.5-3.1 ft	Alluvium	—	—	—	—	19784	19764	17994	19764	—
10-1239	AAB6180	49.4-50 ft	Pumice	—	—	—	—	19784	19764	17994	19764	—
10-1239	AAB6181	0-0.6 ft	Alluvium	—	—	—	—	19784	19764	17994	19764	—
10-1240	AAB6182	3.1-3.7 ft	Alluvium	—	18008	—	—	18849	18898	18100	18898	—
10-1240	AAB6186	19-19.6 ft	Alluvium	—	18008	—	—	18849	18898	18100	18898	—
10-1240	AAB6193	36.6-37.6 ft	Pumice	—	18008	—	—	18849	18898	18100	18898	—
10-1240	AAB6194–Field Duplicate	36.6-37.6 ft	Pumice	—	18008	—	—	18849	18898	18100	18898	—
10-1240	AAB6197	49.4-50 ft	Pumice	—	18008	—	—	18849	18898	18100	18898	—
10-1241	AAB2991	3.5-4 ft	Alluvium	—	—	—	—	18852	18932	18149	18932	—
10-1241	AAB3001	49.1-49.6 ft	Pumice	—	—	—	—	18852	18932	18149	18932	—
10-1241	AAB3002	22-22.3 ft	Alluvium	—	—	—	—	18852	18932	18149	18932	—
10-1241	AAB3003	33.9-34.3 ft	Transitional	—	—	—	—	18852	18932	18149	18932	—
10-1242	AAB3019	4.1-4.7 ft	Alluvium	—	18539	—	—	18863	18716	18248	18716	—
10-1242	AAB3020–Field Blank	NA	Water	—	18539	—	—	18863	18716	18248	18716	—
10-1242	AAB3030	46.5-47.3 ft	Pumice	—	18539	—	—	18863	18716	18248	18716	—
10-1242	AAB3031–Equipment Blank	NA	Water–	—	18539	—	—	18863	18716	18248	18716	—
10-1242	AAB3032	6.2-6.8 ft	Alluvium	—	18539	—	—	18863	18716	18248	18716	—

TABLE 5.3.4-1 (CONTINUED)

SUMMARY OF SAMPLES COLLECTED AT PRSs 10-003(a-o) AND 10-007

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]								
				CYANIDE	HIGH EXPLOSIVES	ISOTOPIC THORIUM	ISOTOPIC URANIUM	METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM	VOCs[e]
10-1242	AAB3033	30.3-30.9 ft	Alluvium	—	18539	—	—	18863	18716	18248	18716	—
10-1243	AAB3034	4.1-4.6 ft	Alluvium	—	—	—	—	19786	19760	18209	19760	—
10-1243	AAB3042	36.8-37.3 ft	Alluvium	—	—	—	—	19786	19760	18209	19760	—
10-1243	AAB3044	48.7-49 ft	Pumice	—	—	—	—	19786	19760	18209	19760	—
10-1243	AAB3045	25.7-26.5 ft	Alluvium	—	—	—	—	19786	19760	18209	19760	—
10-1244	AAB3004	4.3-4.9 ft	Alluvium	—	18609	—	—	18578	18710	—	18710	—
10-1244	AAB3005–Field Duplicate	4.3-4.9 ft	Alluvium	—	18609	—	—	18578	18710	—	18710	—
10-1244	AAB3016	49.1-49.8 ft	Pumice	—	18630	—	—	18581	18713	18189	18713	—
10-1244	AAB3017	32-32.5 ft	Alluvium	—	18630	—	—	18581	18713	18189	18713	—
10-1244	AAB3018	12.5-13.1 ft	Alluvium	—	18630	—	—	18581	18713	18189	18713	—
10-1245	AAB2833	2.2-2.5 ft	Alluvium	—	—	—	—	20307	20315	17842	20315	—
10-1245	AAB2839	28-28.6 ft	Alluvium	—	—	—	—	19787	19773	17842	19773	—
10-1245	AAB2843	49.4-50 ft	Qbo	—	—	—	—	19787	19773	17842	19773	—
10-1245	AAB2844	13-13.6 ft	Alluvium	—	—	—	—	19787	19773	17842	19773	—
10-1246	AAB2885	3.4-4.1 ft	Alluvium	—	17920	—	—	19745	19964	17875	19964	—
10-1246	AAB6122	41.7-42.3 ft	Transitional	—	17920	—	—	19745	20438	17875	20438	—
10-1246	AAB6124	49.4-50 ft	Qbo	—	17918	—	—	19761	18994	17874	18994	—
10-1246	AAB6125	9.4-10 ft	Alluvium	—	17918	—	—	19761	18994	17874	18994	—
10-1247	AAB2861	0.8-1.4 ft	Alluvium	—	—	—	—	19783	19763	17854	19763	—
10-1247	AAB2863	10.9-11.1 ft	Alluvium	—	—	—	—	19783	—	—	—	—
10-1247	AAB2882	49.4-50 ft	Qbo	—	—	—	—	19780	19706	17869	19706	—
10-1247	AAB2883	26-27 ft	Alluvium	—	—	—	—	19780	19706	17869	19706	—
10-1247	AAB2884–Field Duplicate	26-27 ft	Alluvium	—	—	—	—	19780	19706	17869	19706	—
10-1248	AAB6129	3.4-4.05 ft	Alluvium	—	17918	—	—	19761	18994	17874	18994	—
10-1248	AAB6139	44-44.6 ft	Qbo	—	17918	—	—	19761	18994	17874	18994	—
10-1248	AAB6141	50.4-51 ft	Qbo	—	17918	—	—	19761	18994	17874	18994	—
10-1248	AAB6142–Field Blank	NA	Water	—	17850	—	—	19761	20343	17852	20343	—
10-1248	AAB6143	29.4-30 ft	Alluvium	—	17918	—	—	19761	18994	17874	18994	—
10-1248	AAB6144–Equipment Blank	NA	Water	—	17850	—	—	19761	20343	17852	20343	—
10-1249	AAB2845	0.9-1.5 ft	Alluvium	—	—	—	—	19779	18990	17853	18990	—
10-1249	AAB2851	25.4-26 ft	Alluvium	—	—	—	—	19779	18990	17853	18990	—
10-1249	AAB2856	49.4-50 ft	Qbo	—	—	—	—	19779	18990	17853	18990	—
10-1249	AAB2857	46.8-47.5 ft	Qbo	—	—	—	—	19779	18990	17853	18990	—
10-1294	AAB9269	15-15.9 ft	Alluvium	—	19376	—	—	19852	20070	19376	20070	19376

TABLE 5.3.4-1 (CONTINUED)

SUMMARY OF SAMPLES COLLECTED AT PRSs 10-003(a-o) AND 10-007

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]								
				CYANIDE	HIGH EXPLOSIVES	ISOTOPIC THORIUM	ISOTOPIC URANIUM	METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM	VOCs[e]
10-1294	AAB9271	26.5-27.1 ft	Alluvium	—	19376	—	—	19852	20070	19376	20070	19376
10-1294	AAB9272–Field Duplicate	26.5-27.1 ft	Alluvium	—	19376	—	—	19852	20070	19376	20070	19376
10-1294	AAB9274	36.6-37.4 ft	Transitional	—	19376	—	—	19852	20070	19376	20070	19376
10-1294	AAB9277	48.7-49.4 ft	Qbo	—	19376	—	—	19852	20070	19376	20070	19376
10-2210	AAB6292	6-6.6 ft	Alluvium	—	18285	—	—	18432	19101	18278	19101	—
10-2210	AAB6299	18-18.6 ft	Alluvium	18320	—	—	18323	18320	18323	18318	18323	—
10-2210	AAB6304	40-40.6 ft	Transitional	—	18307	—	—	18430	18725	18305	18725	—
10-2210	AAB6306	49-49.8 ft	Pumice	—	18307	—	—	18430	18725	18305	18725	—
10-2210	AAB6307	11.9-12.5 ft	Alluvium	18320	—	—	18323	18320	18323	18318	18323	—
10-2211	AAB6338	13.8-14.3 ft	Alluvium	—	—	—	—	18585	18743	18487	18743	—
10-2211	AAB6343	31.4-31.9 ft	Alluvium	—	—	—	—	18585	18743	18487	18743	—
10-2211	AAB6348	49.5-50 ft	Pumice	—	—	—	—	18585	18743	18487	18743	—
10-2211	AAB6349	16.3-16.8 ft	Alluvium	—	—	—	—	18585	18743	18487	18743	—
10-2212	AAB6308	3.6-4.2 ft	Fill	—	—	—	—	18583	18729	18348	18729	—
10-2212	AAB6313	22.9-23.5 ft	Alluvium	—	18396	—	—	18862	19104	18362	19104	—
10-2212	AAB6317	37.2-37.8 ft	Pumice	—	18396	—	—	18862	19104	18362	19104	—
10-2212	AAB6320	49.4-50 ft	Pumice	—	18396	—	—	18862	19104	18362	19104	—
10-2216	AAB6321	7.5-8.5 ft	Alluvium	—	18451	—	—	18867	18741	18443	18741	—
10-2216	AAB6322–Field Duplicate	7.5-8.5 ft	Alluvium	—	18451	—	—	18867	18741	18443	18741	—
10-2216	AAB6330	27.5-28 ft	Alluvium	—	18451	—	—	18867	18741	18443	18741	—
10-2216	AAB6335	47.5-47.9 ft	Pumice	—	18451	—	—	18867	18741	18443	18741	—
10-2216	AAB6336	17.5-18.2 ft	Alluvium	—	18451	—	—	18867	18741	18443	18741	—
10-2219	AAB6581	16.3-16.8 ft	Alluvium	—	—	—	18782	18781	18782	18780	18782	—
10-2219	AAB6585	20.3-20.8 ft	Alluvium	—	—	—	18782	18781	18782	18780	18782	—
10-2219	AAB6587	28.4-28.9 ft	Alluvium	—	—	—	—	19397	19811	18793	19811	—
10-2219	AAB6588–Field Blank	NA	Water	—	—	—	—	19397	19811	18793	19811	—
10-2219	AAB6589–Equipment Blank	NA	Water	—	—	—	—	19397	19811	18793	19811	—
10-2219	AAB6594	46.9-47.4 ft	Qbo	—	—	—	—	19397	19811	18793	19811	—
10-2220	AAB6583	14-14.5 ft	Alluvium	19013	—	—	—	19013	19014	19011	19014	—
10-2220	AAB6584	17-17.5 ft	Alluvium	19013	—	—	—	19013	19014	19011	19014	—
10-2220	AAB6600	37-37.5 ft	Alluvium	—	19015	—	—	19429	19884	18995	19884	—
10-2220	AAB6603	49.4-50 ft	Pumice	—	19108	—	—	19445	19892	19107	19892	—
10-2220	AAB9428	18-18.6 ft	Alluvium	—	—	—	19574	19571	19574	19570	19574	—
10-2221	AAB8642	14.2-15 ft	Alluvium	—	—	—	—	19446	19888	19143	19888	19143

TABLE 5.3.4-1 (CONTINUED)

SUMMARY OF SAMPLES COLLECTED AT PRSs 10-003(a-o) AND 10-007

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]								
				CYANIDE	HIGH EXPLOSIVES	ISOTOPIC THORIUM	ISOTOPIC URANIUM	METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM	VOCs[e]
10-2221	AAB9422	28.8-29.5 ft	Alluvium	—	—	—	—	19813	19886	19199	19886	19199
10-2221	AAB9424	35.3-36 ft	Transitional	—	—	—	—	19813	19886	19199	19886	19199
10-2221	AAB9427	49.2-50 ft	Pumice	—	—	—	—	19813	19886	19199	19886	19199
10-2222	AAB9248	15.7-16.5 ft	Alluvium	—	19270	—	—	19818	19880	19260	19880	19260
10-2222	AAB9251	25.4-26.1 ft	Alluvium	—	19270	—	—	19818	19880	19260	19880	19260
10-2222	AAB9253	40.6-41.6 ft	Qbo	—	19270	—	—	19818	19880	19260	19880	19260
10-2222	AAB9254–Field Blank	NA	Water	—	19270	—	—	19818	19880	19260	19880	—
10-2222	AAB9255–Equipment Blank	NA	Water	—	19270	—	—	19818	19880	19260	19880	—
10-2222	AAB9256	48.1-49 ft	Qbo	—	19270	—	—	19818	19880	19260	19880	19260
10-2224	AAB6615	14.3-15 ft	Alluvium	—	19144	—	—	19446	19888	19143	19888	19143
10-2224	AAB6617	24-25 ft	Alluvium	—	19144	—	—	19446	19888	19143	19888	19143
10-2224	AAB6618–Field Duplicate	24-25 ft	Alluvium	—	19144	—	—	19446	19888	19143	19888	19143
10-2224	AAB6623	37.5-38.3 ft	Transitional	—	19144	—	—	19446	19888	19143	19888	19143
10-2224	AAB8641	49.2-50 ft	Pumice	—	19144	—	—	19446	19888	19143	19888	19143

[a] Listed five-digit number indicates request number under which analysis was performed.
[b] Metals = Target analyte list metals.
[c] Radionuclide results will be discussed in an addendum to this report.
[d] SVOCs = Semivolatile organic compounds.
[e] VOCs = Volatile organic compounds.
[f] Qbo = The Otowi Member of the Bandelier Tuff.
[g] NA = Not applicable.
– = Sample was not analyzed for this suite.

TABLE 5.3.4-2

FIELD SCREENING RESULTS FOR VOLATILE ORGANIC VAPORS AND RADIOACTIVITY AT PRSs 10-003(a-o) AND 10-007

	RESULTS FOR VOLATILE ORGANIC VAPORS[a]		RESULTS FOR BETA/GAMMA RADIOACTIVITY[b]	
BOREHOLE	DEPTH (ft)	READING (ppm)	DEPTH (ft)	READING (cpm)
10-1200	Entire borehole	0	Entire borehole	Background
10-1201	34	4	10 – 22 22 – 50	1 000 – 32 000 Background
10-1202	Entire borehole	0	Entire borehole	Background
10-1203	12.5 20 33	7 4 4	Entire borehole	Background
10-1204	Entire borehole	0	15 – 25 25 – 50	800 – 8 000 Background
10-1205	10	8	10 – 27.5 27.5 – 50	800 – 31 000 Background
10-1206	Entire borehole	0	Entire borehole	Background
10-1207	10	6	Entire borehole	Background
10-1208	Entire borehole	0	Entire borehole	Background
10-1209	12.5	15	Entire borehole	Background
10-2210	Entire borehole	0	5 – 22.5	1 000 – 10 000
10-2211	Entire borehole	0	12.5 – 25	800 – 1 200
10-2212	Entire borehole	0	Entire borehole	Background
10-1213	Entire borehole	0	Entire borehole	Background
10-1214	Entire borehole	0	Entire borehole	Background
10-1215	Entire borehole	0	12.5 – 35	860 – 9 000
10-2216	Entire borehole	0	Entire borehole	Background
10-1217	Entire borehole	0	Entire borehole	Background
10-1218	Entire borehole	0	Entire borehole	Background
10-2219	Entire borehole	0	15 – 22.5	20 000 – 50 000
10-2220	Entire borehole	0	15 – 21	5 000 – 40 000
10-2221	Entire borehole	0	Entire borehole	Background
10-2222	Entire borehole	0	Entire borehole	Background
10-1223	Entire borehole	0	15 – 20	800 – 1 200
10-1224	Entire borehole	0	Entire borehole	Background
10-1225	Entire borehole	0	Entire borehole	Background
10-1226	Entire borehole	0	Entire borehole	Background
10-1227	Entire borehole	0	Entire borehole	Background
10-1228	Entire borehole	0	Entire borehole	Background
10-1229	Entire borehole	0	Entire borehole	Background

TABLE 5.3.4-2 (CONTINUED)

FIELD SCREENING RESULTS FOR VOLATILE ORGANIC VAPORS AND RADIOACTIVITY AT PRSs 10-003(a-o) AND 10-007

	RESULTS FOR VOLATILE ORGANIC VAPORS[a]		RESULTS FOR BETA/GAMMA RADIOACTIVITY[b]	
BOREHOLE	DEPTH (ft)	READING (ppm)	DEPTH (ft)	READING (cpm)
10-1230	Entire borehole	0	Entire borehole	Background
10-1231	7.5	5.8	Entire borehole	Background
10-1232	Entire borehole	0	Entire borehole	Background
10-1233	Entire borehole	0	Entire borehole	Background
10-1234	Entire borehole	0	Entire borehole	Background
10-1235	2.5	4	Entire borehole	Background
10-1236	Entire borehole	0	Entire borehole	Background
10-1237	Entire borehole	0	Entire borehole	Background
10-1238	Entire borehole	0	Entire borehole	Background
10-1239	Entire borehole	0	Entire borehole	Background
10-1240	Entire borehole	0	Entire borehole	Background
10-1241	Entire borehole	0	Entire borehole	Background
10-1242	Entire borehole	0	Entire borehole	Background
10-1243	Entire borehole	0	Entire borehole	Background
10-1244	Entire borehole	0	Entire borehole	Background
10-1245	Entire borehole	0	Entire borehole	Background
10-1246	Entire borehole	0	Entire borehole	Background
10-1247	Entire borehole	0	Entire borehole	Background
10-1248	Entire borehole	0	Entire borehole	Background
10-1249	Entire borehole	0	Entire borehole	Background

[a] Field screening for volatile organic vapors was conducted using a photoionization detector (PID).
[b] Field screening for beta/gamma radioactivity was conducted using an Eberline™ ESP-1 with an HP 260™ probe or a Ludlum Model 12™ with a 44-40 shielded probe.
"Enitre borehole" indicates that this reading was detected at every depth within the borehole.

Boreholes were backfilled with either a cement/bentonite slurry or drill cuttings based on field screening data, MCAL results, and MRAL results. Boreholes were backfilled with drill cuttings if 1) neither VOCs nor elevated radioactivity were detected in recovered core using hand-held screening instruments, 2) MCAL results indicated that metals and SVOCs were not present above SALs, and 3) MRAL results indicated that gross alpha, beta, and gamma levels were below background levels. Upon returning drill cuttings to their respective boreholes, each boring was completed with a 2-ft thick concrete cap. Within the TA-10 Central Area, 14 boreholes were backfilled with the cement/bentonite slurry because of elevated radioactivity detected by hand-held screening instruments and/or MRAL results and 38 boreholes were backfilled with drill cuttings and completed with the concrete cap.

The following deviations from the work plan occurred:

Borehole 10-1294 was added to the north arm of drilling array 3 in order to bound an area of subsurface beta contamination.

Borehole 10-1295 was added south of the former radiochemistry laboratory (structure TA-10-1) during the course of the field program when three radiochemists formerly employed at the radiochemistry laboratory identified an area of the site suspected to be the location of an undocumented laboratory waste pit. The borehole was drilled to assess the presence of subsurface radioactivity. Samples collected were submitted to the MRAL for analysis, and no radioactivity was detected above background levels.

Nine boreholes in arrays 1, 2, and 3 were relocated due to drilling refusal generally attributed to concrete or rebar debris encountered at depths between 5 and 15 ft bgs. After experiencing refusal, each abandoned borehole was backfilled with its drill cuttings and another drilling attempt was made within a few feet of the previous boring. Cuttings were screened with hand-held instruments for radioactivity and VOCs prior to backfilling each borehole. These new boreholes were assigned new FIMAD ID numbers (i.e., boreholes numbers 10-1210, 10-1211, 10-1212, 10-1216, 10-1219, 10-1220, 10-1221, 10-1222, and 10-1224 were changed to 10-2210, 10-2211, 10-2212, 10-2216, 10-2219, 10-2220, 10-2221, 10-2222, and 10-2224, respectively).

The US EPA Region VI approval of the NOD Response for the RFI Work plan stipulated that samples must be collected for VOC analysis regardless of field screening results. However, approximately one-third of the total number of samples collected from Central Area boreholes were submitted for VOC analysis. Based on analytical results of those samples collected from the Central Area PRSs, no VOCs are expected to be present in the subsurface of this PRS at levels exceeding SALs.

5.3.5 Background Comparisons for PRSs 10-003(a-o) and 10-007

Thirteen inorganics, arsenic, barium, beryllium, cadmium, chromium, copper, lead, manganese, mercury, nickel, sodium, silver, and zinc, had concentrations greater than the background screening values. The background screening value for silver is the detection limit and thus there are no silver data available for statistical background comparisons. Statistical comparisons were made between PRS data for the remainder of the inorganics detected above background screening values (arsenic, barium, beryllium, cadmium, chromium, copper, lead, manganese, mercury, nickel, sodium, and zinc) and LANL-wide soil background data. These statistical comparisons are discussed in detail in Appendix D. The concentrations of these inorganics are not statistically elevated compared to the LANL-wide soil data. As shown in Table D-3 and Figs. D-1 through D-13 in Appendix D, only silver exceeds soil background concentrations, and silver is carried forward to the screening assessment for PRSs 10-003(a-o) and 10-007. All silver data for PRSs 10-003(a-o) and 10-007 are reported in Table 5.3.5-1, and the locations where silver was detected are shown in Fig. 5.3.4-1.

TABLE 5.3.5-1

INORGANICS WITH CONCENTRATIONS GREATER THAN BACKGROUND UTLs FOR PRSs 10-003(a-o) and 10-007

SAMPLE ID	DEPTH (ft)	MATRIX	SILVER (mg/kg)
		SAL (mg/kg) [a]	380
		UTL (mg/kg) [b]	NA[c]
AAB6409	15 – 15.9	Alluvium	2.8
AAB3033D[d]	30.3 – 30.9	Alluvium	1.8
AAB6343D	31.4 – 31.9	Alluvium	1.5
AAB6321	7.5 – 8.5	Alluvium	13.3
AAB9297D	15.8 – 16.8	Alluvium	0.53
AAB9363D	19.5 – 20	Alluvium	0.45
AAB6211D	38.8 – 39.4	Pumice	0.52
AAB6376D	36.6 – 37.1	Transitional	0.57
AAB9274D	36.6 – 37.4	Transitional	0.6

[a] SAL = Screening action level.
[b] UTL = Background upper tolerance limit.
[c] No applicable value is available
[d] A "D" notation indicates that the sample is a field duplicate.

5.3.6 Evaluation of Organic Constituents for PRSs 10-003(a-o) and 10-007

Twelve organics, bis(2-ethylhexyl)phthalate, dichloroethene[1,1-], diethyl phthalate, dinitrotoluene[2,4-], dinitrotoluene[2,6-], ethylbenzene, octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX), naphthalene, nitrotoluene[m-], trimethylbenzene[1,2,4-], trimethylbenzene[1,3,5-], and mixed-xylenes (o+m+p), were detected in samples collected from PRSs 10-003(a-o) and 10-007. Dinitrotoulene[2,4-], dinitrotoluene[2,6], and nitrotoluene[m-] were analyzed in request 18008, which exceeded holding times and therefore the data for these chemicals are flagged J or UJ. HMX was analyzed in request 18609, which exceeded holding times causing the data to be flagged J or UJ. Additionally, sample AAB3004 had a low surrogate recovery associated with it; thus, the result for HMX could be 57% higher than recorded. Therefore, the result of 1.48 mg/kg for HMX could possibly be as high as 4.33 mg/kg. This, however, would cause no change in the screening assessment because the SAL for HMX (3 300 mg/kg) is much higher than 4.33 mg/kg. The results for these analytes are summarized in Table 5.3.6-1, and the locations where they were detected are shown on Fig. 5.3.4-1.

TABLE 5.3.6-1

PRSs 10-003(a-o) and 10-007 SOIL CONCENTRATION FOR ORGANIC ANALYTES WITH VALUES GREATER THAN EQLs

SAMPLE ID	DEPTH (ft)	MATRIX TYPE	BIS(2-ETHYLHEXYL) PHTHALATE (mg/kg)	DICHLORO-ETHENE[1,1-] (mg/kg)	DIETHYL PHTHALATE (mg/kg)	DINITRO-TOLUENE[2,4-] (mg/kg)	DINITRO TOLUENE[2,6-] (mg/kg)	ETHYL-BENZENE (mg/kg)
		SAL (mg/kg)[a]	32	0.038	52 000	130	65	690
		EQL (mg/kg)[b]	0.33	0.01	0.33	0.33	0.33	0.01
AAB3004	4.3 – 4.9	Alluvium	–	–	–	<0.13	<0.13	–
AAB3046	3.7 – 4.7	Alluvium	<0.34	–	15	<0.13	<0.13	–
AAB6122	41.7 – 42.3	Transitional	2.4	–	<0.38	<0.062	<0.093	–
AAB6152	30 – 31.2	Transitional	0.59	–	<0.33	<0.13	<0.13	–
AAB6198	4 – 4-5	Alluvium	<0.37	–	<0.37	0.2	0.2	–
AAB9274	36.6 – 37.4	Transitional	<0.39	<0.006	<0.39	<0.055	<0.081	0.016
AAB9277	48.7 – 49.4	Qbo[c]	<0.44	<0.007	<0.44	<0.056	<0.083	0.014
AAB9283	36 – 37	Qbo	<0.4	0.007	<0.4	<0.055	<0.081	<0.006
AAB9300	35.7 – 36.9	Pumice	<0.37	<0.006	<0.37	<0.055	<0.081	<0.006
AAB9337	11.1 – 11.8	Alluvium	<0.41	<0.005	<0.41	<0.41	<0.41	<0.005
AAB9341	16.9 – 17.5	Alluvium	<0.34	<0.005	<0.34	<0.34	<0.34	<0.005
AAB9342	19.2 – 20	Alluvium	<0.41	<0.005	<0.35	<0.35	<0.35	<0.005
AAB9424	35.3 – 36	Transitional	<0.4	<0.006	<0.4	<0.4	<0.4	<0.006

TABLE 5.3.6-1 (CONTINUED)

PRSs 10-003(a-o) and 10-007 SOIL CONCENTRATION FOR ORGANIC ANALYTES WITH VALUES GREATER THAN EQLs

SAMPLE ID	DEPTH (ft)	MATRIX TYPE	HMX (mg/kg)	NAPH-THALENE (mg/kg)	NITRO TOLUENE[m-] (mg/kg)	TRIMETHYL-BENZENE [1,2,4-] (mg/kg)	TRIMETHYL-BENZENE [1,3,5-] (mg/kg)	XYLENES (o+m+p) [MIXED-] (mg/kg)
		SAL (mg/kg)[a]	3 300	800	650	8	6.4	990
		EQL (mg/kg)[b]	NA	0.33	NA	NA	NA	0.01
AAB3004	4.3 – 4.9	Alluvium	1.48	-	<0.13	–	–	–
AAB3046	3.7 – 4.7	Alluvium	<1.1	<0.34	<0.13	–	–	–
AAB6122	41.7 – 42.3	Transitional	<0.166	<0.38	<0.161	–	–	–
AAB6152	30 – 31.2	Transitional	<1.1	<0.33	<0.13	–	–	–
AAB6198	4 – 4-5	Alluvium	<1.1	<0.37	0.79	–	–	–
AAB9274	36.6 – 37.4	Transitional	<0.165	<0.39	<0.161	0.028	0.009	0.035
AAB9277	48.7 – 49.4	Qbo[c]	<0.169	<0.44	<0.164	0.039	0.014	0.027
AAB9283	36 – 37	Qbo	<0.166	<0.4	<0.161	<0.006	<0.006	<0.006
AAB9300	35.7 – 36.9	Pumice	<0.166	<0.37	<0.161	<0.006	<0.006	0.006
AAB9337	11.1 – 11.8	Alluvium	–	0.13	–	<0.005	<0.005	<0.005
AAB9341	16.9 – 17.5	Alluvium	–	0.013	–	<0.005	<0.005	<0.005
AAB9342	19.2 – 20	Alluvium	–	0.009	–	<0.005	<0.005	<0.005
AAB9424	35.3 – 36	Transitional	–	0.008	–	<0.006	<0.006	<0.006

[a] SAL = Screening action level.
[b] EQL = Estimated quantitation limit.
[c] Qbo = The Otowi Member of the Bandelier Tuff.
NA = No applicable value is available.

5.3.7 Human Health Assessment for PRSs 10-003(a-o) and 10-007

5.3.7.1 Screening Assessment for PRSs 10-003(a-o) and 10-007

This subsection discusses the comparison with SALs for RCRA COPCs detected at levels greater than background UTLs or with no background data for comparison at PRSs 10-003(a-o) and 10-007.

Greater than or equal to SAL. No chemicals were detected above SALs.

No SAL. All of the chemicals detected at PRSs 10-003(a-o) and 10-007 had SALs for comparison.

Below SAL. Thirteen chemicals, bis(2-ethylhexyl)phthalate, dichloroethene[1,1-], diethyl phthalate, dinitrotoluene[2,4-], dinitrotoluene[2,6-], ethylbenzene, HMX, naphthalene, nitrotoluene[m-], trimethylbenzene[1,2,4-], trimethylbenzene[1,3,5-], mixed-xylenes(o+m+p), and silver were all detected in concentrations below their respective SALs.

To evaluate multiple chemical effects for this data set, COPCs detected below their respective SALs were grouped according to their toxicological effects (carcinogenic or noncarcinogenic). SALs for all chemicals were normalized and summed as described in Subsection 3.4.1. The SALs used in the SALs comparison for ethylbenzene, naphthalene, and xylenes are based on the level of saturation for these particular chemicals; these SALs are not risk-based. In order to include ethylbenzene, naphthalene, and xylenes in the risk-based multiple chemical evaluation, the EPA Region III risk-based concentrations for these three chemicals are used (EPA 1995, 06-0140). The results of the analysis are shown in Table 5.3.7.1.

The results of the multiple chemical evaluation based on both carcinogenic and noncarcinogenic effects are less than one, indicating that potential resultant adverse human health effects from exposure are unlikely. Therefore, all of the chemicals with concentrations below their respective SALs are eliminated as COPCs.

At the conclusion of this screening assessment, no RCRA chemicals remain as COPCs.

TABLE 5.3.7.1

MULTIPLE CHEMICAL EVALUATION FOR PRSs 10-003(a-o) and 10-007

CHEMICAL	SAMPLE VALUE (mg/kg)	SAL[a] (mg/kg)	NORMALIZED VALUE
SAL BASED ON CARCINOGENIC EFFECTS			
Dichloroethene[1,1-]	0.007	0.038	0.18
Dinitrotoluene[2,4-]	0.2	130	0.002
Dinitrotoluene[2,6-]	0.2	65	0.003
NORMALIZED SUM			0.19
SAL BASED ON NONCARCINOGENIC EFFECTS			
Diethyl phthalate	15	52 000	0.0003
Ethylbenzene	0.016	7 800[b]	0.000002
HMX	1.48	3 300	0.0004
Naphthalene	0.13	3 100[b]	0.00004
Nitrotoluene[m-]	0.79	650	0.001
Silver	13.3	380	0.035
Trimethylbenzene[1,2,4-]	0.039	8	0.005
Trimethylbenzene[1,3,5-]	0.014	6.4	0.002
Xylenes(o+m+p)[Mixed-]	0.035	160 000[b]	0.0000002
NORMALIZED SUM			0.04

[a] SAL = Screening action level.
[b] The SALs for ethylbenzene, naphthalene and xylenes are from EPA Region III (EPA 1995, 06-0140).

5.3.7.2 Risk Assessment for PRSs 10-003(a-o) and 10-007

No risk assessment was performed for PRSs 10-003(a-o) and 10-007 because there were no chemicals detected above SALs and the results of the multiple chemical evaluation conducted for chemicals detected below SALs indicate that potential resultant adverse human health effects from exposure are unlikely.

5.3.8 Ecological Assessment for PRSs 10-003(a-o) and 10-007

The preliminary ecological screening assessment indicates that this site is located in a floodplain and is potentially within the foraging range of the spotted bat and peregrine falcon. These factors must be taken into consideration should any remedial action be undertaken at this site.

Further ecological risk assessment at this site will be deferred until the site can be assessed as part of the new ecological exposure unit approach that is being developed by LANL in conjunction with EPA Region VI and the New Mexico Environment Department.

5.3.9 Extent of Contamination for PRSs 10-003(a-o) and 10-007

There were no RCRA chemicals retained as COPCs in the screening assessment for PRSs 10-003(a-o) or 10-007.

5.3.10 Conclusions and Recommendations for PRSs 10-003(a-o) and 10-007

Based on the results of the Phase I RFI, PRSs 10-003(a-o) and 10-007 are recommended for removal from the HSWA Module of LANL's RCRA operating permit. This recommendation is based on LANL's No Further Action Criteria Policy, criterion 4, which states that the PRS has been characterized or remediated in accordance with current applicable state or federal regulations, and available data indicate that contaminants of concern are either not present or are present in concentrations that pose an acceptable level of risk. A Class III permit modification will be requested to remove PRSs 10-003(a-o) or 10-007 from the HSWA Module of LANL's RCRA operating permit (Environmental Restoration Project 1995, 1173).

5.4 PRS 10-004(a)

PRS 10-004(a) consists of a former sanitary septic tank (TA-10-40) that served the former personnel building (TA-10-21) at TA-10. No RCRA constituents are retained as COPCs in the human health screening assessment for PRS 10-004(a), and this PRS is recommended for removal from the RCRA permit in a Class III permit modification.

5.4.1 History of PRS 10-004(a)

PRS 10-004(a) is discussed in Subsection 3.1.4 of the RFI Work Plan for OU 1079 (LANL 1992, 0783).

PRS 10-004(a) was a sanitary septic tank that served the personnel building (TA-10-21) at TA-10 from 1949 through 1963. The tank had a capacity of 1 060 gal., and discharged to a pit measuring 8 ft long by 12 ft deep. This septic system discharged to a drain line and outfall located in a stream channel approximately 200 ft north-northeast of PRS 10-002(a).

The COPCs for PRS 10-004(a) include strontium-90, total uranium, barium, cadmium, lead, beryllium, TAL metals, VOCs, and SVOCs. The discussion of the results for radiological constituents will be included in an addendum to this report.

5.4.2 Description of PRS 10-004(a)

PRS 10-004(a) was removed during the 1963 decontamination and decommissioning of TA-10. The environmental setting for PRS 10-004(a) is discussed in Section 2.0 of this report.

5.4.3 Previous Investigations of PRS 10-004(a)

PRS 10-004(a) was investigated previous to the RFI. These previous investigations are described in Subsection 3.1.4.7.2 of the RFI Work Plan for OU 1079 and summarized below (LANL 1992, 0783).

PRS 10-004(a) was removed during the 1963 decontamination and decommissioning of TA-10. No information is available concerning the fate of the disposal pit associated with this PRS. It is not clear whether or not the 4-in. diameter tile drain to this outfall or soil around the outfall were removed during decommissioning.

During the 1977 FUSRAP survey, several boreholes were drilled and trenches were excavated around PRS 10-004(a). One trench was excavated across the area where the line led from the personnel building. Another was excavated across the septic tank location, and two more were excavated across the location of the line leading from the tank to the pit. Two boreholes were augered in and near the pit location. The auger holes and trenches indicated background or below background levels of gross alpha and gross beta activity. Gross alpha radioactivity ranged from 4 to 44 pCi/g and gross beta radioactivity ranged from 2 to 4 pCi/g.

5.4.4 Field Investigation of PRS 10-004(a)

The objective of the RFI at PRS 10-004(a) was to determine the presence or absence of contaminants at the site. The RFI was conducted in September and October 1994. The area of PRS 10-004(a) was characterized using one four-armed drilling and sampling array (Fig. 5.4.4-1). This array was centered on structure TA-10-40, and was oriented in the four cardinal directions (i.e., oriented north-south and east-west). The array consisted of eight boreholes, each drilled to a depth of 50 ft bgs. Boreholes were spaced 10 ft apart along the arms of the array.

At least four samples were collected from each borehole for a full suite of fixed laboratory analyses. These four samples were collected from 1) the midpoint of the first 10-ft interval, 2) the bottom of the borehole, 3) the interval exhibiting the highest field screening levels for radionuclides and VOCs, and 4) a random core interval retrieved from below 10 ft bgs and selected to target locations immediately underlying previously existing structures, exhibiting a change in color or obvious staining of the core, showing significant changes in lithology,

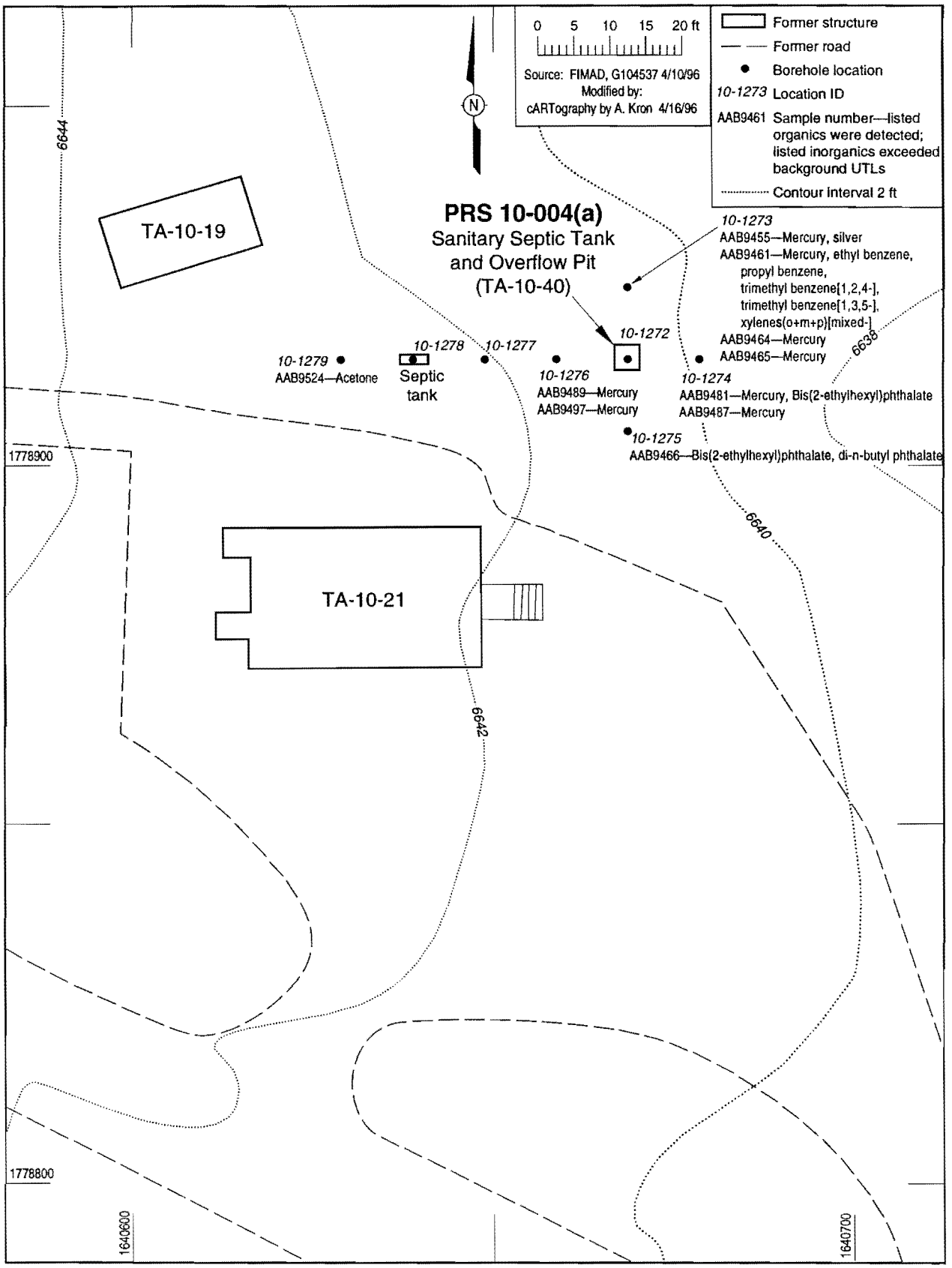


Fig. 5.4.4-1. Locations of PRS 10-004(a) samples, and locations of detected organic analytes and inorganic analytes above background.

and/or contacting the fill/tuff interface. Samples were submitted for analysis for VOCs, SVOCs, TAL metals, total uranium, and strontium-90. Fifty percent of the total number of samples sent to the fixed laboratory for analysis were also analyzed for high explosives. All appropriate QC samples, including duplicates, field blanks, and rinsate blanks, were collected during subsurface soil sampling activities. Sampling information is summarized in Table 5.4.4-1.

No elevated VOC concentrations or radioactivity were detected by field screening with hand-held instruments in any of the boreholes drilled at PRS 10-004(a). All boreholes were backfilled with drill cuttings and completed with a 2-ft thick concrete cap, except 10-1276 and 1-1267, which are described below.

The following deviations from the work plan occurred.

Borehole 10-1277 was drilled and sampled to a total depth of approximately 50 ft bgs. It was extended to 68 ft and then reamed to a 10.75-in. diameter and completed as a groundwater monitoring well. Although completed as a dry hole, it will be used for long-term monitoring.

Borehole 10-1276 was originally drilled and sampled to a total depth of 50 ft bgs. It was extended to a depth of 67 ft bgs and completed as a neutron access tube for long-term monitoring of soil moisture.

TABLE 5.4.4-1

SUMMARY OF SAMPLES COLLECTED AT PRS 10-004(a)

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]					
				HIGH EXPLOSIVES	METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM	VOCs[e]
10-1272	AAB9448	23.7-24.5 ft	Alluvium	—	19821	19878	19316	19878	19316
10-1272	AAB9451	36-37 ft	Alluvium	—	19821	19878	19316	19878	19316
10-1272	AAB9454	49.2-50 ft	Pumice	—	19821	19878	19316	19878	19316
10-1273	AAB9455	2.5-3.3 ft	Alluvium	—	19850	20068	19377	20068	19377
10-1273	AAB9461	27.5-28.3 ft	Alluvium	—	19850	20068	19377	20068	19377
10-1273	AAB9464	36-36.8 ft	Alluvium	—	19850	20068	19377	20068	19377
10-1273	AAB9465	49.2-50 ft	Pumice	—	19850	20068	19377	20068	19377
10-1274	AAB9477	2.5-3.4 ft	Alluvium	—	19898	20077	19420	20077	19420
10-1274	AAB9480	18.5-20 ft	Alluvium	—	19898	20077	19420	20077	19420
10-1274	AAB9481–Field Duplicate	18.5-20 ft	Alluvium	—	19898	20077	19420	20077	19420
10-1274	AAB9484	27.5-28.3 ft	Alluvium	—	19898	20077	19420	20077	19420
10-1274	AAB9487	49-50 ft	Pumice	—	19898	20077	19420	20077	19420
10-1275	AAB9466	5-5.8 ft	Alluvium	19420	19898	20077	19420	20077	19420
10-1275	AAB9469	14.2-15 ft	Alluvium	19420	19898	20077	19420	20077	19420
10-1275	AAB9474	34.2-35 ft	Alluvium	19420	19898	20077	19420	20077	19420
10-1275	AAB9476	49.2-50 ft	Pumice	19420	19898	20077	19420	20077	19420
10-1276	AAB9488	2.5-3.6 ft	Alluvium	—	19898	20077	19420	20077	19420
10-1276	AAB9489	14.2-15 ft	Alluvium	—	19898	20077	19420	20077	19420
10-1276	AAB9494	34.2-35 ft	Alluvium	—	19898	20077	19420	20077	19420
10-1276	AAB9497	49-50 ft	Pumice	—	19898	20077	19420	20077	19420
10-1277	AAB9498	2.5-3.5 ft	Alluvium	19460	20067	20073	19460	20073	19460
10-1277	AAB9506	22.5-23.3 ft	Alluvium	19460	20067	20073	19460	20073	19460
10-1277	AAB9509	38-39 ft	Transitional	19460	20067	20073	19460	20073	19460
10-1277	AAB9511	61.5-62.5 ft	Puyé	19460	20067	20073	19460	20073	19460
10-1278	AAB9512	2.5-3.7 ft	Alluvium	19487	20079	20082	19487	20082	19487
10-1278	AAB9513–Field Blank	NA[f]	Water	19487	20079	20082	19487	20082	—

TABLE 5.4.4-1(CONTINUED)

SUMMARY OF SAMPLES COLLECTED AT PRS 10-004(a)

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]					
				HIGH EXPLOSIVES	METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM	VOCs[e]
10-1278	AAB9514–Equipment Blank	NA	Water	19487	20079	20082	19487	20082	—
10-1278	AAB9517	19.2-20 ft	Alluvium	19487	20079	20082	19487	20082	19487
10-1278	AAB9520	33-33.7 ft	Alluvium	19487	20079	20082	19487	20082	19487
10-1278	AAB9523	49-50 ft	Pumice	19487	20079	20082	19487	20082	19487
10-1279	AAB9524	3-4 ft	Alluvium	19503	20088	20083	19503	20083	19503
10-1279	AAB9527	14-15 ft	Alluvium	19503	20088	20083	19503	20083	19503
10-1279	AAB9528–Field Duplicate	14-15 ft	Alluvium	19503	20088	20083	19503	20083	19503
10-1279	AAB9533	38.5-39.4 ft	Transitional	19503	20088	20083	19503	20083	19503
10-1279	AAB9535	49-50 ft	Pumice	19503	20088	20083	19503	20083	19503

[a] Listed five-digit number indicates request number under which analysis was performed.
[b] Metals = Target analyte list metals.
[c] Radionuclide results will be discussed in an addendum to this report.
[d] SVOCs = Semivolatile organic compounds.
[e] VOCs = Volatile organic compounds.
[f] NA = Not applicable.
– = Sample was not analyzed for this suite.

5.4.5 Background Comparisons for PRS 10-004(a)

Five inorganics, beryllium, lead, mercury, silver, and zinc, had concentrations greater than the background screening values. The background screening value for silver is the detection limit and thus there are no silver data available for statistical background comparisons. Statistical comparisons were made between PRS data for the remainder of the inorganics detected above background screening values (beryllium, lead, mercury, and zinc) and LANL-wide soil background data. These statistical comparisons are discussed in detail in Appendix D. As shown in Table D-4 and Figs. D-3, D-7, and D-13 of Appendix D, beryllium, lead, and zinc concentrations are not statistically elevated compared to the LANL-wide soil data. As shown in Table D-4 and Fig. D-9, mercury is statistically elevated (by the Slippage test). Therefore, mercury and silver (see Fig. D-11) exceed soil background concentrations, and mercury and silver are carried forward to the screening assessment for PRS 10-004(a). All mercury and silver data for PRS 10-004(a) are shown in Table 5.4.5-1, and the locations with mercury and silver values greater than background are shown in Fig. 5.4.4-1.

TABLE 5.4.5-1

INORGANICS WITH CONCENTRATIONS GREATER THAN BACKGROUND UTLs FOR PRS 10-004(a)

SAMPLE ID	DEPTH (ft)	MATRIX	MERCURY (mg/kg)	SILVER (mg/kg)
		SAL[a]	23	380
		UTL[b]	0.1	NA[c]
AAB9455	2.5 – 3.3	Alluvium	0.72 (J)[d]	<0.2
AAB9455D[e]	2.5 – 3.3	Alluvium	0.43	0.38
AAB9461	27.5 – 28.3	Alluvium	0.52 (J)	<0.4
AAB9464	36 – 36.8	Alluvium	0.69 (J)	<0.28
AAB9481	18.5 – 20	Alluvium	0.55 (J)	<0.33
AAB9489	14.2 – 15	Alluvium	0.23 (J)	<0.61
AAB9465	49.2 – 50	Pumice	0.11 (J)	<0.66
AAB9487	49 – 50	Pumice	0.84	NA
AAB9487	49 – 50	Pumice	0.29 (J)	<0.61
AAB9497	49 – 50	Pumice	0.13 (J)	<0.8

[a] SAL = Screening action level.
[b] UTL = Background upper tolerance limit.
[c] NA = Not analyzed.
[d] J = Value is qualified as estimated.
[e] A "D" notation indicates that the sample is a field duplicate.

5.4.6 Evaluation of Organic Constituents for PRS 10-004(a)

Eight organics, acetone, bis(2-ethylhexyl)phthalate, di-n-butyl phthalate, ethylbenzene, propylbenzene, trimethylbenzene[1,2,4-], trimethylbenzene[1,3,5-], and mixed-xylenes(o+m+p), were detected in samples collected from PRS 10-004(a). The results for these analytes are summarized in Table 5.4.6-1, and the locations where they were detected are shown on Fig. 5.4.4-1.

5.4.7 Human Health Assessment for PRS 10-004(a)

5.4.7.1 Screening Assessment for PRS 10-004(a)

This section discusses the comparison with SALs for RCRA COPCs detected at levels greater than background UTLs or with no background data for comparison at PRS 10-004(a).

Greater than or equal to SAL. No chemicals were detected above SALs.

No SAL. The only chemical detected with no SAL for comparison was propylbenzene. While there is no published SAL for propylbenzene, there are other toxicity standards by which to judge this chemical. The oral LD50 in rats (the dose at which 50% of the test animals die) is 6 040 mg/kg (Budavari et al. 1989, 06-0141). Chemicals that have a probable oral lethal dose between 5 000 and 15 000 mg/kg are considered "slightly toxic" (Gosselin et al. 1984, 1280). In order to be lethal to a 150 lb human, approximately one pint of pure propylbenzene would have to be ingested. Propylbenzene is eliminated as a COPC because it is classified as a chemical that is only slightly toxic and it is present at the site in quantities approximately five orders of magnitude lower than the mean lethal dose.

Below SAL. Nine chemicals, acetone, bis(2-ethylhexyl)phthalate, di-n-butyl phthalate, ethyl benzene, mercury, trimethylbenzene[1,2,4-], trimethylbenzene[1,3,5-], mixed-xylenes(o+m+p), and silver were detected in concentrations below their respective SALs.

To evaluate multiple chemical effects for this data set, COPCs detected below their respective SALs were grouped according to their toxicological effects (carcinogenic or noncarcinogenic). SALs for all chemicals were normalized and summed as described in Subsection 3.4.1. Only one chemical, bis(2-ethylhexyl)phthalate, falls into the carcinogenic category. Because there are no other carcinogens with which to combine bis(2-ethylhexyl)phthalate, the multiple chemical evaluation for carcinogens is not conducted. The remaining eight chemicals fall into the noncarcinogenic category. The SALs used for ethylbenzene and xylenes are based on the level of saturation for these chemicals; these numbers are not risk-based. In order to include ethylbenzene and xylenes in the risk-based multiple chemical evaluation, the EPA Region III

TABLE 5.4.6-1

PRS 10-004(a) SOIL CONCENTRATION FOR ORGANIC ANALYTES WITH VALUES GREATER THAN EQLs

SAMPLE ID	DEPTH (ft)	MATRIX	ACETONE (mg/kg)	BIS (2-ETHYLHEXYL) PHTHALATE (mg/kg)	DI-N-BUTYL PHTHALATE (mg/kg)	ETHYL-BENZENE (mg/kg)	PROPYL BENZENE (mg/kg)	TRIMETHYL BENZENE [1,2,4-] (mg/kg)	TRIMETHYL-BENZENE [1,3,5-] (mg/kg)	XYLENES (o+m+p) [MIXED-] (mg/kg)
		SAL[a]	2 000	32	6 500	690	NA[c]	8	6.4	990
		EQL[b]	0.01	0.33	0.33	0.01	NA	NA	NA	0.01
AAB9524	3 – 4	Alluvium	0.04	<0.34	<0.34	<0.005	<0.005	<0.005	<0.005	<0.005
AAB9481	18.5 – 20	Alluvium	<0.021	1.1	<0.35	<0.005	<0.005	<0.005	<0.005	<0.005
AAB9466	5 – 5.8	Alluvium	<0.02	0.54	0.49	<0.005	<0.005	<0.005	<0.005	<0.005
AAB9461	27.5 – 28.3	Alluvium	<0.02	<0.36	<0.36	0.039	0.013	0.075	0.026	0.065

[a] SAL = Screening action level.
[b] EQL = Estimated quantitation limit.
[b] NA = No applicable value is available.

risk-based concentrations for these two chemicals are used (EPA 1995, 06-0140). The results of the analysis are shown in Table 5.4.7-1.

The result of the multiple chemical evaluation based on noncarcinogenic effects is less than one, indicating that potential resultant adverse human health effects from exposure are unlikely. Therefore, all of the chemicals with concentrations below their respective SALs are eliminated as COPCs.

TABLE 5.4.7-1

MULTIPLE CHEMICAL EVALUATION FOR PRS 10-004(a)

CHEMICAL	SAMPLE VALUE (mg/kg)	SAL[a] (mg/kg)	NORMALIZED VALUE
Acetone	0.4	2 000	0.0002
Di-n-butyl phthalate	0.49	6 500	0.0001
Ethylbenzene	0.039	7 800[b]	0.000005
Mercury	0.84	23	0.04
Silver	0.38	380	0.001
Trimethylbenzene[1,2,4-]	0.075	8	0.009
Trimethylbenzene[1,3,5-]	0.026	6.4	0.004
Xylenes (o+m+p)[Mixed-]	0.065	160 000[b]	0.0000004
NORMALIZED SUM			0.05

[a] SAL = Screening action level.
[b] The SALs for ethylbenzene and xylenes are from EPA Region III (EPA 1995, 06- 0140).

5.4.7.2 Risk Assessment for PRS 10-004(a)

No risk assessment was performed for PRS 10-004(a) because there were no chemicals detected above SAL and the results of the multiple chemical evaluation conducted for chemicals detected below SALs indicate that potential resultant adverse human health effects from exposure are unlikely.

5.4.8 Ecological Assessment for PRS 10-004(a)

The preliminary ecological screening assessment indicates that this site is located in a floodplain and is potentially within the foraging range of the spotted bat and peregrine falcon. These factors must be taken into consideration should any remedial action be undertaken at this site.

Further ecological risk assessment at this site will be deferred until the site can be assessed as part of the new ecological exposure unit approach that is being developed by LANL in conjunction with EPA Region VI and the New Mexico Environment Department.

5.4.9 Extent of Contamination for PRS 10-004(a)

There were no RCRA chemicals retained as COPCs in the screening assessment for PRS 10-004(a).

5.4.10 Conclusions and Recommendations for PRS 10-004(a)

Based on the results of the Phase I RFI, PRS 10-004(a) is recommended for removal from the HSWA Module of LANL's RCRA operating permit. This recommendation is based on LANL's No Further Action Criteria Policy, criterion 4, which states that the PRS has been characterized or remediated in accordance with current applicable state or federal regulations, and available data indicate that contaminants of concern are either not present or are present in concentrations that pose an acceptable level of risk. A Class III permit modification will be requested to remove PRS 10-004(a) from the HSWA Module of LANL's RCRA operating permit (Environmental Restoration Project 1995, 1173).

5.5 PRS 10-004(b)

PRS 10-004(b) consists of former sanitary septic tank (TA-10-38) that served the former radiochemistry laboratory. No RCRA constituents are retained as COPCs in the human health screening assessment for PRS 10-004(b), and this PRS is recommended for removal from the RCRA permit in a Class III permit modification.

5.5.1 History of PRS 10-004(b)

PRS 10-004(b) is discussed in Subsection 3.1.4 of the RFI Work Plan for OU 1079 (LANL 1992, 0783).

PRS 10-004(b) was a 540-gal. sanitary septic tank that served the radiochemistry laboratory. It was constructed of reinforced concrete and measured 4 ft by 10 ft by 4 ft deep. This tank handled sanitary waste, but is suspected to have also received liquid wastes from the radiochemistry laboratory (TA-10-1). The overflow from PRS 10-004(b) drained through a 4-in. diameter vitrified clay open-joint drain pipe to the stream channel. PRS 10-004(b) was used from 1944 to 1963. The COPCs for PRS 10-004(b) include strontium-90, total uranium, barium, cadmium, lead, beryllium, TAL metals, VOCs, and SVOCs. The discussion of the results for radiological constituents will be included in an addendum to this report.

5.5.2 Description of PRS 10-004(b)

PRS 10-004(b) was removed during the 1963 decontamination and decommissioning of TA-10. It is likely that the line and soil surrounding the tank were also removed during the liquid waste disposal system excavation. The environmental setting for PRS 10-004(b) is discussed in Section 2.0 of this report.

5.5.3 Previous Investigations of PRS 10-004(b)

PRS 10-004(b) was investigated previous to the RFI. These previous investigations are described in Subsection 3.1.4.8.2 of the RFI Work Plan for OU 1079 and summarized below (LANL 1992, 0783).

During the 1963 decontamination and decommissioning, readings from PRS 10-004(b) prior to its removal were less than 5.0 mR/hr. In 1973, a test hole designated M-2 was drilled to a depth of 18.9 ft near the outfall of PRS 10-004(b). Sample analyses indicated strontium-90 surface and subsurface contamination, while plutonium levels were at background. Five additional test holes were drilled near test hole M-2 in 1974. These holes indicated above background gross beta radioactivity.

During the FUSRAP survey, trenching was performed along the line leading from the radiochemistry laboratory (TA-10-1) to PRS 10-004(b), and then along the outfall line leading from 10-004(b) to the stream bed leach field. Many samples were collected along the trench, and they indicated gross beta radioactivity of up to 48 pCi/g and gross alpha radioactivity of up to 62 pCi/g.

5.5.4 Field Investigation of PRS 10-004(b)

The objective of the RFI at PRS 10-004(b) was to characterize the nature, concentration, and lateral and vertical extent of potential subsurface contamination related to historical activities at the site. The RFI was conducted in June and July 1994. The area of PRS 10-004(b) was characterized using one four-armed drilling and sampling array (Fig. 5.5.4-1). This array was centered on structure TA-10-38, and was oriented slightly east of north following a line of trenching remaining from previous investigations. The east-west arms of this array are oriented to align with structure TA-10-39, which was examined as part of the Central Area. The array consisted of 7 boreholes, each drilled to a depth of 50 ft bgs. Boreholes were spaced 10 ft apart along the arms of the array.

At least four samples were collected from each borehole for a full suite of fixed laboratory analyses. These four samples were collected from 1) the midpoint of the first 10-ft interval,

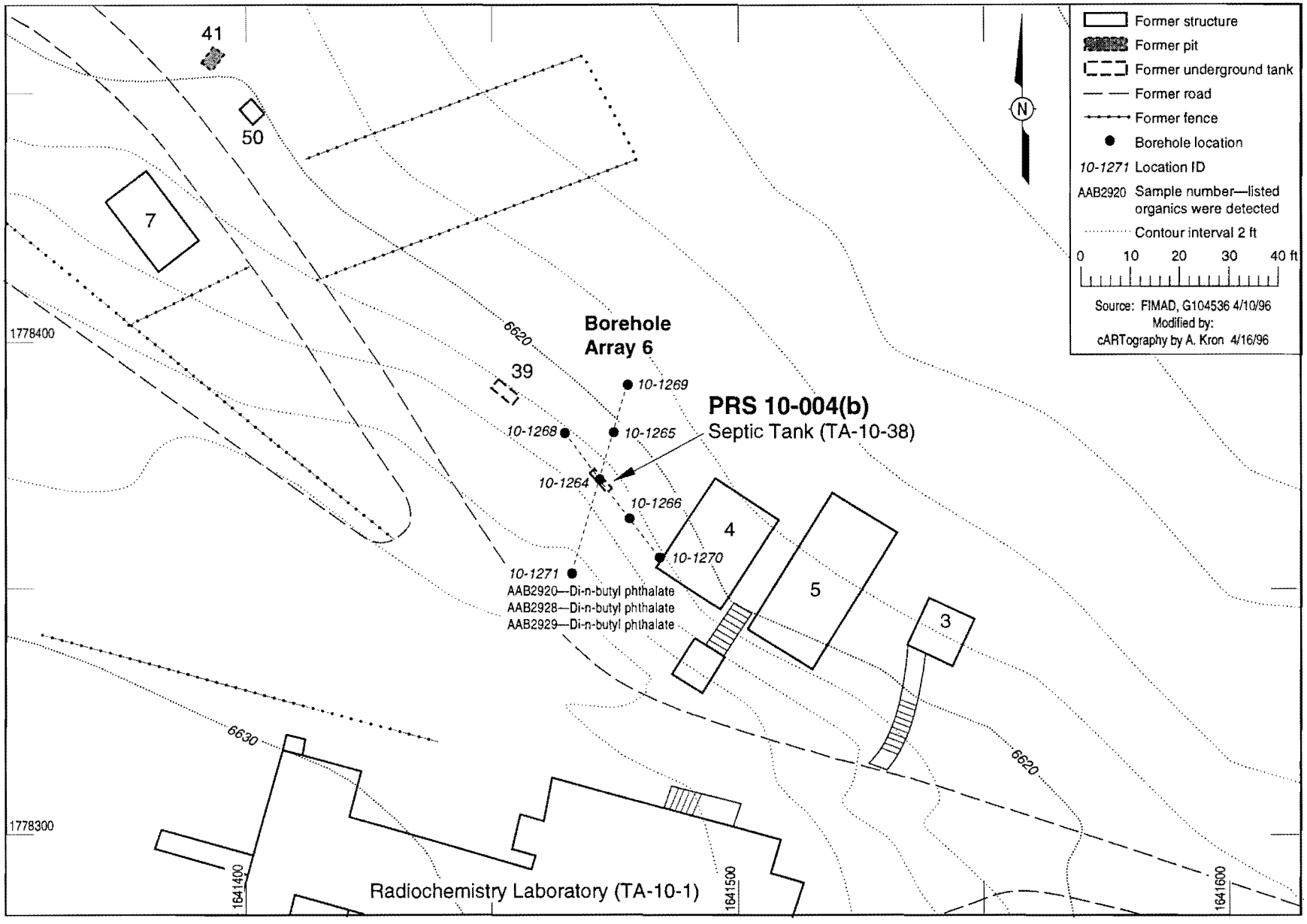


Fig. 5.5.4-1. Locations of PRS 10-004(b) samples and detected organic analytes.

2) the bottom of the borehole, 3) the interval exhibiting the highest field screening levels for radionuclides and VOCs, and 4) a random core interval retrieved from below 10 ft bgs and selected to target locations immediately underlying previously existing structures, exhibiting a change in color or obvious staining of the core, showing significant changes in lithology, and/or contacting the fill/tuff interface. Samples were submitted for analysis for SVOCs, TAL metals, total uranium, and strontium-90. All appropriate QC samples, including duplicates, field blanks, and rinsate blanks, were collected during subsurface soil sampling activities. Sampling information is summarized in Table 5.5.4-1.

Radioactive field screening with hand-held instruments indicated that beta/gamma radiation was detected in borehole 10-1271 at levels greater than background. Elevated levels were not confirmed by MRAL analyses of samples collected from the borehole. Elevated volatile organics were detected at a concentrations of 12 ppm in borehole 10-1270 at a depth of 0 to 2.5 ft bgs. Pine tree roots, which often emit natural organics that are detected by a PID, were observed in the core at intervals with elevated detections of VOCs. No elevated VOCs were detected with the PID from any other interval or borehole at PRS 10-004(b). Boreholes were backfilled with drill cuttings and completed with a 2-ft thick concrete cap.

The following deviations from the work plan occurred.

Borehole 10-1267 was not drilled because radiological and nonradiological constituents were not detected above background or SALs in other boreholes in the array based on field screening, MRAL results, and MCAL results. Furthermore, 10-1267 was located on a steep slope that prevented the safe operation of the drill rig in the designated location.

Fifty percent of the total number of samples collected at PRS 10-004(b) sent to the fixed laboratory for analysis were also to be analyzed for high explosives. In addition, the US EPA Region VI approval of the NOD response for the RFI work plan stipulated that samples must be collected for VOC analysis regardless of field screening results. However, no VOC nor high explosives analyses were requested for samples collected from the boreholes drilled at this PRS. Despite this deviation, there is sufficient evidence to suggest that VOCs and high explosive constituents are not present in the subsurface of this PRS at levels above SALs. Analytical results of samples collected from other PRSs in the TA-10 Subsurface Aggregate indicate that VOCs and high explosives are not present at levels above SALs. Also, VOC field screening of cores and samples from boreholes drilled at PRS 10-004(b) do not indicate the presence of VOCs.

TABLE 5.5.4-1

SUMMARY OF SAMPLES COLLECTED AT PRS 10-004(b)

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]			
				METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM
10-1264	AAB2893	3.5-4.1 ft	Alluvium	19780	19706	17869	19706
10-1264	AAB2903	48.2-49 ft	Pumice	19745	19964	17875	19964
10-1264	AAB2904	36.5-37 ft	Pumice	19745	19964	17875	19964
10-1264	AAB2905	9-9.5 ft	Alluvium	19745	19964	17875	19964
10-1265	AAB2935	3-3.5 ft	Alluvium	19781	19770	17880	19770
10-1265	AAB2944	36.5-37 ft	Pumice	18544	18709	18004	18709
10-1265	AAB2946	48.5-49 ft	Pumice	18544	18709	18004	18709
10-1265	AAB2947	28.6-28.9 ft	Alluvium	18544	18709	18004	18709
10-1266	AAB2949	3-3.5 ft	Alluvium	19114	19789	18046	19789
10-1266	AAB2958	40.2-40.8 ft	Pumice	19114	19789	18046	19789
10-1266	AAB2959	49.3-50 ft	Pumice	19114	19789	18046	19789
10-1266	AAB2960–Field Blank	NA[e]	Water	19793	19794	17993	19794
10-1266	AAB2961–Equipment Blank	NA	Water	19793	19794	17993	19794
10-1266	AAB2962	16.2-16.8 ft	Alluvium	19114	19789	18046	19789
10-1268	AAB2979	4.1-4.6 ft	Alluvium	19114	19789	18046	19789
10-1268	AAB2988	39.3-39.8 ft	Transitional	18852	18932	18149	18932
10-1268	AAB2989	49-49.5 ft	Qbo[f]	18852	18932	18149	18932
10-1268	AAB2990	20-20.5 ft	Alluvium	18852	18932	18149	18932
10-1269	AAB2906	3.5-4 ft	Alluvium	19761	18994	17874	18994
10-1269	AAB2915	47.5-48 ft	Qbo	19761	18994	17874	18994
10-1269	AAB2916	14-14.5 ft	Alluvium	19761	18994	17874	18994

TABLE 5.5.4-1 (CONTINUED)

SUMMARY OF SAMPLES COLLECTED AT PRS 10-004(b)

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]			
				METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM
10-1269	AAB2917	26.5-27 ft	Transitional	19761	18994	17874	18994
10-1270	AAB2963	4-4.8 ft	Alluvium	18849	18898	18100	18898
10-1270	AAB2964–Field Duplicate	4-4.8 ft	Alluvium	18849	18898	18100	18898
10-1270	AAB2973	40.6-41 ft	Transitional	20371	20370	18206	20370
10-1270	AAB2977	45.5-46 ft	Transitional	18849	18898	18100	18898
10-1270	AAB2978	34.6-34.8 ft	Transitional	18849	18898	18100	18898
10-1271	AAB2920	3.5-4 ft	Alluvium	19782	19771	17877	19771
10-1271	AAB2928	21.8-22.3 ft	Alluvium	19782	19771	17877	19771
10-1271	AAB2929–Field Duplicate	21.8-22.3 ft	Alluvium	19782	19771	17877	19771
10-1271	AAB2933	48-48.6 ft	Pumice	19781	19770	17880	19770
10-1271	AAB2934	38.3-39 ft	Transitional	19781	19770	17880	19770

[a] Listed five-digit number indicates request number under which analysis was performed.
[b] Metals = Target analyte list metals.
[c] Radionuclide results will be discussed in an addendum to this report.
[d] SVOCs = Semivolatile organic compounds.
[e] NA = Not applicable.
[f] Qbo = The Otowi Member of the Bandelier Tuff.

5.5.5 Background Comparisons for PRS 10-004(b)

One inorganic, arsenic, had concentrations greater than the background screening value. Statistical comparisons were made between arsenic PRS data and LANL-wide soil background data. These statistical comparisons are discussed in detail in Appendix D. As shown in Table D-5 and Fig. D-1 in Appendix D, the concentrations of arsenic are not statistically elevated compared to the LANL-wide soil data. Therefore, no inorganics exceed soil background concentrations, and no inorganics are carried forward to the screening assessment for PRS 10-004(b).

5.5.6 Evaluation of Organic Constituents for PRS 10-004(b)

One organic, di-n-butyl phthalate, was detected in samples collected from PRS 10-004(b). The results for this analyte are summarized in Table 5.5.6-1, and the location where this analyte was detected is shown on Fig. 5.5.4-1.

TABLE 5.5.6-1

PRS 10-004(b) SOIL CONCENTRATION FOR ORGANIC ANALYTES WITH VALUES GREATER THAN EQLs

SAMPLE ID	DEPTH (ft)	MATRIX	DI-N-BUTYL PHTHALATE (mg/kg)
		SAL[a]	6 500
		EQL[b]	0.33
AAB2920	3.5 – 4	Alluvium	0.73
AAB2928	21.8 – 22.3	Alluvium	1
AAB2929	21.8 – 22.3	Alluvium	0.47

[a] SAL = Screening action level.
[b] EQL = Estimated quantitation limit.

5.5.7 Human Health Assessment for PRS 10-004(b)

5.5.7.1 Screening Assessment for PRS 10-004(b)

This subsection discusses the comparison with SALs for RCRA COPCs detected at levels greater than background UTLs or with no background data for comparison at PRS 10-004(b).

Greater than or equal to SAL. No chemicals were detected above SALs.

No SAL. All of the detected chemicals had SALs available for comparison.

Below SAL. Di-n-butyl phthalate falls into the below SAL category. Because there are no other chemicals with which to combine di-n-butyl phthalate, the multiple chemical evaluation for noncarcinogens is not conducted.

All of the chemicals detected at PRS 10-004(b) are eliminated as COPCs. At the conclusion of this screening assessment, no RCRA chemicals remain as COPCs.

5.5.7.2 Risk Assessment for PRS 10-004(b)

No risk assessment was performed for PRS 10-004(b) because no RCRA chemicals were retained as COPCs in the screening assessment.

5.5.8 Ecological Assessment for PRSs 10-004(b)

The preliminary ecological screening assessment indicates that this site is located in a floodplain and is potentially within the foraging range of the spotted bat and peregrine falcon. These factors must be taken into consideration should any remedial action be undertaken at this site.

Further ecological risk assessment at this site will be deferred until the site can be assessed as part of the new ecological exposure unit approach that is being developed by LANL in conjunction with EPA Region VI and the New Mexico Environment Department.

5.5.9 Extent of Contamination for PRS 10-004(b)

There were no RCRA chemicals retained as COPCs in the screening assessment for PRS 10-004(b).

5.5.10 Conclusions and Recommendations for PRS 10-004(b)

Based on the results of the Phase I RFI, PRS 10-004(b) is recommended for removal from the HSWA Module of LANL's RCRA operating permit. This recommendation is based on LANL's No Further Action Criteria Policy, criterion 4, which states that the PRS has been characterized or remediated in accordance with current applicable state or federal regulations, and available data indicate that RCRA contaminants of concern are either not present or are present in concentrations that pose an acceptable level of risk. A Class III permit modification will be requested to remove PRS 10-004(b) from the HSWA Module of LANL's RCRA operating permit (Environmental Restoration Project 1995, 1173).

5.6 PRS 10-005

PRS 10-005 was an open pit used to contain shot debris swept from TA-10 firing sites and adjacent areas. No RCRA constituents are retained as COPCs in the human health screening assessment for PRS 10-005, and this PRS is recommended for removal from the RCRA permit in a Class III permit modification.

5.6.1 History of PRS 10-005

PRS 10-005 is discussed in Subsection 3.1.4 of the RFI Work Plan for OU 1079 (LANL 1992, 0783).

PRS 10-005 was an open pit located approximately 62 ft west of the northwest firing point and was used during the 1940s and 1950s to contain shot debris swept from the firing sites and adjacent areas. The dimensions of this pit are unknown as are the quantities and types of materials that were placed into it. The debris may have contained small quantities of uranium, strontium-90, lead, high explosives residues, and possibly beryllium.

The COPCs for PRS 10-005 include strontium-90, total uranium, lead, beryllium, barium, TAL metals, and high explosives. The discussion of the results for radiological constituents will be included in an addendum to this report.

5.6.2 Description of PRS 10-005

In 1957, PRS 10-005 was excavated, the wastes burned, and the ash taken to MDA C at TA-50. The specifics on how this operation was conducted, including pre- and post-burning activities are unknown. The environmental setting for PRS 10-005 is described in Section 2.0 of this report.

5.6.3 Previous Investigations of PRS 10-005

PRS 10-005 was investigated previous to the RFI. These previous investigations are described in Subsection 3.1.4.9.2 of the RFI Work Plan for OU 1079 and summarized below (LANL 1992, 0783).

Dose estimates from residual surface radioactivity at the firing sites were measured in 1961 with field instruments, and ranged from background (approximately 0 to 0.02 mR/hr) to about 0.6 mR/hr. None of the previous site investigations from 1961 to 1977 specifically targeted the surface disposal area for evaluation of soil contamination concentrations. However, the extensive TA-10 FUSRAP survey in 1977 encompassed this disposal area. Results of that

survey demonstrated that the highest surface gross alpha and gross beta activity were measured in the firing sites that encompassed this disposal area. However, the proximity of the firing sites to this disposal area lead to ambiguity about the surface disposal area contributions to the measured soil radioactivity.

During the 1986 Comprehensive Environmental Assessment and Response Program (CEARP) field survey, the extent of this disposal area (observed as a depression) was determined, as well as the presence of residual metal debris within the depression.

5.6.4 Field Investigation of PRS 10-005

The objective of the RFI at PRS 10-005 was to determine the presence or absence of contaminants at the site. The RFI was conducted in October and November 1994. The area of PRS 10-005 was intended to be characterized using one four-armed sampling array centered on the suspected location of the pit, a shallow, linear surface depression west of the firing sites (Fig. 5.6.4-1). The original dimensions and precise location of the center of the disposal pit were unknown. Because of the large dimensions of the existing depression and the lack of information regarding the location of the pit, a four-armed drilling array centered on the existing depression was deemed impractical. Therefore, the array was replaced with a series of boreholes aligned along the center of the depression. The first borehole (10-1284) was drilled at the western end of the linear depression with the succeeding four boreholes (10-1283 through 10-1280) spaced approximately 15 ft apart and extending downslope in an easterly direction. The boreholes were 50-ft deep. A four-armed array was to be extended in north and south directions if radioactivity was detected by field screening in any of the five boreholes. However, no elevated radioactivity or VOCs were detected in the PRS 10-005 boreholes.

At least four samples were collected from each borehole for a full suite of fixed laboratory analyses. These four samples were collected from 1) the midpoint of the first 10-ft interval, 2) the bottom of the borehole, 3) the interval exhibiting the highest field screening levels for radionuclides and VOCs, and 4) a random core interval retrieved from below 10 ft bgs and selected to target locations immediately underlying previously existing structures, exhibiting a change in color or obvious staining of the core, showing significant changes in lithology, and/or contacting the fill/tuff interface. Samples were submitted for analysis for VOCs, SVOCs, TAL metals, total uranium, and strontium-90. More than fifty percent of the total number of samples sent to the fixed laboratory for analysis were also analyzed for high explosives. All appropriate QC samples, including duplicates, field blanks, and rinsate blanks, were collected during subsurface soil sampling activities. Sampling information is summarized in Table 5.6.4-1.

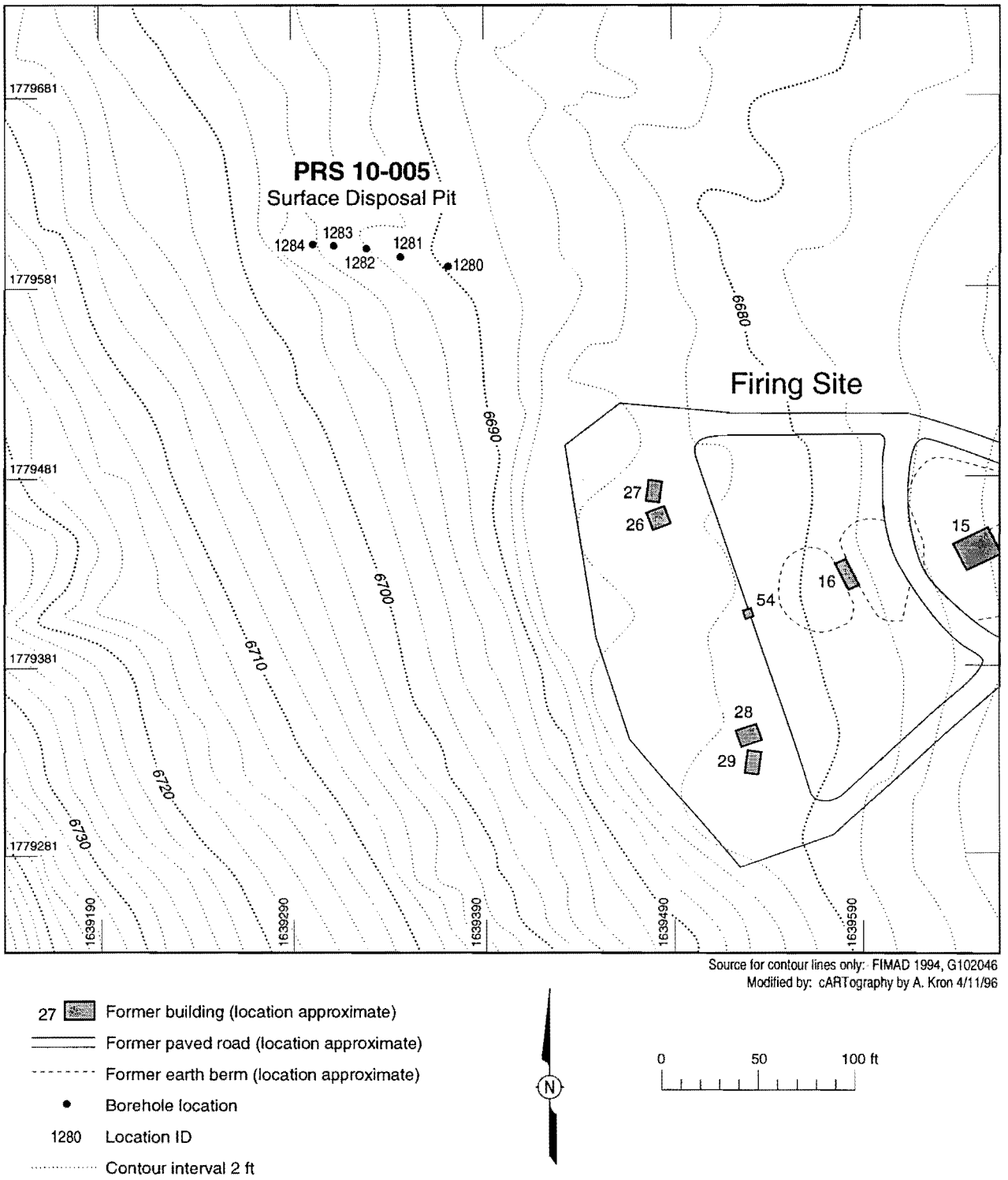


Fig. 5.6.4-1. Locations of PRS 10-005 samples.

TABLE 5.6.4-1

SUMMARY OF SAMPLES COLLECTED AT PRS 10-005

LOCATION ID	SAMPLE ID	DEPTH	MATRIX	ANALYSES PERFORMED[a]					
				HIGH EXPLOSIVES	METALS[b]	RADIONUCLIDES[c]	SVOCs[d]	URANIUM	VOCs[e]
10-1280	AAB9375	22.5-23.5 ft	Alluvium	19547	20091	20086	19547	20086	19547
10-1280	AAB9568	4.3-5 ft	Alluvium	—	20318	20328	20209	20328	20209
10-1280	AAB9571	18-18.8 ft	Alluvium	—	20318	20328	20209	20328	20209
10-1280	AAB9572–Field Blank	NA[f]	Water	—	20318	20328	20209	20328	—
10-1280	AAB9573–Equipment Blank	NA	Water	—	20318	20328	20209	20328	—
10-1280	AAB9576	27.5-28.3 ft	Qbo[g]	—	20318	20328	20209	20328	20209
10-1280	AAB9580	49-50 ft	Qbo	—	20318	20328	20209	20328	20209
10-1281	AAB9556	2.5-3.3 ft	Alluvium	—	20319	20332	20147	20332	20147
10-1281	AAB9558	12.5-13.3 ft	Alluvium	—	20319	20332	20147	20332	20147
10-1281	AAB9563	27.5-28.5 ft	Qbo	—	20319	20332	20147	20332	20147
10-1281	AAB9567	49-50 ft	Qbo	—	20319	20332	20147	20332	20147
10-1282	AAB9544	2.5-3.5 ft	Alluvium	20033	20323	20111	20032	20111	20032
10-1282	AAB9546	12.5-13.5 ft	Alluvium	20033	20323	20111	20032	20111	20032
10-1282	AAB9549	29-30 ft	Alluvium	20033	20323	20111	20032	20111	20032
10-1282	AAB9554	49-50 ft	Qbo	20033	20323	20111	20032	20111	20032
10-1282	AAB9555–Field Duplicate	49-50 ft	Qbo	20033	20323	20111	20032	20111	20032
10-1283	AAB9382	2.5-3.5 ft	Alluvium	19896	20110	20113	19895	20113	19895
10-1283	AAB9384	14-15 ft	Alluvium	19896	20110	20113	19895	20113	19895
10-1283	AAB9539	27.5-28.5 ft	Qbo	19896	20110	20113	19895	20113	19895
10-1283	AAB9543	49-50 ft	Qbo	19896	20110	20113	19895	20113	19895
10-1284	AAB9369	2.5-3.4 ft	Alluvium	19547	20091	20086	19547	20086	19547
10-1284	AAB9380	49-50 ft	Qbo	19631	20092	20087	19630	20087	19630
10-1284	AAB9381	11-12 ft	Alluvium	19631	20092	20087	19630	20087	19630

[a] Listed five-digit number indicates request number under which analysis was performed.
[b] Metals = Target analyte list metals.
[c] Radionuclide results will be discussed in an addendum to this report.
[d] SVOCs = Semivolatile organic compounds.
[e] VOCs = Volatile organic compounds.
[f] NA = Not applicable.
[g] Qbo = The Otowi Member of the Bandelier Tuff.
– = Sample was not analyzed for this suite.

Radioactive and volatile organic field screening data indicated that no radioactivity or volatile organics were detected above background levels in this drilling array. Boreholes were backfilled with drill cuttings and completed with a 2-ft-thick concrete cap.

There was one deviation from the work plan. As described above, the large dimensions of the existing depression and the lack of information regarding the location of the original pit made it impractical to drill a four-armed array centered on the existing depression. A new sampling approach was undertaken as described above.

5.6.5 Background Comparisons for PRS 10-005

One inorganic, barium, had concentrations greater than the background screening values. Statistical comparisons were made between barium PRS data and LANL-wide soil background data. These statistical comparisons are discussed in detail in Appendix D. As shown in Table D-6 and Fig. D-2, the concentrations of barium are not statistically elevated compared to the LANL-wide soil data. Therefore, no inorganics exceed soil background concentrations, and no inorganics are carried forward to the screening assessment for PRS 10-004(b).

5.6.6 Evaluation of Organic Constituents for PRS 10-005

No organics were detected in samples collected from PRS 10-005.

5.6.7 Human Health Assessment for PRS 10-005

5.6.7.1 Screening Assessment for PRS 10-005

No screening assessment was conducted for PRS 10-005 because all chemicals had background data for comparison, and no chemicals were detected at levels above background.

5.6.7.2 Risk Assessment for PRS 10-005

No risk assessment was performed for PRS 10-005 because all chemicals had background data for comparison, and no chemicals were detected at levels above background.

5.6.8 Ecological Assessment for PRSs 10-005

The preliminary ecological screening assessment indicates that this site is located in a floodplain and is potentially within the foraging range of the spotted bat and peregrine falcon. These factors must be taken into consideration should any remedial action be undertaken at this site.

Further ecological risk assessment at this site will be deferred until the site can be assessed as part of the new ecological exposure unit approach that is being developed by LANL in conjunction with EPA Region VI and the New Mexico Environment Department.

5.6.9 Extent of Contamination for PRSs 10-005

There were no chemicals detected at levels greater than background for PRS 10-005.

5.6.10 Conclusions and Recommendations for PRSs 10-005

Based on the results of the Phase I RFI, PRS 10-005 is recommended for removal from the HSWA Module of LANL's RCRA operating permit. This recommendation is based on LANL's No Further Action Criteria Policy, criterion 4, which states that the PRS has been characterized or remediated in accordance with current applicable state or federal regulations, and available data indicate that contaminants of concern are either not present or are present in concentrations that pose an acceptable level of risk. A Class III permit modification will be requested to remove PRS 10-005 from the HSWA Module of LANL's RCRA operating permit (Environmental Restoration Project 1995, 1173).

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APPENDIX A ANALYTICAL DATA

All analytical data, including data from the mobile chemistry analytical laboratory (MCAL) and mobile radiological analytical laboratory (MRAL), are available in the Facility for Information Management, Analysis, and Display (FIMAD) database. If the FIMAD database is not accessible, data will be provided upon request. A hard copy of the data is available from the Records Processing Facility (RPF) under "Analytical Data for the Subsurface Investigation of TA-10."

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APPENDIX B DATA QUALITY EVALUATION TABLE

TABLE B-1

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
17842	AAB2833	SVOCs[a]	Hexachloroethane was a false negative in quality control (QC) sample. Therefore, all data for this analyte are qualified R, rejected. 11 compounds had recoveries between 20 and 50% in QC sample. All associated data are qualified UJ, estimated undetected quantities.
17842	AAB2839	SVOCs	Hexachloroethane was a false negative in QC sample. Therefore, all data for this analyte are qualified R, rejected. 11 compounds had recoveries between 20 and 50% in QC sample. All associated data are qualified UJ, estimated undetected quantities.
17842	AAB2843	SVOCs	Hexachloroethane was a false negative in QC sample. Therefore, all data for this analyte are qualified R, rejected. 11 compounds had recoveries between 20 and 50% in QC sample. All associated data are qualified UJ, estimated undetected quantities.
17842	AAB2844	SVOCs	Hexachloroethane was a false negative in QC sample. Therefore, all data for this analyte are qualified R, rejected. 11 compounds had recoveries between 20 and 50% in QC sample. All associated data are qualified UJ, estimated undetected quantities.
17850	AAB6142	High explosives	7-day holding time grossly exceeded for water samples (by over 2 months). All data are qualified R.
17850	AAB6144	High explosives	7-day holding time grossly exceeded for water samples (by over 2 months). All data are qualified R.
17852	AAB6142	SVOCs	Benzidine is qualified UJ for a low response factor and large percent difference in the continuing calibrations.
17852	AAB6144	SVOCs	Benzidine is qualified UJ for a low response factor and large percent difference in the continuing calibrations.
17854	AAB2861	SVOCs	Di-n-butylphthalate found at same level in sample and in method blank. The estimated quantitation limit (EQL) was raised for this analyte.
17875	AAB2885	SVOCs	Anthracene and 2-methylphenol qualified R for <10% recovery in the QC sample. 5 analytes qualified UJ for recoveries between 10 and 50% in QC sample.
17875	AAB2903	SVOCs	Anthracene and 2-methylphenol qualified R for <10% recovery in the QC sample. 5 analytes qualified UJ for recoveries between 10 and 50% in QC sample.
17875	AAB2904	SVOCs	Anthracene and 2-methylphenol qualified R for <10% recovery in the QC sample. 5 analytes qualified UJ for recoveries between 10 and 50% in QC sample.
17875	AAB2905	SVOCs	Anthracene and 2-methylphenol qualified R for <10% recovery in the QC sample. 5 analytes qualified UJ for recoveries between 10 and 50% in QC sample.
17875	AAB6122	SVOCs	Anthracene and 2-methylphenol qualified R for <10% recovery in the QC sample. 5 analytes qualified UJ for recoveries between 10 and 50% in QC sample.
17918	AAB6124	High explosives	O-nitrotoluene and tetryl had recoveries of <50% in the QC sample and are qualified UJ.
17918	AAB6125	High explosives	O-nitrotoluene and tetryl had recoveries of <50% in the QC sample and are qualified UJ.
17918	AAB6129	High explosives	O-nitrotoluene and tetryl had recoveries of <50% in the QC sample and are qualified UJ.
17918	AAB6139	High explosives	O-nitrotoluene and tetryl had recoveries of <50% in the QC sample and are qualified UJ.
17918	AAB6141	High explosives	O-nitrotoluene and tetryl had recoveries of <50% in the QC sample and are qualified UJ.
17918	AAB6143	High explosives	O-nitrotoluene and tetryl had recoveries of <50% in the QC sample and are qualified UJ.
17994	AAB6180	SVOCs	All surrogates below allowed limits. All data qualified UJ.

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TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
18004	AAB2944	SVOCs	1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 13 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
18004	AAB2946	SVOCs	1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 13 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
18004	AAB2947	SVOCs	1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 13 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
18004	AAB6126	SVOCs	1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 13 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
18004	AAB6151	SVOCs	1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 13 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
18004	AAB6152	SVOCs	1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 13 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
18004	AAB6155	SVOCs	1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 13 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
18004	AAB6157	SVOCs	1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 13 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
18004	AAB6162	SVOCs	1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 13 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
18004	AAB6166	SVOCs	1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 13 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
18004	AAB6168	SVOCs	1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 13 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
18008	AAB6182	High explosives	All data are qualified J or UJ, estimated detected and undetected quantities, for exceeding the recommended holding times for soil samples.
18008	AAB6186	High explosives	All data are qualified J or UJ for exceeding the recommended holding times for soil samples.
18008	AAB6193	High explosives	All data are qualified J or UJ for exceeding the recommended holding times for soil samples.
18008	AAB6194	High explosives	All data are qualified J or UJ for exceeding the recommended holding times for soil samples.
18008	AAB6197	High explosives	All data are qualified J or UJ for exceeding the recommended holding times for soil samples.
18008	AAB6198	High explosives	All data are qualified J or UJ for exceeding the recommended holding times for soil samples.
18008	AAB6205	High explosives	All data are qualified J or UJ for exceeding the recommended holding times for soil samples.
18008	AAB6207	High explosives	All data are qualified R for grossly exceeding the required 7-day holding time for water samples.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
18008	AAB6211	High explosives	All data are qualified J or UJ for exceeding the recommended holding times for soil samples.
18008	AAB6214	High explosives	All data are qualified J or UJ for exceeding the recommended holding times for soil samples.
18010	AAB6126	High explosives	All data are qualified J or UJ for exceeding the recommended holding times for soil samples.
18010	AAB6151	High explosives	All data are qualified J or UJ for exceeding the recommended holding times for soil samples.
18010	AAB6152	High explosives	All data are qualified J or UJ for exceeding the recommended holding times for soil samples.
18010	AAB6155	High explosives	All data are qualified J or UJ for exceeding the recommended holding times for soil samples.
18046	AAB2949	SVOCs	Di-n-butylphthalate found in method blank from lab contamination. All data are valid without qualification.
18046	AAB2958	SVOCs	Di-n-butylphthalate found in method blank from lab contamination. All data are valid without qualification.
18046	AAB2959	SVOCs	Di-n-butylphthalate found in method blank from lab contamination. All data are valid without qualification.
18046	AAB2962	SVOCs	Di-n-butylphthalate found in method blank from lab contamination. All data are valid without qualification.
18046	AAB2979	SVOCs	Di-n-butylphthalate found in method blank from lab contamination. All data are valid without qualification.
18100	AAB2978	SVOCs	All base-neutral associated analytes are qualified UJ for low surrogate recoveries.
18100	AAB6182	SVOCs	All analytes are qualified UJ for low surrogate recoveries (10-20%).
18100	AAB6186	SVOCs	All analytes qualified R because all surrogate recoveries <10%.
18149	AAB3002	SVOCs	First extraction omitted surrogate mix. Second extraction was 4 days beyond hold time. Both found no analytes above EQL. Data are qualified UJ for missed holding time or surrogate omission.
18189	AAB3016	SVOCs	The recovery for benzo-b-fluoranthene was <10% resulting in an R qualification. 10 analytes had recoveries between 10 and 50% and are qualified UJ.
18189	AAB3017	SVOCs	The recovery for benzo-b-fluoranthene was <10% resulting in an R qualification. 10 analytes had recoveries between 10 and 50% and are qualified UJ.
18189	AAB3018	SVOCs	The recovery for benzo-b-fluoranthene was <10% resulting in an R qualification. 10 analytes had recoveries between 10 and 50% and are qualified UJ.
18189	AAB6244	SVOCs	The recovery for benzo-b-fluoranthene was <10% resulting in an R qualification. 10 analytes had recoveries between 10 and 50% and are qualified UJ.
18189	AAB6251	SVOCs	The recovery for benzo-b-fluoranthene was <10% resulting in an R qualification. 10 analytes had recoveries between 10 and 50% and are qualified UJ.
18189	AAB6256	SVOCs	The recovery for benzo-b-fluoranthene was <10% resulting in an R qualification. 10 analytes had recoveries between 10 and 50% and are qualified UJ.
18189	AAB6257	SVOCs	The recovery for benzo-b-fluoranthene was <10% resulting in an R qualification. 10 analytes had recoveries between 10 and 50% and are qualified UJ.
18274	AAB3069	High explosives	All data are qualified UJ for exceeding the recommended holding times for soil samples.
18274	AAB3072	High explosives	All data are qualified UJ for exceeding the recommended holding times for soil samples.
18274	AAB3073	High explosives	All data are qualified UJ for exceeding the recommended holding times for soil samples.
18285	AAB3046	High explosives	All data are qualified UJ for exceeding the recommended holding times for soil samples.
18285	AAB3047	High explosives	All data are qualified UJ for exceeding the recommended holding times for soil samples.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
18285	AAB3057	High explosives	All data are qualified UJ for exceeding the recommended holding times for soil samples.
18285	AAB3059	High explosives	All data are qualified UJ for exceeding the recommended holding times for soil samples.
18285	AAB3060	High explosives	All data are qualified UJ for exceeding the recommended holding times for soil samples.
18285	AAB6292	High explosives	All data are qualified UJ for exceeding the recommended holding times for soil samples.
18305	AAB3062	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
18305	AAB6304	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
18305	AAB6306	SVOCs	The recoveries for1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
18307	AAB3062	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
18307	AAB6304	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
18307	AAB6306	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
18348	AAB3074	SVOCs	11 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
18348	AAB3080	SVOCs	11 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
18348	AAB3085	SVOCs	11 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
18348	AAB3086	SVOCs	11 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
18348	AAB6308	SVOCs	11 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
18362	AAB6416	SVOCs	All surrogate recoveries <10%. All data qualified R.
18397	AAB6421	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected.
18397	AAB6422	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected.
18397	AAB6423	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected.
18397	AAB6428	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected.
18397	AAB6432	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected.
18397	AAB6433	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected.
18397	AAB6434	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected.
18397	AAB6439	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
18397	AAB6444	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected.
18397	AAB6445	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected.
18397	AAB6446	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected.
18398	AAB6423	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
18398	AAB6428	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
18398	AAB6432	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
18398	AAB6433	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
18421	AAB6282	TAL metals[b]	Mercury qualified R for grossly exceeding required water sample holding time. Arsenic, barium, calcium, chromium, cobalt, copper, iron, lead, manganese, nickel, silver, sodium, vanadium, and zinc are qualified J or UJ for low matrix spike recoveries.
18421	AAB6283	TAL metals	Mercury qualified R for grossly exceeding required water sample holding time. Arsenic, barium, calcium, chromium, cobalt, copper, iron, lead, manganese, nickel, silver, sodium, vanadium, and zinc are qualified J or UJ for low matrix spike recoveries.
18430	AAB3062	TAL metals	Aluminum, thallium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18430	AAB6304	TAL metals	Aluminum, thallium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18430	AAB6306	TAL metals	Aluminum, thallium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18443	AAB6321	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected.
18443	AAB6322	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected.
18443	AAB6330	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected.
18443	AAB6335	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected.
18443	AAB6336	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected.
18451	AAB6321	High explosives	O-nitrotoluene qualified UJ for low recovery in the QC sample.
18451	AAB6322	High explosives	O-nitrotoluene qualified UJ for low recovery in the QC sample.
18451	AAB6330	High explosives	O-nitrotoluene qualified UJ for low recovery in the QC sample.
18451	AAB6335	High explosives	O-nitrotoluene qualified UJ for low recovery in the QC sample.
18451	AAB6336	High explosives	O-nitrotoluene qualified UJ for low recovery in the QC sample.
18539	AAB3019	High explosives	All data are qualified UJ for exceeding the recommended holding times for soil samples.
18539	AAB3020	High explosives	All data are qualified UJ for exceeding the recommended holding times for soil samples.
18539	AAB3030	High explosives	All data are qualified UJ for exceeding the recommended holding times for soil samples.
18539	AAB3031	High explosives	All data are qualified UJ for exceeding the recommended holding times for soil samples.
18539	AAB3032	High explosives	All data are qualified UJ for exceeding the recommended holding times for soil samples.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
18539	AAB3033	High explosives	All data are qualified UJ for exceeding the recommended holding times for soil samples.
18544	AAB2944	TAL metals	Aluminum, chromium, iron, magnesium, nickel, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample.
18544	AAB2946	TAL metals	Aluminum, chromium, iron, magnesium, nickel, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample.
18544	AAB2947	TAL metals	Aluminum, chromium, iron, magnesium, nickel, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample.
18544	AAB6126	TAL metals	Aluminum, chromium, iron, magnesium, nickel, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample.
18544	AAB6151	TAL metals	Aluminum, chromium, iron, magnesium, nickel, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample.
18544	AAB6152	TAL metals	Aluminum, chromium, iron, magnesium, nickel, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample.
18544	AAB6155	TAL metals	Aluminum, chromium, iron, magnesium, nickel, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample.
18544	AAB6157	TAL metals	Aluminum, chromium, iron, magnesium, nickel, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample.
18544	AAB6162	TAL metals	Aluminum, chromium, iron, magnesium, nickel, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample.
18544	AAB6166	TAL metals	Aluminum, chromium, iron, magnesium, nickel, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample.
18544	AAB6168	TAL metals	Aluminum, chromium, iron, magnesium, nickel, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample.
18546	AAB6354	SVOCs	Bis(2-ethylhexyl)phthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 6 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18546	AAB6355	SVOCs	Bis(2-ethylhexyl)phthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 6 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18546	AAB6493	SVOCs	Bis(2-ethylhexyl)phthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 6 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18546	AAB6494	SVOCs	Bis(2-ethylhexyl)phthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 6 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18557	AAB6473	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
18557	AAB6478	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
18557	AAB6483	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
18557	AAB6484	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
18568	AAB6363	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
18568	AAB6364	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
18568	AAB6371	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
18568	AAB6376	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
18568	AAB6378	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
18581	AAB3016	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample. All arsenic detects qualified J for high recovery (130%) in the QC sample.
18581	AAB3017	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample. All arsenic detects qualified J for high recovery (130%) in the QC sample.
18581	AAB3018	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample. All arsenic detects qualified J for high recovery (130%) in the QC sample.
18581	AAB6244	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample. All arsenic detects qualified J for high recovery (130%) in the QC sample.
18581	AAB6251	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample. All arsenic detects qualified J for high recovery (130%) in the QC sample.
18581	AAB6256	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample. All arsenic detects qualified J for high recovery (130%) in the QC sample.
18581	AAB6257	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample. All arsenic detects qualified J for high recovery (130%) in the QC sample.
18583	AAB3074	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample. All arsenic detects qualified J for high recovery (130%) in the QC sample.
18583	AAB3080	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample. All arsenic detects qualified J for high recovery (130%) in the QC sample.
18583	AAB3085	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample. All arsenic detects qualified J for high recovery (130%) in the QC sample.
18583	AAB3086	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample. All arsenic detects qualified J for high recovery (130%) in the QC sample.
18583	AAB6308	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample. All arsenic detects qualified J for high recovery (130%) in the QC sample.
18584	AAB6421	TAL metals	Aluminum, chromium, iron, magnesium, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample. All sodium detects qualified J for high recovery (132%) in the QC sample.
18584	AAB6422	TAL metals	Aluminum, chromium, iron, magnesium, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample. All sodium detects qualified J for high recovery (132%) in the QC sample.
18584	AAB6423	TAL metals	Aluminum, chromium, iron, magnesium, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample. All sodium detects qualified J for high recovery (132%) in the QC sample.
18584	AAB6428	TAL metals	Aluminum, chromium, iron, magnesium, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample. All sodium detects qualified J for high recovery (132%) in the QC sample.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
18584	AAB6432	TAL metals	Aluminum, chromium, iron, magnesium, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample. All sodium detects qualified J for high recovery (132%) in the QC sample.
18584	AAB6433	TAL metals	Aluminum, chromium, iron, magnesium, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample. All sodium detects qualified J for high recovery (132%) in the QC sample.
18584	AAB6434	TAL metals	Aluminum, chromium, iron, magnesium, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample. All sodium detects qualified J for high recovery (132%) in the QC sample.
18584	AAB6439	TAL metals	Aluminum, chromium, iron, magnesium, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample. All sodium detects qualified J for high recovery (132%) in the QC sample.
18584	AAB6444	TAL metals	Aluminum, chromium, iron, magnesium, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample. All sodium detects qualified J for high recovery (132%) in the QC sample.
18584	AAB6445	TAL metals	Aluminum, chromium, iron, magnesium, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample. All sodium detects qualified J for high recovery (132%) in the QC sample.
18584	AAB6446	TAL metals	Aluminum, chromium, iron, magnesium, and vanadium qualified J or UJ for low recoveries (40-75%) in the QC sample. All sodium detects qualified J for high recovery (132%) in the QC sample.
18585	AAB6338	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample.
18585	AAB6343	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample.
18585	AAB6348	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample.
18585	AAB6349	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample.
18585	AAB6461	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample.
18585	AAB6465	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample.
18585	AAB6471	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample.
18585	AAB6472	TAL metals	Aluminum, chromium, iron, magnesium, lead, thallium, and vanadium qualified J or UJ for low recoveries (30-75%) in the QC sample.
18609	AAB3004	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples. Also had low surrogate recovery (43%).
18609	AAB3005	High explosives	All data qualified J or UJ for exceeding the recommended holding times for soil samples.
18621	AAB6379	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 9 analytes had recoveries between 10 and 50% and are qualified UJ.
18621	AAB6384	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 9 analytes had recoveries between 10 and 50% and are qualified UJ.
18621	AAB6390	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 9 analytes had recoveries between 10 and 50% and are qualified UJ.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
18621	AAB6501	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 9 analytes had recoveries between 10 and 50% and are qualified UJ.
18621	AAB6507	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 9 analytes had recoveries between 10 and 50% and are qualified UJ.
18621	AAB6510	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 9 analytes had recoveries between 10 and 50% and are qualified UJ.
18621	AAB6511	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 9 analytes had recoveries between 10 and 50% and are qualified UJ.
18621	AAB6512	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 9 analytes had recoveries between 10 and 50% and are qualified UJ.
18630	AAB3016	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
18630	AAB3017	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
18630	AAB3018	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
18660	AAB6392	SVOCs	The recoveries for 1,2-dichlorobenzene and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 6 analytes had recoveries between 10 and 50% and are qualified UJ.
18660	AAB6395	SVOCs	The recoveries for 1,2-dichlorobenzene and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 6 analytes had recoveries between 10 and 50% and are qualified UJ.
18660	AAB6403	SVOCs	The recoveries for 1,2-dichlorobenzene and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 6 analytes had recoveries between 10 and 50% and are qualified UJ.
18660	AAB6404	SVOCs	The recoveries for 1,2-dichlorobenzene and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 6 analytes had recoveries between 10 and 50% and are qualified UJ.
18660	AAB6520	SVOCs	The recoveries for 1,2-dichlorobenzene and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 6 analytes had recoveries between 10 and 50% and are qualified UJ.
18660	AAB6524	SVOCs	The recoveries for 1,2-dichlorobenzene and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 6 analytes had recoveries between 10 and 50% and are qualified UJ.
18660	AAB6525	SVOCs	The recoveries for 1,2-dichlorobenzene and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 6 analytes had recoveries between 10 and 50% and are qualified UJ.
18668	AAB6405	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 15 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18668	AAB6526	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 15 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18668	AAB6527	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 15 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
18668	AAB6532	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 15 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18668	AAB6535	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 15 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18668	AAB6536	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 15 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18709	AAB2944	Radionuclides[c]	All uranium qualified J for low recovery in QC sample.
18709	AAB2946	Radionuclides[c]	All uranium qualified J for low recovery in QC sample.
18709	AAB2947	Radionuclides[c]	All uranium qualified J for low recovery in QC sample.
18709	AAB6126	Radionuclides[c]	All uranium qualified J for low recovery in QC sample.
18709	AAB6151	Radionuclides[c]	All uranium qualified J for low recovery in QC sample.
18709	AAB6152	Radionuclides[c]	All uranium qualified J for low recovery in QC sample.
18709	AAB6155	Radionuclides[c]	All uranium qualified J for low recovery in QC sample.
18709	AAB6157	Radionuclides[c]	All uranium qualified J for low recovery in QC sample.
18709	AAB6162	Radionuclides[c]	All uranium qualified J for low recovery in QC sample.
18709	AAB6166	Radionuclides[c]	All uranium qualified J for low recovery in QC sample.
18709	AAB6168	Radionuclides[c]	All uranium qualified J for low recovery in QC sample.
18710	AAB3004	Radionuclides[c]	All uranium qualified J for low recovery in QC sample.
18710	AAB3005	Radionuclides[c]	All uranium qualified J for low recovery in QC sample.
18712	AAB6537	SVOCs	All acid associated compounds qualified R for surrogate recoveries <10%.
18712	AAB6538	SVOCs	Phenol qualified UJ for low recovery in QC water sample.
18712	AAB6539	SVOCs	Phenol qualified UJ for low recovery in QC water sample.
18713	AAB3016	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18713	AAB3017	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18713	AAB3018	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18713	AAB6244	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18713	AAB6251	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18713	AAB6256	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18713	AAB6257	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18716	AAB3019	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18716	AAB3020	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18716	AAB3030	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18716	AAB3031	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18716	AAB3032	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18716	AAB3033	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18725	AAB3062	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18725	AAB6304	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
18725	AAB6306	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18727	AAB3069	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18727	AAB3072	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18727	AAB3073	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18729	AAB3074	Radionuclides[c]	Uranium qualified R for recovery of <1% in the QC sample. Strontium-90 qualified J for high recovery in the QC sample.
18729	AAB3080	Radionuclides[c]	Uranium qualified R for recovery of <1% in the QC sample. Strontium-90 qualified J for high recovery in the QC sample.
18729	AAB3085	Radionuclides[c]	Uranium qualified R for recovery of <1% in the QC sample. Strontium-90 qualified J for high recovery in the QC sample.
18729	AAB3086	Radionuclides[c]	Uranium qualified R for recovery of <1% in the QC sample. Strontium-90 qualified J for high recovery in the QC sample.
18729	AAB6308	Radionuclides[c]	Uranium qualified R for recovery of <1% in the QC sample. Strontium-90 qualified J for high recovery in the QC sample.
18731	AAB6421	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18731	AAB6422	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18731	AAB6423	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18731	AAB6428	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18731	AAB6432	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18731	AAB6433	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18731	AAB6434	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18731	AAB6439	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18731	AAB6444	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18731	AAB6445	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18731	AAB6446	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18741	AAB6321	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18741	AAB6322	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18741	AAB6330	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18741	AAB6335	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18741	AAB6336	Radionuclides[c]	Uranium qualified J for low recovery in QC sample. Strontium-90 qualified J for high recovery in QC sample.
18743	AAB6338	Radionuclides[d]	All uranium qualified J for low recovery in QC sample.
18743	AAB6343	Radionuclides[d]	All uranium qualified J for low recovery in QC sample.
18743	AAB6348	Radionuclides[d]	All uranium qualified J for low recovery in QC sample.
18743	AAB6349	Radionuclides[d]	All uranium qualified J for low recovery in QC sample.
18743	AAB6461	Radionuclides[d]	All uranium qualified J for low recovery in QC sample.
18743	AAB6465	Radionuclides[d]	All uranium qualified J for low recovery in QC sample.
18743	AAB6471	Radionuclides[d]	All uranium qualified J for low recovery in QC sample.
18743	AAB6472	Radionuclides[d]	All uranium qualified J for low recovery in QC sample.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
18768	AAB6552	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 10 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ. 3 analytes qualified R for recoveries <10%.
18768	AAB6558	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 10 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ. 3 analytes qualified R for recoveries <10%.
18768	AAB6562	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 10 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ. 3 analytes qualified R for recoveries <10%.
18768	AAB6563	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 10 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ. 3 analytes qualified R for recoveries <10%.
18768	AAB6565	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 10 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ. 3 analytes qualified R for recoveries <10%.
18768	AAB6566	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 10 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ. 3 analytes qualified R for recoveries <10%.
18768	AAB8647	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 10 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ. 3 analytes qualified R for recoveries <10%.
18768	AAB8651	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 10 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ. 3 analytes qualified R for recoveries <10%.
18768	AAB8652	SVOCs	Di-n-butylphthalate was found in the method blank from lab contamination. EQLs were raised for samples in which it was detected. 10 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ. 3 analytes qualified R for recoveries <10%.
18771	AAB6552	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
18771	AAB6558	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
18771	AAB6562	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
18771	AAB6563	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
18780	AAB6581	SVOCs	All analytes qualified UJ for 4 low surrogate recoveries.
18793	AAB6587	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 11 analytes had recoveries between 10 and 50% and are qualified UJ.
18793	AAB6588	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 11 analytes had recoveries between 10 and 50% and are qualified UJ.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
18793	AAB6589	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 11 analytes had recoveries between 10 and 50% and are qualified UJ.
18793	AAB6594	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 11 analytes had recoveries between 10 and 50% and are qualified UJ.
18793	AAB8653	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 11 analytes had recoveries between 10 and 50% and are qualified UJ.
18793	AAB8661	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 11 analytes had recoveries between 10 and 50% and are qualified UJ.
18793	AAB8665	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 11 analytes had recoveries between 10 and 50% and are qualified UJ.
18793	AAB8666	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 11 analytes had recoveries between 10 and 50% and are qualified UJ.
18849	AAB2963	TAL metals	Aluminum, chromium, and mercury qualified J or UJ for low recoveries in the QC sample.
18849	AAB2964	TAL metals	Aluminum, chromium, and mercury qualified J or UJ for low recoveries in the QC sample.
18849	AAB2977	TAL metals	Aluminum, chromium, and mercury qualified J or UJ for low recoveries in the QC sample.
18849	AAB2978	TAL metals	Aluminum, chromium, and mercury qualified J or UJ for low recoveries in the QC sample.
18849	AAB6182	TAL metals	Aluminum, chromium, and mercury qualified J or UJ for low recoveries in the QC sample.
18849	AAB6186	TAL metals	Aluminum, chromium, and mercury qualified J or UJ for low recoveries in the QC sample.
18849	AAB6193	TAL metals	Aluminum, chromium, and mercury qualified J or UJ for low recoveries in the QC sample.
18849	AAB6194	TAL metals	Aluminum, chromium, and mercury qualified J or UJ for low recoveries in the QC sample.
18849	AAB6197	TAL metals	Aluminum, chromium, and mercury qualified J or UJ for low recoveries in the QC sample.
18849	AAB6198	TAL metals	Aluminum, chromium, and mercury qualified J or UJ for low recoveries in the QC sample.
18849	AAB6205	TAL metals	Aluminum, chromium, and mercury qualified J or UJ for low recoveries in the QC sample.
18849	AAB6206	TAL metals	Aluminum, chromium, and mercury qualified J or UJ for low recoveries in the QC sample.
18849	AAB6207	TAL metals	Aluminum, chromium, and mercury qualified J or UJ for low recoveries in the QC sample.
18849	AAB6211	TAL metals	Aluminum, chromium, and mercury qualified J or UJ for low recoveries in the QC sample.
18849	AAB6214	TAL metals	Aluminum, chromium, and mercury qualified J or UJ for low recoveries in the QC sample.
18852	AAB2988	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18852	AAB2989	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18852	AAB2990	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.

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TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
18852	AAB2991	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18852	AAB3001	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18852	AAB3002	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18852	AAB3003	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18852	AAB6228	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18852	AAB6231	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18852	AAB6232	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18852	AAB6241	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18852	AAB6243	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6350	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6353	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6354	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6355	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6360	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6362	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6473	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6478	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6483	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6484	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6485	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6486	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6492	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6493	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6494	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6498	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18853	AAB6500	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18862	AAB3087	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18862	AAB6313	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18862	AAB6317	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18862	AAB6320	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
18862	AAB6414	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18862	AAB6415	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18862	AAB6416	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18862	AAB6420	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18863	AAB3019	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18863	AAB3020	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18863	AAB3030	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18863	AAB3031	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18863	AAB3032	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18863	AAB3033	TAL metals	Aluminum, chromium, iron, magnesium, lead, and vanadium qualified J or UJ for low recoveries in the QC sample.
18867	AAB6321	TAL metals	Silver, aluminum, cadmium, chromium, iron, potassium, magnesium, nickel, antimony, and vanadium qualified J or UJ for low recoveries in QC sample or matrix spikes. Manganese detects qualified J for high recovery in matrix spikes. Arsenic qualified J for low post-digestion recovery.
18867	AAB6322	TAL metals	Aluminum, chromium, iron, potassium, magnesium, nickel, and vanadium qualified J or UJ for low recoveries in QC sample. Silver, cadmium, and antimony qualified J or UJ for low recoveries in matrix spikes. Manganese detects qualified J for high matrix spike recoveries.
18867	AAB6330	TAL metals	Aluminum, chromium, iron, potassium, magnesium, nickel, and vanadium qualified J or UJ for low recoveries in QC sample. Silver, cadmium, and antimony qualified J or UJ for low recoveries in matrix spikes. Manganese detects qualified J for high matrix spike recoveries.
18867	AAB6335	TAL metals	Aluminum, chromium, iron, potassium, magnesium, nickel, and vanadium qualified J or UJ for low recoveries in QC sample. Silver, cadmium, and antimony qualified J or UJ for low recoveries in matrix spikes. Manganese detects qualified J for high matrix spike recoveries.
18867	AAB6336	TAL metals	Silver, aluminum, cadmium, chromium, iron, potassium, magnesium, nickel, antimony, and vanadium qualified J or UJ for low recoveries in QC sample or matrix spikes. Manganese detects qualified J for high recovery in matrix spikes. Selenium qualified J for low post-digestion recovery.
18869	AAB6363	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18869	AAB6364	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18869	AAB6371	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18869	AAB6376	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18869	AAB6378	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18871	AAB6454	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18871	AAB6455	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18871	AAB6459	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
18871	AAB6460	TAL metals	Aluminum, chromium, magnesium, and vanadium qualified J or UJ for low recoveries in the QC sample.
18898	AAB2963	Radionuclides[e]	Uranium and strontium-90 qualified J for low recovery in QC and matrix spike samples, respectively.
18898	AAB2964	Radionuclides[e]	Uranium and strontium-90 qualified J for low recovery in QC and matrix spike samples, respectively.
18898	AAB2977	Radionuclides[e]	Uranium and strontium-90 qualified J for low recovery in QC and matrix spike samples, respectively.
18898	AAB2978	Radionuclides[e]	Uranium and strontium-90 qualified J for low recovery in QC and matrix spike samples, respectively.
18898	AAB6182	Radionuclides[e]	Uranium and strontium-90 qualified J for low recovery in QC and matrix spike samples, respectively.
18898	AAB6186	Radionuclides[e]	Uranium and strontium-90 qualified J for low recovery in QC and matrix spike samples, respectively.
18898	AAB6193	Radionuclides[e]	Uranium and strontium-90 qualified J for low recovery in QC and matrix spike samples, respectively.
18898	AAB6194	Radionuclides[e]	Uranium and strontium-90 qualified J for low recovery in QC and matrix spike samples, respectively.
18898	AAB6197	Radionuclides[e]	Uranium and strontium-90 qualified J for low recovery in QC and matrix spike samples, respectively.
18898	AAB6198	Radionuclides[e]	Uranium and strontium-90 qualified J for low recovery in QC and matrix spike samples, respectively.
18898	AAB6205	Radionuclides[e]	Uranium and strontium-90 qualified J for low recovery in QC and matrix spike samples, respectively.
18898	AAB6206	Radionuclides[e]	Uranium and strontium-90 qualified J for low recovery in QC and matrix spike samples, respectively.
18898	AAB6207	Radionuclides[e]	Uranium and strontium-90 qualified J for low recovery in QC and matrix spike samples, respectively.
18898	AAB6211	Radionuclides[e]	Uranium and strontium-90 qualified J for low recovery in QC and matrix spike samples, respectively.
18898	AAB6214	Radionuclides[e]	Uranium and strontium-90 qualified J for low recovery in QC and matrix spike samples, respectively.
18917	AAB8680	SVOCs	11 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18917	AAB8685	SVOCs	11 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18917	AAB8686	SVOCs	11 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18917	AAB8687	SVOCs	11 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18917	AAB8688	SVOCs	11 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18932	AAB2988	Radionuclides[c]	Uranium qualified J for low recovery in QC sample.
18932	AAB2989	Radionuclides[c]	Uranium qualified J for low recovery in QC sample.
18932	AAB2990	Radionuclides[c]	Uranium qualified J for low recovery in QC sample.
18932	AAB2991	Radionuclides[c]	Uranium qualified J for low recovery in QC sample.
18932	AAB3001	Radionuclides[c]	Uranium qualified J for low recovery in QC sample.
18932	AAB3002	Radionuclides[c]	Uranium qualified J for low recovery in QC sample.
18932	AAB3003	Radionuclides[c]	Uranium qualified J for low recovery in QC sample.
18932	AAB6228	Radionuclides[c]	Uranium qualified J for low recovery in QC sample.
18932	AAB6231	Radionuclides[c]	Uranium qualified J for low recovery in QC sample.
18932	AAB6232	Radionuclides[c]	Uranium qualified J for low recovery in QC sample.
18932	AAB6241	Radionuclides[c]	Uranium qualified J for low recovery in QC sample.
18932	AAB6243	Radionuclides[c]	Uranium qualified J for low recovery in QC sample.
18993	AAB8691	SVOCs	10 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18993	AAB8697	SVOCs	10 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18993	AAB8719	SVOCs	10 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
18993	AAB8722	SVOCs	10 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18993	AAB8727	SVOCs	10 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
18993	AAB8728	SVOCs	10 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
19011	AAB6584	SVOCs	Extraction holding times exceeded, so all data qualified UJ. Bis(2-ethylhexyl)phthalate found in method blanks. EQLs raised appropriately.
19011	AAB6584	SVOCs	Extraction holding times exceeded, so all data qualified UJ. Bis(2-ethylhexyl)phthalate found in method blanks. EQLs raised appropriately.
19012	AAB8691	High explosives	Nitrobenzene, RDX[f], and 2,4,6-trinitrotoluene had recoveries between 10 and 50% in the QC sample. However, all data are qualified J or UJ for exceeding the recommended holding times for soil samples.
19012	AAB8697	High explosives	Nitrobenzene, RDX, and 2,4,6-trinitrotoluene had recoveries between 10 and 50% in the QC sample. However, all data are qualified J or UJ for exceeding the recommended holding times for soil samples.
19012	AAB8719	High explosives	Nitrobenzene, RDX, and 2,4,6-trinitrotoluene had recoveries between 10 and 50% in the QC sample. However, all data are qualified J or UJ for exceeding the recommended holding times for soil samples.
19012	AAB8722	High explosives	Nitrobenzene, RDX, and 2,4,6-trinitrotoluene had recoveries between 10 and 50% in the QC sample. However, all data are qualified J or UJ for exceeding the recommended holding times for soil samples.
19012	AAB8727	High explosives	Nitrobenzene, RDX, and 2,4,6-trinitrotoluene had recoveries between 10 and 50% in the QC sample. However, all data are qualified J or UJ for exceeding the recommended holding times for soil samples.
19012	AAB8728	High explosives	Nitrobenzene, RDX, and 2,4,6-trinitrotoluene had recoveries between 10 and 50% in the QC sample. However, all data are qualified J or UJ for exceeding the recommended holding times for soil samples.
19015	AAB6600	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19101	AAB3046	Radionuclides[c]	Strontium-90 qualified R for recovery <10% in the QC sample. Uranium qualified J for low recovery in the QC sample.
19101	AAB3047	Radionuclides[c]	Strontium-90 qualified R for recovery <10% in the QC sample. Uranium qualified J for low recovery in the QC sample.
19101	AAB3057	Radionuclides[c]	Strontium-90 qualified R for recovery <10% in the QC sample. Uranium qualified J for low recovery in the QC sample.
19101	AAB3059	Radionuclides[c]	Strontium-90 qualified R for recovery <10% in the QC sample. Uranium qualified J for low recovery in the QC sample.
19101	AAB3060	Radionuclides[c]	Strontium-90 qualified R for recovery <10% in the QC sample. Uranium qualified J for low recovery in the QC sample.
19101	AAB6292	Radionuclides[c]	Strontium-90 qualified R for recovery <10% in the QC sample. Uranium qualified J for low recovery in the QC sample.
19102	AAB6454	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19102	AAB6455	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19102	AAB6459	Radionuclides[c]	Strontium-90 qualified R for recovery <10% in the QC sample. Uranium qualified J for low recovery in the QC sample.
19102	AAB6460	Radionuclides[c]	Strontium-90 qualified R for recovery <10% in the QC sample.
19104	AAB3087	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
19104	AAB6313	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
19104	AAB6317	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
19104	AAB6320	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19104	AAB6414	Radionuclides[C]	Strontium-90 qualified J for low recovery in the QC sample.
19104	AAB6415	Radionuclides[C]	Strontium-90 qualified J for low recovery in the QC sample.
19104	AAB6416	Radionuclides[C]	Strontium-90 qualified J for low recovery in the QC sample.
19104	AAB6420	Radionuclides[C]	Strontium-90 qualified J for low recovery in the QC sample.
19106	AAB6350	Radionuclides[C]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19106	AAB6353	Radionuclides[C]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19106	AAB6354	Radionuclides[C]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19106	AAB6355	Radionuclides[C]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19106	AAB6360	Radionuclides[C]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19106	AAB6362	Radionuclides[C]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19106	AAB6473	Radionuclides[C]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19106	AAB6478	Radionuclides[C]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19106	AAB6483	Radionuclides[C]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19106	AAB6484	Radionuclides[C]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19106	AAB6485	Radionuclides[C]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19106	AAB6492	Radionuclides[C]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19106	AAB6493	Radionuclides[C]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19106	AAB6494	Radionuclides[C]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19106	AAB6498	Radionuclides[C]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19106	AAB6500	Radionuclides[C]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
19107	AAB6603	SVOCs	The recovery for benzo[b]fluoranthene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.
19107	AAB6604	SVOCs	The recovery for benzo[b]fluoranthene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.
19107	AAB6610	SVOCs	The recovery for benzo[b]fluoranthene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.
19107	AAB6612	SVOCs	The recovery for benzo[b]fluoranthene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.
19107	AAB6614	SVOCs	The recovery for benzo[b]fluoranthene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.
19107	AAB9211	SVOCs	The recovery for benzo[b]fluoranthene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.
19107	AAB9216	SVOCs	The recovery for benzo[b]fluoranthene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.
19107	AAB9222	SVOCs	The recovery for benzo[b]fluoranthene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19107	AAB9223	SVOCs	The recovery for benzo[b]fluoranthene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.
19107	AAB9224	SVOCs	The recovery for benzo[b]fluoranthene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.
19107	AAB9227	SVOCs	The recovery for benzo[b]fluoranthene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.
19107	AAB9231	SVOCs	The recovery for benzo[b]fluoranthene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.
19107	AAB9234	SVOCs	The recovery for benzo[b]fluoranthene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.
19108	AAB6603	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
19108	AAB9211	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
19108	AAB9216	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
19108	AAB9222	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
19108	AAB9223	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
19114	AAB2949	TAL metals	Aluminum, chromium, iron, and zinc qualified J for widely divergent values in the duplicate sample. Silver and antimony qualified J or UJ for low recoveries in the QC or matrix spike sample. Arsenic and mercury detects qualified J for high recoveries in the QC sample.
19114	AAB2958	TAL metals	Aluminum, chromium, iron, and zinc qualified J for widely divergent values in the duplicate sample. Silver and antimony qualified J or UJ for low recoveries in the QC or matrix spike sample. Arsenic and mercury detects qualified J for high recoveries in the QC sample.
19114	AAB2959	TAL metals	Aluminum, chromium, iron, and zinc qualified J for widely divergent values in the duplicate sample. Silver and antimony qualified J or UJ for low recoveries in the QC or matrix spike sample. Arsenic and mercury detects qualified J for high recoveries in the QC sample.
19114	AAB2962	TAL metals	Aluminum, chromium, iron, and zinc qualified J for widely divergent values in the duplicate sample. Silver and antimony qualified J or UJ for low recoveries in the QC or matrix spike sample. Arsenic and mercury detects qualified J for high recoveries in the QC sample.
19114	AAB2979	TAL metals	Aluminum, chromium, iron, and zinc qualified J for widely divergent values in the duplicate sample. Silver and antimony qualified J or UJ for low recoveries in the QC or matrix spike sample. Arsenic and mercury detects qualified J for high recoveries in the QC sample.
19144	AAB6615	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19144	AAB6617	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19144	AAB6618	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19144	AAB6623	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19144	AAB8641	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19199	AAB9422	SVOCs	14 analytes had recoveries between 10 and 50% and are qualified UJ.
19199	AAB9424	SVOCs	14 analytes had recoveries between 10 and 50% and are qualified UJ.
19199	AAB9427	SVOCs	14 analytes had recoveries between 10 and 50% and are qualified UJ.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19249	AAB9235	SVOCs	12 analytes had recoveries between 10 and 50% and are qualified UJ.
19249	AAB9235	VOCs[9]	4-methyl-2-pentanone qualified R for false negative in QC sample.
19249	AAB9236	SVOCs	12 analytes had recoveries between 10 and 50% and are qualified UJ.
19249	AAB9236	VOCs	4-methyl-2-pentanone qualified R for false negative in QC sample.
19249	AAB9242	SVOCs	12 analytes had recoveries between 10 and 50% and are qualified UJ.
19249	AAB9242	VOCs	4-methyl-2-pentanone qualified R for false negative in QC sample.
19249	AAB9246	SVOCs	12 analytes had recoveries between 10 and 50% and are qualified UJ.
19249	AAB9246	VOCs	4-methyl-2-pentanone qualified R for false negative in QC sample.
19249	AAB9247	SVOCs	12 analytes had recoveries between 10 and 50% and are qualified UJ.
19249	AAB9247	VOC	4-methyl-2-pentanone qualified R for false negative in QC sample.
19249	AAB9429	SVOCs	12 analytes had recoveries between 10 and 50% and are qualified UJ.
19249	AAB9429	VOCs	4-methyl-2-pentanone qualified R for false negative in QC sample.
19249	AAB9433	SVOCs	12 analytes had recoveries between 10 and 50% and are qualified UJ.
19249	AAB9433	VOCs	4-methyl-2-pentanone qualified R for false negative in QC sample.
19251	AAB9235	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19251	AAB9236	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19251	AAB9242	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19251	AAB9246	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19251	AAB9247	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19260	AAB9248	SVOCs	16 analytes had recoveries between 10 and 50% and are qualified UJ.
19260	AAB9248	VOCs	Methylene chloride and acetone detected in the method blank due to laboratory contamination. EQLs raised appropriately. All data are valid.
19260	AAB9251	SVOCs	16 analytes had recoveries between 10 and 50% and are qualified UJ.
19260	AAB9251	VOCs	Methylene chloride and acetone detected in the method blank due to laboratory contamination. EQLs raised appropriately. All data are valid.
19260	AAB9253	SVOCs	16 analytes had recoveries between 10 and 50% and are qualified UJ.
19260	AAB9253	VOCs	Methylene chloride and acetone detected in the method blank due to laboratory contamination. EQLs raised appropriately. All data are valid.
19260	AAB9254	SVOCs	4 analytes had recoveries between 10 and 50% in the QC water sample and are qualified UJ.
19260	AAB9255	SVOCs	4 analytes had recoveries between 10 and 50% in the QC water sample and are qualified UJ.
19260	AAB9256	SVOCs	16 analytes had recoveries between 10 and 50% and are qualified UJ.
19260	AAB9256	VOCs	Methylene chloride and acetone detected in the method blank due to laboratory contamination. EQLs raised appropriately. All data are valid.
19260	AAB9438	SVOCs	16 analytes had recoveries between 10 and 50% and are qualified UJ.
19260	AAB9438	VOCs	Methylene chloride and acetone detected in the method blank due to laboratory contamination. EQLs raised appropriately. All data are valid.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19260	AAB9439	SVOCs	16 analytes had recoveries between 10 and 50% and are qualified UJ.
19260	AAB9439	VOCs	Methylene chloride and acetone detected in the method blank due to laboratory contamination. EQLs raised appropriately. All data are valid.
19260	AAB9440	SVOCs	4 analytes had recoveries between 10 and 50% in the QC water sample and are qualified UJ.
19260	AAB9441	SVOCs	4 analytes had recoveries between 10 and 50% in the QC water sample and are qualified UJ.
19270	AAB9248	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19270	AAB9251	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19270	AAB9253	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19270	AAB9254	High explosives	All data qualified R for grossly exceeding required holding time for water samples.
19270	AAB9255	High explosives	All data qualified R for grossly exceeding required holding time for water samples.
19270	AAB9256	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19316	AAB9257	SVOCs	15 analytes had recoveries between 10 and 50% and are qualified UJ.
19316	AAB9260	SVOCs	15 analytes had recoveries between 10 and 50% and are qualified UJ.
19316	AAB9265	SVOCs	15 analytes had recoveries between 10 and 50% and are qualified UJ.
19316	AAB9267	SVOCs	15 analytes had recoveries between 10 and 50% and are qualified UJ.
19316	AAB9448	SVOCs	15 analytes had recoveries between 10 and 50% and are qualified UJ.
19316	AAB9451	SVOCs	15 analytes had recoveries between 10 and 50% and are qualified UJ.
19316	AAB9454	SVOCs	15 analytes had recoveries between 10 and 50% and are qualified UJ.
19376	AAB9269	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%)
19376	AAB9269	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 18 analytes had recoveries between 10 and 50% and are qualified UJ.
19376	AAB9271	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%)
19376	AAB9271	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 18 analytes had recoveries between 10 and 50% and are qualified UJ.
19376	AAB9272	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%)
19376	AAB9272	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 18 analytes had recoveries between 10 and 50% and are qualified UJ.
19376	AAB9274	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%)
19376	AAB9274	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 18 analytes had recoveries between 10 and 50% and are qualified UJ.
19376	AAB9277	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%)

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19376	AAB9277	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 18 analytes had recoveries between 10 and 50% and are qualified UJ.
19377	AAB9455	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 18 analytes had recoveries between 10 and 50% and are qualified UJ.
19377	AAB9461	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 18 analytes had recoveries between 10 and 50% and are qualified UJ.
19377	AAB9464	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 18 analytes had recoveries between 10 and 50% and are qualified UJ.
19377	AAB9465	SVOCs	The recoveries for 1,2-dichlorobenzene, hexachloroethane, and 2-methylphenol were all <10% resulting in an R qualification for these analytes. 18 analytes had recoveries between 10 and 50% and are qualified UJ.
19397	AAB6587	TAL metals	Chromium, mercury, and thallium had low recoveries in the QC sample and are qualified J or UJ. Beryllium had a high recovery in the QC sample and all detects are qualified J.
19397	AAB6588	TAL metals	Chromium, mercury, and thallium had low recoveries in the QC sample and are qualified J or UJ. Beryllium had a high recovery in the QC sample and all detects are qualified J.
19397	AAB6589	TAL metals	Chromium, mercury, and thallium had low recoveries in the QC sample and are qualified J or UJ. Beryllium had a high recovery in the QC sample and all detects are qualified J.
19397	AAB6594	TAL metals	Chromium, mercury, and thallium had low recoveries in the QC sample and are qualified J or UJ. Beryllium had a high recovery in the QC sample and all detects are qualified J.
19397	AAB8653	TAL metals	Chromium, mercury, and thallium had low recoveries in the QC sample and are qualified J or UJ. Beryllium had a high recovery in the QC sample and all detects are qualified J.
19397	AAB8661	TAL metals	Chromium, mercury, and thallium had low recoveries in the QC sample and are qualified J or UJ. Beryllium had a high recovery in the QC sample and all detects are qualified J.
19397	AAB8665	TAL metals	Chromium, mercury, and thallium had low recoveries in the QC sample and are qualified J or UJ. Beryllium had a high recovery in the QC sample and all detects are qualified J.
19397	AAB8666	TAL metals	Chromium, mercury, and thallium had low recoveries in the QC sample and are qualified J or UJ. Beryllium had a high recovery in the QC sample and all detects are qualified J.
19402	AAB6552	TAL metals	Chromium had low recovery in the QC sample and is qualified J or UJ. Mercury missed the recommended holding time for soils by about 30 days. Mercury data qualified J or UJ.
19402	AAB6558	TAL metals	Chromium had low recovery in the QC sample and is qualified J or UJ. Mercury missed the recommended holding time for soils by about 30 days. Mercury data qualified J or UJ.
19402	AAB6562	TAL metals	Chromium had low recovery in the QC sample and is qualified J or UJ. Mercury missed the recommended holding time for soils by about 30 days. Mercury data qualified J or UJ.
19402	AAB6563	TAL metals	Chromium had low recovery in the QC sample and is qualified J or UJ. Mercury missed the recommended holding time for soils by about 30 days. Mercury data qualified J or UJ.
19402	AAB6565	TAL metals	Chromium had low recovery in the QC sample and is qualified J or UJ. Mercury missed the recommended holding time for soils by about 30 days. Mercury data qualified J or UJ.
19402	AAB6566	TAL metals	Chromium had low recovery in the QC sample and is qualified J or UJ. Mercury missed the recommended holding time for soils by about 30 days. Mercury data qualified J or UJ.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19402	AAB8647	TAL metals	Chromium had low recovery in the QC sample and is qualified J or UJ. Mercury missed the recommended holding time for soils by about 30 days. Mercury data qualified J or UJ.
19402	AAB8651	TAL metals	Chromium had low recovery in the QC sample and is qualified J or UJ. Mercury missed the recommended holding time for soils by about 30 days. Mercury data qualified J or UJ.
19402	AAB8652	TAL metals	Chromium had low recovery in the QC sample and is qualified J or UJ. Mercury missed the recommended holding time for soils by about 30 days. Mercury data qualified J or UJ.
19404	AAB6392	TAL metals	Mercury missed the recommended holding time for soils by about 40 days. Mercury data are qualified J or UJ.
19404	AAB6395	TAL metals	Mercury missed the recommended holding time for soils by about 40 days. Mercury data are qualified J or UJ.
19404	AAB6403	TAL metals	Mercury missed the recommended holding time for soils by about 40 days. Mercury data are qualified J or UJ.
19404	AAB6404	TAL metals	Mercury missed the recommended holding time for soils by about 40 days. Mercury data are qualified J or UJ.
19404	AAB6520	TAL metals	Mercury missed the recommended holding time for soils by about 40 days. Mercury data are qualified J or UJ.
19404	AAB6524	TAL metals	Mercury missed the recommended holding time for soils by about 40 days. Mercury data are qualified J or UJ.
19404	AAB6525	TAL metals	Mercury missed the recommended holding time for soils by about 40 days. Mercury data are qualified J or UJ.
19406	AAB6409	TAL metals	Mercury missed the recommended holding time for soils by about 40 days. Mercury also had a low recovery in the QC sample. Mercury data are qualified J or UJ.
19406	AAB6410	TAL metals	Mercury missed the recommended holding time for soils by about 40 days. Mercury also had a low recovery in the QC sample. Mercury data are qualified J or UJ.
19406	AAB6579	TAL metals	Mercury missed the recommended holding time for soils by about 40 days. Mercury also had a low recovery in the QC sample. Mercury data are qualified J or UJ.
19409	AAB6405	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ.
19409	AAB6526	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ.
19409	AAB6527	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ.
19409	AAB6532	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ.
19409	AAB6535	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ.
19409	AAB6536	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ.
19410	AAB8668	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ.
19410	AAB8674	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ.
19410	AAB8678	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19410	AAB8679	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ.
19420	AAB9278	High explosives	M-nitrotoluene, o-nitrotoluene, and p-nitrotoluene had low recoveries in the QC sample and are qualified UJ.
19420	AAB9278	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9278	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately.
19420	AAB9281	High explosives	M-nitrotoluene, o-nitrotoluene, and p-nitrotoluene had low recoveries in the QC sample and are qualified UJ.
19420	AAB9281	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9281	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately.
19420	AAB9283	High explosives	M-nitrotoluene, o-nitrotoluene, and p-nitrotoluene had low recoveries in the QC sample and are qualified UJ.
19420	AAB9283	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9283	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately.
19420	AAB9286	High explosives	M-nitrotoluene, o-nitrotoluene, and p-nitrotoluene had low recoveries in the QC sample and are qualified UJ.
19420	AAB9286	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9286	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately.
19420	AAB9287	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9287	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately.
19420	AAB9289	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9289	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately. Mixed xylenes qualified UJ for low recovery in QC sample.
19420	AAB9293	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9293	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately. Mixed xylenes qualified UJ for low recovery in QC sample.
19420	AAB9296	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19420	AAB9296	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately. 24 analytes qualified UJ for low internal standards.
19420	AAB9466	High explosives	M-nitrotoluene, o-nitrotoluene, and p-nitrotoluene had low recoveries in the QC sample and are qualified UJ.
19420	AAB9466	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9466	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately.
19420	AAB9469	High explosives	M-nitrotoluene, o-nitrotoluene, and p-nitrotoluene had low recoveries in the QC sample and are qualified UJ.
19420	AAB9469	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9469	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately.
19420	AAB9474	High explosives	M-nitrotoluene, o-nitrotoluene, and p-nitrotoluene had low recoveries in the QC sample and are qualified UJ.
19420	AAB9474	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9474	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately.
19420	AAB9476	High explosives	M-nitrotoluene, o-nitrotoluene, and p-nitrotoluene had low recoveries in the QC sample and are qualified UJ.
19420	AAB9476	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9476	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately.
19420	AAB9477	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9477	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately.
19420	AAB9480	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9480	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately. Mixed xylenes qualified UJ for low recovery in QC sample.
19420	AAB9481	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9481	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately.
19420	AAB9484	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19420	AAB9484	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately. Mixed xylenes qualified UJ for low recovery in QC sample.
19420	AAB9487	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9487	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately.
19420	AAB9488	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9488	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately. Mixed xylenes qualified UJ for low recovery in QC sample.
19420	AAB9489	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9489	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately. Mixed xylenes qualified UJ for low recovery in QC sample.
19420	AAB9494	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9494	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately.
19420	AAB9497	SVOCs	The recoveries for 1,2-dichlorobenzene, and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 7 analytes had recoveries between 10 and 50% and are qualified UJ.
19420	AAB9497	VOCs	Methylene chloride, trichlorofluoromethane, and acetone were detected in the method blank due to laboratory contamination. EQLs were raised appropriately.
19428	AAB8712	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury detects are qualified J for high recoveries in the QC sample.
19428	AAB8714	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury detects are qualified J for high recoveries in the QC sample.
19428	AAB8715	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury detects are qualified J for high recoveries in the QC sample.
19428	AAB9204	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury detects are qualified J for high recoveries in the QC sample.
19428	AAB9205	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury detects are qualified J for high recoveries in the QC sample.
19428	AAB9209	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury detects are qualified J for high recoveries in the QC sample.
19428	AAB9210	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury detects are qualified J for high recoveries in the QC sample.
19429	AAB6600	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury detects are qualified J for high recoveries in the QC sample.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19429	AAB8701	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury detects are qualified J for high recoveries in the QC sample.
19429	AAB8709	TAL metals	Chromium and aluminum had low recoveries in the QC sample and are qualified J or UJ. Mercury detects are qualified J for high recoveries in the QC sample.
19430	AAB8691	TAL metals	Mercury missed the recommended holding time for soils and also has a low recovery in the QC sample (73%). Mercury data are qualified J or UJ. Antimony had a high recovery in the QC sample. All antimony detects are qualified J.
19430	AAB8697	TAL metals	Mercury missed the recommended holding time for soils and also has a low recovery in the QC sample (73%). Mercury data are qualified J or UJ. Antimony had a high recovery in the QC sample. All antimony detects are qualified J.
19430	AAB8719	TAL metals	Mercury missed the recommended holding time for soils and also has a low recovery in the QC sample (73%). Mercury data are qualified J or UJ. Antimony had a high recovery in the QC sample. All antimony detects are qualified J.
19430	AAB8722	TAL metals	Mercury missed the recommended holding time for soils and also has a low recovery in the QC sample (73%). Mercury data are qualified J or UJ. Antimony had a high recovery in the QC sample. All antimony detects are qualified J.
19430	AAB8727	TAL metals	Mercury missed the recommended holding time for soils and also has a low recovery in the QC sample (73%). Mercury data are qualified J or UJ. Antimony had a high recovery in the QC sample. All antimony detects are qualified J.
19430	AAB8728	TAL metals	Mercury missed the recommended holding time for soils and also has a low recovery in the QC sample (73%). Mercury data are qualified J or UJ. Antimony had a high recovery in the QC sample. All antimony detects are qualified J.
19431	AAB8680	TAL metals	Mercury missed the recommended holding time for soils and also has a low recovery in the QC sample (73%). Mercury data are qualified J or UJ. Antimony had a high recovery in the QC sample. All antimony detects are qualified J.
19431	AAB8685	TAL metals	Mercury missed the recommended holding time for soils and also has a low recovery in the QC sample (73%). Mercury data are qualified J or UJ. Antimony had a high recovery in the QC sample. All antimony detects are qualified J.
19431	AAB8686	TAL metals	Mercury missed the recommended holding time for soils and also has a low recovery in the QC sample (73%). Mercury data are qualified J or UJ. Antimony had a high recovery in the QC sample. All antimony detects are qualified J.
19431	AAB8687	TAL metals	Mercury missed the recommended holding time for soils and also has a low recovery in the QC sample (73%). Mercury data are qualified J or UJ. Antimony had a high recovery in the QC sample. All antimony detects are qualified J.
19431	AAB8688	TAL metals	Mercury missed the recommended holding time for soils and also has a low recovery in the QC sample (73%). Mercury data are qualified J or UJ. Antimony had a high recovery in the QC sample. All antimony detects are qualified J.
19434	AAB9300	SVOCs	The recoveries for 1,2-dichlorobenzene and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 12 analytes had recoveries between 10 and 50% and are qualified UJ.
19434	AAB9301	SVOCs	The recoveries for 1,2-dichlorobenzene and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 12 analytes had recoveries between 10 and 50% and are qualified UJ.
19434	AAB9302	SVOCs	The recoveries for 1,2-dichlorobenzene and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 12 analytes had recoveries between 10 and 50% and are qualified UJ.
19434	AAB9303	SVOCs	The recoveries for 1,2-dichlorobenzene and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 12 analytes had recoveries between 10 and 50% and are qualified UJ.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19434	AAB9304	SVOCs	The recoveries for 1,2-dichlorobenzene and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 12 analytes had recoveries between 10 and 50% and are qualified UJ.
19434	AAB9308	SVOCs	The recoveries for 1,2-dichlorobenzene and 1,4-dichlorobenzene were <10% resulting in an R qualification for these analytes. 12 analytes had recoveries between 10 and 50% and are qualified UJ.
19441	AAB9297	High explosives	M-nitrotoluene, o-nitrotoluene, and p-nitrotoluene had low recoveries in the QC sample and are qualified UJ.
19441	AAB9300	High explosives	M-nitrotoluene, o-nitrotoluene, and p-nitrotoluene had low recoveries in the QC sample and are qualified UJ.
19441	AAB9301	High explosives	M-nitrotoluene, o-nitrotoluene, and p-nitrotoluene had low recoveries in the QC sample and are qualified UJ.
19441	AAB9302	High explosives	M-nitrotoluene, o-nitrotoluene, and p-nitrotoluene had low recoveries in the QC sample and are qualified UJ.
19441	AAB9303	High explosives	M-nitrotoluene, o-nitrotoluene, and p-nitrotoluene had low recoveries in the QC sample and are qualified UJ.
19441	AAB9304	High explosives	M-nitrotoluene, o-nitrotoluene, and p-nitrotoluene had low recoveries in the QC sample and are qualified UJ.
19441	AAB9308	High explosives	M-nitrotoluene, o-nitrotoluene, and p-nitrotoluene had low recoveries in the QC sample and are qualified UJ.
19445	AAB6603	TAL metals	Mercury missed the recommended holding time for soils. Mercury data qualified J or UJ. Vanadium had a high recovery in the QC sample. All vanadium detects qualified J.
19445	AAB6604	TAL metals	Mercury missed the recommended holding time for soils. Mercury data qualified J or UJ. Vanadium had a high recovery in the QC sample. All vanadium detects qualified J.
19445	AAB6610	TAL metals	Mercury missed the recommended holding time for soils. Mercury data qualified J or UJ. Vanadium had a high recovery in the QC sample. All vanadium detects qualified J.
19445	AAB6612	TAL metals	Mercury missed the recommended holding time for soils. Mercury data qualified J or UJ. Vanadium had a high recovery in the QC sample. All vanadium detects qualified J.
19445	AAB6614	TAL metals	Mercury missed the recommended holding time for soils. Mercury data qualified J or UJ. Vanadium had a high recovery in the QC sample. All vanadium detects qualified J.
19445	AAB9211	TAL metals	Mercury missed the recommended holding time for soils. Mercury data qualified J or UJ. Vanadium had a high recovery in the QC sample. All vanadium detects qualified J.
19445	AAB9216	TAL metals	Mercury missed the recommended holding time for soils. Mercury data qualified J or UJ. Vanadium had a high recovery in the QC sample. All vanadium detects qualified J.
19445	AAB9222	TAL metals	Mercury missed the recommended holding time for soils. Mercury data qualified J or UJ. Vanadium had a high recovery in the QC sample. All vanadium detects qualified J.
19445	AAB9223	TAL metals	Mercury missed the recommended holding time for soils. Mercury data qualified J or UJ. Vanadium had a high recovery in the QC sample. All vanadium detects qualified J.
19445	AAB9224	TAL metals	Mercury missed the recommended holding time for soils. Mercury data qualified J or UJ. Vanadium had a high recovery in the QC sample. All vanadium detects qualified J.
19445	AAB9227	TAL metals	Mercury missed the recommended holding time for soils. Mercury data qualified J or UJ. Vanadium had a high recovery in the QC sample. All vanadium detects qualified J.
19445	AAB9231	TAL metals	Mercury missed the recommended holding time for soils. Mercury data qualified J or UJ. Vanadium had a high recovery in the QC sample. All vanadium detects qualified J.
19445	AAB9234	TAL metals	Mercury missed the recommended holding time for soils. Mercury data qualified J or UJ. Vanadium had a high recovery in the QC sample. All vanadium detects qualified J.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19446	AAB6615	TAL metals	Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ. Aluminum and chromium had low recoveries in the QC sample and are qualified J or UJ.
19446	AAB6617	TAL metals	Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ. Aluminum and chromium had low recoveries in the QC sample and are qualified J or UJ.
19446	AAB6618	TAL metals	Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ. Aluminum and chromium had low recoveries in the QC sample and are qualified J or UJ.
19446	AAB6623	TAL metals	Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ. Aluminum and chromium had low recoveries in the QC sample and are qualified J or UJ.
19446	AAB8641	TAL metals	Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ. Aluminum and chromium had low recoveries in the QC sample and are qualified J or UJ.
19446	AAB8642	TAL metals	Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ. Aluminum and chromium had low recoveries in the QC sample and are qualified J or UJ.
19460	AAB9498	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%)
19460	AAB9498	SVOCs	The recovery for 1,2-dichlorobenzene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.
19460	AAB9506	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%)
19460	AAB9506	SVOCs	The recovery for 1,2-dichlorobenzene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.
19460	AAB9509	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%)
19460	AAB9509	SVOCs	The recovery for 1,2-dichlorobenzene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.
19460	AAB9511	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%)
19460	AAB9511	SVOCs	The recovery for 1,2-dichlorobenzene was <10% resulting in an R qualification for this analyte. 5 analytes had recoveries between 10 and 50% and are qualified UJ.
19487	AAB9310	SVOCs	Bis(2-ethylhexyl)phthalate found in the method blank from lab contamination. EQLs raised for samples in which it was detected. 16 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
19487	AAB9313	SVOCs	Bis(2-ethylhexyl)phthalate found in the method blank from lab contamination. EQLs raised for samples in which it was detected. 16 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
19487	AAB9315	SVOCs	Bis(2-ethylhexyl)phthalate found in the method blank from lab contamination. EQLs raised for samples in which it was detected. 16 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
19487	AAB9512	SVOCs	Bis(2-ethylhexyl)phthalate found in the method blank from lab contamination. EQLs raised for samples in which it was detected. 16 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
19487	AAB9513	SVOCs	Bis(2-ethylhexyl)phthalate found in the method blank from lab contamination. EQLs raised for samples in which it was detected. 16 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19487	AAB9514	SVOCs	Bis(2-ethylhexyl)phthalate found in the method blank from lab contamination. EQLs raised for samples in which it was detected. 16 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
19487	AAB9517	SVOCs	Bis(2-ethylhexyl)phthalate found in the method blank from lab contamination. EQLs raised for samples in which it was detected. 16 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
19487	AAB9520	SVOCs	Bis(2-ethylhexyl)phthalate found in the method blank from lab contamination. EQLs raised for samples in which it was detected. 16 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
19487	AAB9523	SVOCs	Bis(2-ethylhexyl)phthalate found in the method blank from lab contamination. EQLs raised for samples in which it was detected. 16 analytes had low recoveries (10-50%) in the QC sample and are qualified UJ.
19503	AAB9524	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
19503	AAB9524	SVOCs	The recovery for 1,2-dichlorobenzene was <10% resulting in an R qualification for this analyte. 4 analytes had recoveries between 10 and 50% and are qualified UJ.
19503	AAB9527	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
19503	AAB9527	SVOCs	The recovery for 1,2-dichlorobenzene was <10% resulting in an R qualification for this analyte. 4 analytes had recoveries between 10 and 50% and are qualified UJ.
19503	AAB9528	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
19503	AAB9528	SVOCs	The recovery for 1,2-dichlorobenzene was <10% resulting in an R qualification for this analyte. 4 analytes had recoveries between 10 and 50% and are qualified UJ.
19503	AAB9533	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
19503	AAB9533	SVOCs	The recovery for 1,2-dichlorobenzene was <10% resulting in an R qualification for this analyte. 4 analytes had recoveries between 10 and 50% and are qualified UJ.
19503	AAB9535	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
19503	AAB9535	SVOCs	The recovery for 1,2-dichlorobenzene was <10% resulting in an R qualification for this analyte. 4 analytes had recoveries between 10 and 50% and are qualified UJ.
19522	AAB9317	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
19522	AAB9317	SVOCs	The recovery for 1,2-dichlorobenzene was <10% resulting in an R qualification for this analyte. 4 analytes had recoveries between 10 and 50% and are qualified UJ.
19522	AAB9322	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
19522	AAB9322	SVOCs	The recovery for 1,2-dichlorobenzene was <10% resulting in an R qualification for this analyte. 4 analytes had recoveries between 10 and 50% and are qualified UJ.
19522	AAB9324	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
19522	AAB9324	SVOCs	The recovery for 1,2-dichlorobenzene was <10% resulting in an R qualification for this analyte. 4 analytes had recoveries between 10 and 50% and are qualified UJ.
19522	AAB9326	High explosives	Nitrobenzene qualified UJ for low recovery in the QC sample (10-50%).
19522	AAB9326	SVOCs	The recovery for 1,2-dichlorobenzene was <10% resulting in an R qualification for this analyte. 4 analytes had recoveries between 10 and 50% and are qualified UJ.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19547	AAB9375	SVOCs	Surrogate phenol-d5 had <10% recovery. The 14 associated analytes are qualified R.
19570	AAB6569	SVOCs	Recommended extraction holding times exceeded. Samples kept frozen until extraction. All data are qualified UJ.
19570	AAB6580	SVOCs	Recommended extraction holding times exceeded. Samples kept frozen until extraction. All data are qualified UJ.
19570	AAB9309	SVOCs	Recommended extraction holding times exceeded. Samples kept frozen until extraction. All data are qualified UJ.
19570	AAB9309	VOCs	Methylene chloride found in method blank from lab contamination. EQLs raised as appropriate.
19570	AAB9428	SVOCs	Recommended extraction holding times exceeded. Samples kept frozen until extraction. All data are qualified UJ.
19571	AAB6569	TAL metals	Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ.
19571	AAB6580	TAL metals	Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ.
19571	AAB9309	TAL metals	Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ.
19571	AAB9428	TAL metals	Mercury missed the recommended holding time for soils. Mercury data are qualified J or UJ.
19574	AAB6569	Radionuclides[h]	Gamma spectroscopy and total uranium data qualified J. The laboratory used too little sample to do proper quantitation.
19574	AAB6580	Radionuclides[h]	Gamma spectroscopy and total uranium data qualified J. The laboratory used too little sample to do proper quantitation.
19574	AAB9309	Radionuclides[h]	Gamma spectroscopy and total uranium data qualified J. The laboratory used too little sample to do proper quantitation.
19574	AAB9428	Radionuclides[h]	Gamma spectroscopy and total uranium data qualified J. The laboratory used too little sample to do proper quantitation.
19604	AAB6363	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC and LCS[l] sample.
19604	AAB6364	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC and LCS sample.
19604	AAB6371	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC and LCS sample.
19604	AAB6376	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC and LCS sample.
19604	AAB6378	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC and LCS sample.
19630	AAB9380	SVOCs	The recovery for 1,2-dichlorobenzene and 2-methylphenol were <10% resulting in an R qualification for these analytes. 3 analytes had recoveries between 10 and 50% and are qualified UJ.
19630	AAB9381	SVOCs	The recovery for 1,2-dichlorobenzene and 2-methylphenol were <10% resulting in an R qualification for these analytes. 3 analytes had recoveries between 10 and 50% and are qualified UJ.
19630	AAB9385	SVOCs	The recovery for 1,2-dichlorobenzene and 2-methylphenol were <10% resulting in an R qualification for these analytes. 3 analytes had recoveries between 10 and 50% and are qualified UJ.
19630	AAB9389	SVOCs	The recovery for 1,2-dichlorobenzene and 2-methylphenol were <10% resulting in an R qualification for these analytes. 3 analytes had recoveries between 10 and 50% and are qualified UJ.
19630	AAB9390	SVOCs	The recovery for 1,2-dichlorobenzene and 2-methylphenol were <10% resulting in an R qualification for these analytes. 3 analytes had recoveries between 10 and 50% and are qualified UJ.
19630	AAB9392	SVOCs	The recovery for 1,2-dichlorobenzene and 2-methylphenol were <10% resulting in an R qualification for these analytes. 3 analytes had recoveries between 10 and 50% and are qualified UJ.
19630	AAB9394	SVOCs	The recovery for 1,2-dichlorobenzene and 2-methylphenol were <10% resulting in an R qualification for these analytes. 3 analytes had recoveries between 10 and 50% and are qualified UJ.
19631	AAB9380	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.

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TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19631	AAB9381	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19695	AAB6379	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample. Uranium qualified J for out of control internal standards.
19695	AAB6384	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
19695	AAB6390	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
19695	AAB6501	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample. Uranium qualified J for out of control internal standards.
19695	AAB6507	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
19695	AAB6510	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
19695	AAB6511	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
19695	AAB6512	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
19745	AAB2885	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, iron, manganese, and zinc showed sample heterogeneity in the duplicate and matrix spike samples and are qualified J.
19745	AAB2903	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, iron, manganese, and zinc showed sample heterogeneity in the duplicate and matrix spike samples and are qualified J.
19745	AAB2904	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, iron, manganese, and zinc showed sample heterogeneity in the duplicate and matrix spike samples and are qualified J.
19745	AAB2905	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, iron, manganese, and zinc showed sample heterogeneity in the duplicate and matrix spike samples and are qualified J.
19745	AAB6122	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, iron, manganese, and zinc showed sample heterogeneity in the duplicate and matrix spike samples and are qualified J.
19760	AAB3045	Radionuclides[c]	Strontium-90 qualified J for high matrix spike recovery.
19761	AAB2906	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium and silver had low recoveries in the QC sample and are qualified J or UJ. Cadmium and antimony detects are qualified J for high recoveries.
19761	AAB2915	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium and silver had low recoveries in the QC sample and are qualified J or UJ. Cadmium and antimony detects are qualified J for high recoveries.
19761	AAB2916	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium and silver had low recoveries in the QC sample and are qualified J or UJ. Cadmium and antimony detects are qualified J for high recoveries.
19761	AAB2917	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium and silver had low recoveries in the QC sample and are qualified J or UJ. Cadmium and antimony detects are qualified J for high recoveries.
19761	AAB6124	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium and silver had low recoveries in the QC sample and are qualified J or UJ. Cadmium and antimony detects are qualified J for high recoveries.
19761	AAB6125	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium and silver had low recoveries in the QC sample and are qualified J or UJ. Cadmium and antimony detects are qualified J for high recoveries.
19761	AAB6129	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium and silver had low recoveries in the QC sample and are qualified J or UJ. Cadmium and antimony detects are qualified J for high recoveries.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19761	AAB6139	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium and silver had low recoveries in the QC sample and are qualified J or UJ. Cadmium and antimony detects are qualified J for high recoveries.
19761	AAB6141	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium and silver had low recoveries in the QC sample and are qualified J or UJ. Cadmium and antimony detects are qualified J for high recoveries.
19761	AAB6142	TAL metals	Mercury qualified R for grossly exceeding required holding time for water samples. All other analytes qualified J or UJ for exceeding holding time for water samples.
19761	AAB6143	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium and silver had low recoveries in the QC sample and are qualified J or UJ. Cadmium and antimony detects are qualified J for high recoveries.
19761	AAB6144	TAL metals	Mercury qualified R for grossly exceeding required holding time for water samples. All other analytes qualified J or UJ for exceeding holding time for water samples.
19779	AAB2845	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19779	AAB2851	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19779	AAB2856	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19779	AAB2857	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19780	AAB2882	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19780	AAB2883	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19780	AAB2884	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19780	AAB2893	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19781	AAB2933	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19781	AAB2934	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19781	AAB2935	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19782	AAB2920	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19782	AAB2928	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19782	AAB2929	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19783	AAB2861	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19783	AAB2863	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19784	AAB6169	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19784	AAB6180	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19784	AAB6181	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19786	AAB3034	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19786	AAB3042	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.

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TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19786	AAB3044	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19786	AAB3045	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19786	AAB6258	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19786	AAB6264	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19786	AAB6268	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19786	AAB6270	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19786	AAB6271	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19786	AAB6272	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19786	AAB6281	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19786	AAB6288	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19786	AAB6289	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19787	AAB2839	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony, selenium, and silver qualified J or UJ for low matrix spike recoveries.
19787	AAB2843	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony, selenium, and silver qualified J or UJ for low matrix spike recoveries.
19787	AAB2844	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony, selenium, and silver qualified J or UJ for low matrix spike recoveries.
19789	AAB2949	Radionuclides[c]	Uranium values qualified J for low recoveries in the QC sample.
19789	AAB2958	Radionuclides[c]	Uranium values qualified J for low recoveries in the QC sample.
19789	AAB2959	Radionuclides[c]	Uranium values qualified J for low recoveries in the QC sample.
19789	AAB2962	Radionuclides[c]	Uranium values qualified J for low recoveries in the QC sample.
19789	AAB2979	Radionuclides[c]	Uranium values qualified J for low recoveries in the QC sample.
19793	AAB2960	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19793	AAB2961	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19804	AAB6392	Radionuclides[c]	Uranium and strontium-90 qualified J for low matrix spike recoveries.
19804	AAB6395	Radionuclides[c]	Uranium and strontium-90 qualified J for low matrix spike recoveries.
19804	AAB6403	Radionuclides[c]	Uranium and strontium-90 qualified J for low matrix spike recoveries.
19804	AAB6404	Radionuclides[c]	Uranium and strontium-90 qualified J for low matrix spike recoveries.
19804	AAB6520	Radionuclides[c]	Uranium and strontium-90 qualified J for low matrix spike recoveries.
19804	AAB6524	Radionuclides[c]	Uranium and strontium-90 qualified J for low matrix spike recoveries.
19804	AAB6525	Radionuclides[c]	Uranium and strontium-90 qualified J for low matrix spike recoveries.
19805	AAB6405	Radionuclides[c]	Uranium and strontium-90 qualified J for low matrix spike recoveries.
19805	AAB6526	Radionuclides[c]	Uranium and strontium-90 qualified J for low matrix spike recoveries.
19805	AAB6527	Radionuclides[c]	Uranium and strontium-90 qualified J for low matrix spike recoveries.
19805	AAB6532	Radionuclides[c]	Uranium and strontium-90 qualified J for low matrix spike recoveries.
19805	AAB6535	Radionuclides[c]	Uranium and strontium-90 qualified J for low matrix spike recoveries.
19805	AAB6536	Radionuclides[c]	Uranium and strontium-90 qualified J for low matrix spike recoveries.
19807	AAB6409	Radionuclides[h]	Strontium-90 and isotopic uranium qualified J for high recovery in the LCS sample. Total uranium qualified J for out of control internal standards.
19807	AAB6410	Radionuclides[h]	Strontium-90 and isotopic uranium qualified J for high recovery in the LCS sample. Total uranium qualified J for out of control internal standards.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19807	AAB6579	Radionuclides[c]	Strontium-90 and isotopic uranium qualified J for high recovery in the LCS sample. Total uranium qualified J for out of control internal standards.
19808	AAB6537	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample. Total uranium qualified J for high recovery in the LCS sample.
19808	AAB6538	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample. Total uranium qualified J for high recovery in the LCS sample.
19808	AAB6539	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample. Total uranium qualified J for high recovery in the LCS sample.
19808	AAB6546	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample. Total uranium qualified J for high recovery in the LCS sample.
19808	AAB6550	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample. Total uranium qualified J for high recovery in the LCS sample.
19808	AAB6551	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample. Total uranium qualified J for high recovery in the LCS sample.
19809	AAB6552	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample. Total uranium qualified J for high recovery in the LCS sample and a low recovery in the QC sample.
19809	AAB6558	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample. Total uranium qualified J for high recovery in the LCS sample and a low recovery in the QC sample.
19809	AAB6562	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample. Total uranium qualified J for high recovery in the LCS sample and a low recovery in the QC sample.
19809	AAB6563	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample. Total uranium qualified J for high recovery in the LCS sample and a low recovery in the QC sample.
19809	AAB6565	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample. Total uranium qualified J for high recovery in the LCS sample and a low recovery in the QC sample.
19809	AAB6566	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample. Total uranium qualified J for high recovery in the LCS sample and a low recovery in the QC sample.
19809	AAB8647	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample. Total uranium qualified J for high recovery in the LCS sample and a low recovery in the QC sample.
19809	AAB8651	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample. Total uranium qualified J for high recovery in the LCS sample and a low recovery in the QC sample.
19809	AAB8652	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample. Total uranium qualified J for high recovery in the LCS sample and a low recovery in the QC sample.
19810	AAB9235	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Aluminum qualified J or UJ for low recovery in QC sample.
19810	AAB9236	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Aluminum qualified J or UJ for low recovery in QC sample.
19810	AAB9242	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Aluminum qualified J or UJ for low recovery in QC sample.
19810	AAB9246	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Aluminum qualified J or UJ for low recovery in QC sample.
19810	AAB9247	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Aluminum qualified J or UJ for low recovery in QC sample.
19810	AAB9429	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Aluminum qualified J or UJ for low recovery in QC sample.

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TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19810	AAB9433	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Aluminum qualified J or UJ for low recovery in QC sample.
19812	AAB8668	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample.
19812	AAB8674	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample.
19812	AAB8678	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample.
19812	AAB8679	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample.
19813	AAB9422	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19813	AAB9424	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19813	AAB9427	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19814	AAB8680	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample.
19814	AAB8685	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample.
19814	AAB8686	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample. Total uranium qualified J for out of control internal standards.
19814	AAB8687	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample. Total uranium qualified J for out of control internal standards.
19814	AAB8688	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample.
19815	AAB8691	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC samples.
19815	AAB8697	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC samples.
19815	AAB8719	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC samples.
19815	AAB8722	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC samples.
19815	AAB8727	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC samples.
19815	AAB8728	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC samples.
19818	AAB9248	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recovery in the QC sample.
19818	AAB9251	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recovery in the QC sample.
19818	AAB9253	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recovery in the QC sample.
19818	AAB9254	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recovery in the QC sample.
19818	AAB9255	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recovery in the QC sample.
19818	AAB9256	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recovery in the QC sample.
19818	AAB9438	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recovery in the QC sample.
19818	AAB9439	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recovery in the QC sample.
19818	AAB9440	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recovery in the QC sample.
19818	AAB9441	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recovery in the QC sample.
19821	AAB9257	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19821	AAB9260	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19821	AAB9265	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19821	AAB9267	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19821	AAB9448	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19821	AAB9451	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19821	AAB9454	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
19850	AAB9455	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recovery in the QC sample.
19850	AAB9461	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recovery in the QC sample.
19850	AAB9464	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recovery in the QC sample.
19850	AAB9465	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recovery in the QC sample.
19852	AAB9269	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium and thallium qualified J or UJ for low recovery in the QC sample.
19852	AAB9271	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium and thallium qualified J or UJ for low recovery in the QC sample.
19852	AAB9272	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium and thallium qualified J or UJ for low recovery in the QC sample.
19852	AAB9274	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium and thallium qualified J or UJ for low recovery in the QC sample.
19852	AAB9277	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium and thallium qualified J or UJ for low recovery in the QC sample.
19878	AAB9257	Radionuclides[c]	Strontium-90 qualified J for low recovery in QC sample.
19878	AAB9448	Radionuclides[c]	Strontium-90 qualified J for low recovery in QC sample.
19878	AAB9451	Radionuclides[c]	Strontium-90 qualified J for low recovery in QC sample.
19878	AAB9454	Radionuclides[c]	Strontium-90 qualified J for low recovery in QC sample.
19880	AAB9248	Radionuclides[c]	Strontium-90 qualified J for low recovery in QC sample.
19880	AAB9253	Radionuclides[c]	Strontium-90 qualified J for low recovery in QC sample.
19880	AAB9254	Radionuclides[c]	Uranium qualified J for low matrix spike recovery.
19880	AAB9440	Radionuclides[c]	Uranium qualified J for low matrix spike recovery.
19884	AAB6600	Radionuclides[c]	Uranium qualified J for low recovery in QC sample.
19884	AAB8701	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample. Uranium qualified J for low recovery in the QC sample.
19884	AAB8709	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample. Uranium qualified J for low recovery in the QC sample.
19886	AAB9422	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample. Uranium qualified J for high recovery in the matrix spike sample.
19886	AAB9424	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample. Uranium qualified J for high recovery in the matrix spike sample.
19886	AAB9427	Radionuclides[c]	Strontium-90 qualified J for low recovery in the matrix spike sample. Uranium qualified J for high recovery in the matrix spike sample.
19887	AAB9235	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples. Uranium qualified J for low recovery in matrix spike sample.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19887	AAB9236	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples. Uranium qualified J for low recovery in matrix spike sample.
19887	AAB9242	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples. Uranium qualified J for low recovery in matrix spike sample.
19887	AAB9246	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples. Uranium qualified J for low recovery in matrix spike sample.
19887	AAB9247	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples. Uranium qualified J for low recovery in matrix spike sample.
19887	AAB9429	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples. Uranium qualified J for low recovery in matrix spike sample.
19887	AAB9433	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples. Uranium qualified J for low recovery in matrix spike sample.
19888	AAB6615	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples.
19888	AAB6617	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples.
19888	AAB6618	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples.
19888	AAB6623	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples.
19888	AAB8641	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples.
19888	AAB8642	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples.
19890	AAB8712	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples.
19890	AAB8714	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples.
19890	AAB8715	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples.
19890	AAB9204	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples.
19890	AAB9205	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples.
19890	AAB9209	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples.
19890	AAB9210	Radionuclides[c]	Strontium-90 qualified J for low recovery in matrix spike and QC samples.
19892	AAB6603	Radionuclides[c]	Total uranium and strontium-90 qualified J for low matrix spike recoveries.
19892	AAB6604	Radionuclides[h]	Total uranium and strontium-90 qualified J for low matrix spike recoveries.
19892	AAB6610	Radionuclides[c]	Total uranium and strontium-90 qualified J for low matrix spike recoveries.
19892	AAB6612	Radionuclides[c]	Total uranium and strontium-90 qualified J for low matrix spike recoveries.
19892	AAB6614	Radionuclides[c]	Total uranium and strontium-90 qualified J for low matrix spike recoveries.
19892	AAB9211	Radionuclides[c]	Total uranium and strontium-90 qualified J for low matrix spike recoveries.
19892	AAB9216	Radionuclides[c]	Total uranium and strontium-90 qualified J for low matrix spike recoveries.
19892	AAB9222	Radionuclides[c]	Total uranium and strontium-90 qualified J for low matrix spike recoveries.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19892	AAB9223	Radionuclides[c]	Total uranium and strontium-90 qualified J for low matrix spike recoveries.
19892	AAB9224	Radionuclides[c]	Total uranium and strontium-90 qualified J for low matrix spike recoveries.
19892	AAB9227	Radionuclides[h]	Total uranium and strontium-90 qualified J for low matrix spike recoveries.
19892	AAB9231	Radionuclides[c]	Total uranium and strontium-90 qualified J for low matrix spike recoveries.
19892	AAB9234	Radionuclides[c]	Total uranium and strontium-90 qualified J for low matrix spike recoveries.
19895	AAB9327	SVOCs	5 analytes had recoveries between 10 and 50% in QC sample and are qualified UJ.
19895	AAB9327	VOCs	The 16 analytes associated with the 4th internal standard are qualified UJ.
19895	AAB9330	SVOCs	5 analytes had recoveries between 10 and 50% in QC sample and are qualified UJ.
19895	AAB9330	VOCs	All analytes are qualified UJ for low internal standards.
19895	AAB9333	SVOCs	5 analytes had recoveries between 10 and 50% in QC sample and are qualified UJ.
19895	AAB9333	VOCs	The 16 analytes associated with the 4th internal standard are qualified UJ.
19895	AAB9336	SVOCs	5 analytes had recoveries between 10 and 50% in QC sample and are qualified UJ.
19895	AAB9336	VOCs	The 16 analytes associated with the 4th internal standard are qualified UJ.
19895	AAB9382	SVOCs	5 analytes had recoveries between 10 and 50% in QC sample and are qualified UJ.
19895	AAB9382	VOCs	All analytes are qualified UJ for low internal standards.
19895	AAB9384	SVOCs	5 analytes had recoveries between 10 and 50% in QC sample and are qualified UJ.
19895	AAB9384	VOCs	The 16 analytes associated with the 4th internal standard are qualified UJ.
19895	AAB9539	SVOCs	5 analytes had recoveries between 10 and 50% in QC sample and are qualified UJ.
19895	AAB9539	VOCs	The 16 analytes associated with the 4th internal standard are qualified UJ.
19895	AAB9543	SVOCs	5 analytes had recoveries between 10 and 50% in QC sample and are qualified UJ.
19895	AAB9543	VOCs	The 16 analytes associated with the 4th internal standard are qualified UJ.
19896	AAB9382	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19896	AAB9384	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19896	AAB9539	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19896	AAB9543	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
19898	AAB9278	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9281	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9283	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9286	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.

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TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
19898	AAB9287	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9289	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9293	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9296	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9466	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9469	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9474	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9476	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9477	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9480	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9481	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9484	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9487	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9488	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9489	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9494	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19898	AAB9497	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium, lead, thallium, arsenic, and silver qualified J or UJ for low recoveries in the QC sample.
19933	AAB9338	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
20010	AAB9337	SVOCs	Holding times exceeded by 7 days. All analytes qualified UJ.
20010	AAB9341	SVOCs	Holding times exceeded by 7 days. All analytes qualified UJ.
20010	AAB9342	SVOCs	All analytes qualified R for surrogate recoveries <10%.
20012	AAB9337	Radionuclides	Strontium-90 results qualified J for heterogeneity shown in duplicate analysis.
20012	AAB9341	Radionuclides	Strontium-90 results qualified J for heterogeneity shown in duplicate analysis.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
20012	AAB9342	Radionuclides	Strontium-90 results qualified J for heterogeneity shown in duplicate analysis.
20032	AAB9347	SVOCs	3-nitroaniline and 4-nitroaniline qualified UJ for large percent difference for the continuing calibration. 10 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
20032	AAB9350	SVOCs	3-nitroaniline and 4-nitroaniline qualified UJ for large percent difference for the continuing calibration. 10 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
20032	AAB9544	SVOCs	3-nitroaniline and 4-nitroaniline qualified UJ for large percent difference for the continuing calibration. 10 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
20032	AAB9546	SVOCs	3-nitroaniline and 4-nitroaniline qualified UJ for large percent difference for the continuing calibration. 10 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
20032	AAB9549	SVOCs	3-nitroaniline and 4-nitroaniline qualified UJ for large percent difference for the continuing calibration. 10 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
20032	AAB9554	SVOCs	3-nitroaniline and 4-nitroaniline qualified UJ for large percent difference for the continuing calibration. 10 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
20032	AAB9555	SVOCs	3-nitroaniline and 4-nitroaniline qualified UJ for large percent difference for the continuing calibration. 10 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
20033	AAB9347	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
20033	AAB9350	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
20033	AAB9544	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
20033	AAB9546	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
20033	AAB9549	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
20033	AAB9554	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
20033	AAB9555	High explosives	All data qualified UJ for exceeding the recommended holding times for soil samples.
20067	AAB9498	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20067	AAB9506	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20067	AAB9509	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20067	AAB9511	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20079	AAB9310	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20079	AAB9313	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
20079	AAB9315	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20079	AAB9512	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20079	AAB9513	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20079	AAB9514	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20079	AAB9517	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20079	AAB9520	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20079	AAB9523	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20082	AAB9310	Radionuclides[c]	Uranium qualified J for low internal standards.
20082	AAB9313	Radionuclides[c]	Uranium qualified J for low internal standards.
20082	AAB9315	Radionuclides[c]	Uranium qualified J for low internal standards.
20082	AAB9512	Radionuclides[c]	Uranium qualified J for low internal standards.
20082	AAB9513	Radionuclides[c]	Uranium qualified J for low internal standards.
20082	AAB9514	Radionuclides[c]	Uranium qualified J for low internal standards.
20082	AAB9517	Radionuclides[c]	Uranium qualified J for low internal standards.
20082	AAB9520	Radionuclides[c]	Uranium qualified J for low internal standards.
20082	AAB9523	Radionuclides[c]	Uranium qualified J for low internal standards.
20087	AAB9380	Radionuclides[c]	Uranium qualified J for low recovery in the QC sample.
20087	AAB9381	Radionuclides[c]	Uranium qualified J for low recovery in the QC sample.
20087	AAB9385	Radionuclides[c]	Uranium qualified J for low recovery in the QC sample.
20087	AAB9389	Radionuclides[c]	Uranium qualified J for low recovery in the QC sample.
20087	AAB9390	Radionuclides[c]	Uranium qualified J for low recovery in the QC sample.
20087	AAB9392	Radionuclides[c]	Uranium qualified J for low recovery in the QC sample.
20087	AAB9394	Radionuclides[c]	Uranium qualified J for low recovery in the QC sample.
20088	AAB9524	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20088	AAB9527	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20088	AAB9528	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20088	AAB9533	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
20088	AAB9535	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20090	AAB9317	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20090	AAB9322	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20090	AAB9324	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20090	AAB9326	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20091	AAB9369	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20091	AAB9375	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20092	AAB9380	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20092	AAB9381	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20092	AAB9385	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20092	AAB9389	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20092	AAB9390	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20092	AAB9392	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20092	AAB9394	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Antimony and zinc qualified J or UJ for low recoveries in the matrix spike samples. Lead and manganese qualified J for sample heterogeneity shown in the duplicates.
20109	AAB9338	Radionuclides[c]	Strontium-90 had a low recovery in the LCS and is qualified J.
20109	AAB9339	Radionuclides[c]	Strontium-90 had a low recovery in the LCS and is qualified J.
20110	AAB9327	TAL metals	Aluminum and nickel qualified J or UJ for low recoveries in the QC sample.
20110	AAB9330	TAL metals	Aluminum and nickel qualified J or UJ for low recoveries in the QC sample.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
20110	AAB9333	TAL metals	Aluminum and nickel qualified J or UJ for low recoveries in the QC sample.
20110	AAB9336	TAL metals	Aluminum and nickel qualified J or UJ for low recoveries in the QC sample.
20110	AAB9382	TAL metals	Aluminum and nickel qualified J or UJ for low recoveries in the QC sample.
20110	AAB9384	TAL metals	Aluminum and nickel qualified J or UJ for low recoveries in the QC sample.
20110	AAB9539	TAL metals	Aluminum and nickel qualified J or UJ for low recoveries in the QC sample.
20110	AAB9543	TAL metals	Aluminum and nickel qualified J or UJ for low recoveries in the QC sample.
20111	AAB9347	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
20111	AAB9350	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
20111	AAB9544	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
20111	AAB9546	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
20111	AAB9549	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
20111	AAB9554	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
20111	AAB9555	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the QC sample.
20112	AAB9338	TAL metals	Silver qualified R for matrix spike recovery <10%. Mercury qualified UJ for low matrix spike recovery.
20112	AAB9339	TAL metals	Silver qualified R for matrix spike recovery <10%. Mercury qualified UJ for low matrix spike recovery.
20113	AAB9327	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the LCS and QC samples, respectively.
20113	AAB9330	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the LCS and QC samples, respectively.
20113	AAB9333	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the LCS and QC samples, respectively.
20113	AAB9336	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the LCS and QC samples, respectively.
20113	AAB9382	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the LCS and QC samples, respectively.
20113	AAB9384	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the LCS and QC samples, respectively.
20113	AAB9539	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the LCS and QC samples, respectively.
20113	AAB9543	Radionuclides[c]	Uranium and strontium-90 qualified J for low recoveries in the LCS and QC samples, respectively.
20147	AAB9351	SVOCs	Anthracene, 1,2-dichlorobenzene, and 2-methylphenol had recoveries <10% in the QC sample and are qualified R. 4 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
20147	AAB9354	SVOCs	Anthracene, 1,2-dichlorobenzene, and 2-methylphenol had recoveries <10% in the QC sample and are qualified R. 4 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
20147	AAB9357	SVOCs	Anthracene, 1,2-dichlorobenzene, and 2-methylphenol had recoveries <10% in the QC sample and are qualified R. 4 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
20147	AAB9359	SVOCs	Anthracene, 1,2-dichlorobenzene, and 2-methylphenol had recoveries <10% in the QC sample and are qualified R. 4 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
20147	AAB9556	SVOCs	Anthracene, 1,2-dichlorobenzene, and 2-methylphenol had recoveries <10% in the QC sample and are qualified R. 4 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
20147	AAB9558	SVOCs	Anthracene, 1,2-dichlorobenzene, and 2-methylphenol had recoveries <10% in the QC sample and are qualified R. 4 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
20147	AAB9563	SVOCs	Anthracene, 1,2-dichlorobenzene, and 2-methylphenol had recoveries <10% in the QC sample and are qualified R. 4 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
20147	AAB9567	SVOCs	Anthracene, 1,2-dichlorobenzene, and 2-methylphenol had recoveries <10% in the QC sample and are qualified R. 4 analytes had recoveries between 10 and 50% in the QC sample and are qualified UJ.
20209	AAB9368	SVOCs	1,2-dichlorobenzene, hexachloromethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 17 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
20209	AAB9397	SVOCs	1,2-dichlorobenzene, hexachloromethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 17 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
20209	AAB9399	SVOCs	1,2-dichlorobenzene, hexachloromethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 17 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
20209	AAB9568	SVOCs	1,2-dichlorobenzene, hexachloromethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 17 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
20209	AAB9571	SVOCs	1,2-dichlorobenzene, hexachloromethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 17 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
20209	AAB9572	SVOCs	All analytes qualified UJ for exceeding holding times by 6 days.
20209	AAB9573	SVOCs	All analytes qualified UJ for exceeding holding times by 6 days.
20209	AAB9576	SVOCs	1,2-dichlorobenzene, hexachloromethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 17 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
20209	AAB9580	SVOCs	1,2-dichlorobenzene, hexachloromethane, and 2-methylphenol are qualified R for recoveries of <10% in the QC sample. 17 analytes are qualified UJ for recoveries between 10 and 50% in the QC sample.
20232	AAB9361	Radionuclides[K]	Isotopic uranium qualified J for high recovery in the LCS.
20232	AAB9364	Radionuclides[K]	Isotopic uranium qualified J for high recovery in the LCS.
20307	AAB2833	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ.
20318	AAB9368	TAL metals	Lead qualified R for recovery <10% in QC sample. Silver and mercury qualified J or UJ for low recovery in QC sample. Chromium detects qualified J for high recovery in QC sample. Calcium qualified J or UJ for low recovery in LCS.
20318	AAB9397	TAL metals	Lead qualified R for recovery <10% in QC sample. Silver and mercury qualified J or UJ for low recovery in QC sample. Chromium detects qualified J for high recovery in QC sample. Calcium qualified J or UJ for low recovery in LCS.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
20318	AAB9399	TAL metals	Lead qualified R for recovery <10% in QC sample. Silver and mercury qualified J or UJ for low recovery in QC sample. Chromium detects qualified J for high recovery in QC sample. Calcium qualified J or UJ for low recovery in LCS.
20318	AAB9568	TAL metals	Lead qualified R for recovery <10% in QC sample. Silver and mercury qualified J or UJ for low recovery in QC sample. Chromium detects qualified J for high recovery in QC sample. Calcium qualified J or UJ for low recovery in LCS.
20318	AAB9571	TAL metals	Lead qualified R for recovery <10% in QC sample. Silver and mercury qualified J or UJ for low recovery in QC sample. Chromium detects qualified J for high recovery in QC sample. Calcium qualified J or UJ for low recovery in LCS.
20318	AAB9572	TAL metals	Lead qualified R for recovery <10% in QC sample. Silver and mercury qualified J or UJ for low recovery in QC sample. Chromium detects qualified J for high recovery in QC sample. Calcium qualified J or UJ for low recovery in LCS.
20318	AAB9573	TAL metals	Lead qualified R for recovery <10% in QC sample. Silver and mercury qualified J or UJ for low recovery in QC sample. Chromium detects qualified J for high recovery in QC sample. Calcium qualified J or UJ for low recovery in LCS.
20318	AAB9576	TAL metals	Lead qualified R for recovery <10% in QC sample. Silver and mercury qualified J or UJ for low recovery in QC sample. Chromium detects qualified J for high recovery in QC sample. Calcium qualified J or UJ for low recovery in LCS.
20318	AAB9580	TAL metals	Lead qualified R for recovery <10% in QC sample. Silver and mercury qualified J or UJ for low recovery in QC sample. Chromium detects qualified J for high recovery in QC sample. Calcium qualified J or UJ for low recovery in LCS.
20319	AAB9351	TAL metals	Mercury qualified UJ for low recovery in QC sample.
20319	AAB9354	TAL metals	Mercury qualified UJ for low recovery in QC sample.
20319	AAB9357	TAL metals	Mercury qualified UJ for low recovery in QC sample.
20319	AAB9359	TAL metals	Mercury qualified UJ for low recovery in QC sample.
20319	AAB9556	TAL metals	Mercury qualified UJ for low recovery in QC sample.
20319	AAB9558	TAL metals	Mercury qualified UJ for low recovery in QC sample.
20319	AAB9563	TAL metals	Mercury qualified UJ for low recovery in QC sample.
20319	AAB9567	TAL metals	Mercury qualified UJ for low recovery in QC sample.
20323	AAB9347	TAL metals	Silver and lead qualified R for <10% recovery in matrix spike sample. Antimony, arsenic, barium, beryllium, cobalt, copper, manganese, nickel, and thallium qualified J or UJ for low recoveries in matrix spike sample.
20323	AAB9350	TAL metals	Silver and lead qualified R for <10% recovery in matrix spike sample. Antimony, arsenic, barium, beryllium, cobalt, copper, manganese, nickel, and thallium qualified J or UJ for low recoveries in matrix spike sample.
20323	AAB9544	TAL metals	Silver and lead qualified R for <10% recovery in matrix spike sample. Antimony, arsenic, barium, beryllium, cobalt, copper, manganese, nickel, and thallium qualified J or UJ for low recoveries in matrix spike sample.
20323	AAB9546	TAL metals	Silver and lead qualified R for <10% recovery in matrix spike sample. Antimony, arsenic, barium, beryllium, cobalt, copper, manganese, nickel, and thallium qualified J or UJ for low recoveries in matrix spike sample.
20323	AAB9549	TAL metals	Silver and lead qualified R for <10% recovery in matrix spike sample. Antimony, arsenic, barium, beryllium, cobalt, copper, manganese, nickel, and thallium qualified J or UJ for low recoveries in matrix spike sample.
20323	AAB9554	TAL metals	Silver and lead qualified R for <10% recovery in matrix spike sample. Antimony, arsenic, barium, beryllium, cobalt, copper, manganese, nickel, and thallium qualified J or UJ for low recoveries in matrix spike sample.

TABLE B-1 (CONTINUED)

DATA QUALITY EVALUATION FOR TA-10 SUBSURFACE SAMPLES

REQUEST NUMBER	SAMPLE ID	SUITE	COMMENTS
20323	AAB9555	TAL metals	Silver and lead qualified R for <10% recovery in matrix spike sample. Antimony, arsenic, barium, beryllium, cobalt, copper, manganese, nickel, and thallium qualified J or UJ for low recoveries in matrix spike sample.
20325	AAB9360	Radionuclides[c]	Strontium-90 and uranium qualified J for low recoveries in matrix spike and LCS, respectively.
20325	AAB9363	Radionuclides[c]	Strontium-90 and uranium qualified J for low recoveries in matrix spike and LCS, respectively.
20328	AAB9368	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
20328	AAB9397	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
20328	AAB9399	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
20328	AAB9568	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
20328	AAB9571	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
20328	AAB9572	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
20328	AAB9573	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
20328	AAB9576	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
20328	AAB9580	Radionuclides[c]	Strontium-90 qualified J for low recovery in the QC sample.
20332	AAB9351	Radionuclides[c]	Strontium-90 and uranium qualified J for low recoveries in the QC sample.
20332	AAB9354	Radionuclides[c]	Strontium-90 and uranium qualified J for low recoveries in the QC sample.
20332	AAB9357	Radionuclides[c]	Strontium-90 and uranium qualified J for low recoveries in the QC sample.
20332	AAB9359	Radionuclides[c]	Strontium-90 and uranium qualified J for low recoveries in the QC sample.
20332	AAB9556	Radionuclides[c]	Strontium-90 and uranium qualified J for low recoveries in the QC sample.
20332	AAB9558	Radionuclides[c]	Strontium-90 and uranium qualified J for low recoveries in the QC sample.
20332	AAB9563	Radionuclides[c]	Strontium-90 and uranium qualified J for low recoveries in the QC sample.
20332	AAB9567	Radionuclides[c]	Strontium-90 and uranium qualified J for low recoveries in the QC sample.
20371	AAB2973	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recoveries in QC sample.
20371	AAB6215	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recoveries in QC sample.
20371	AAB6222	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recoveries in QC sample.
20371	AAB6226	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recoveries in QC sample.
20371	AAB6227	TAL metals	Mercury missed the recommended holding time for soils and is qualified J or UJ. Chromium qualified J or UJ for low recoveries in QC sample.

[a] SVOCs = Semivolatile organic compounds.
[b] TAL metals = Target analyte list metals.
[c] Strontium-90 and total uranium (KPA).
[d] Strontium-90, gamma spectroscopy, and total uranium (KPA).
[e] Strontium-90 and total uranium (ICP/MS)
[f] RDX = hexahydro-1,3,5,-trinitro-1,3,5-triazine.
[g] VOCs = Volatile organic compounds.
[h] Strontium-90, gamma spectroscopy, isotopic uranium, and total uranium (KPA).
[i] LCS = Laboratory control sample.
[j] Strontium-90, gamma spectroscopy, isotopic uranium, total uranium (ICP/MS).
[k] Strontium-90, gamma spectroscopy, isotopic uranium.

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APPENDIX C RISK ASSESSMENT CALCULATIONS

No risk assessment was performed for the TA-10 Subsurface Aggregate Resource Conservation and Recovery Act (RCRA) constituents. Any risk assessment calculations for radiological constituents will be included in an addendum to this report.

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APPENDIX D BACKGROUND STATISTICAL ANALYSIS

1.0 PRESENTATION OF RESULTS BY INORGANIC CHEMICAL

The results from samples collected during the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) of the TA-10 Subsurface Aggregate indicated that 13 inorganic chemicals had concentrations greater than the appropriate background screening values. These inorganic chemicals are arsenic, barium, beryllium, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver, sodium, and zinc. Potential release site (PRS) data were collected from boreholes where the sampled subsurface materials included alluvium (composed predominantly of the Tshirege Member of the Bandelier Tuff), transitional material, Guaje Pumice, the Otowi Member of the Bandelier Tuff, the Puyé Formation, and fill material. Background comparisons were made between these subsurface materials and soil data collected throughout Los Alamos National Laboratory (LANL) as discussed in Section 3.2 of the RFI Report. These comparisons are appropriate for several reasons, which are summarized in Table D-1.

TABLE D-1

SUMMARY OF SITE MATERIALS SAMPLED IN BOREHOLES AND RATIONALE FOR SELECTING LANL-WIDE SOIL BACKGROUND DATA

SITE MATERIAL	RATIONALE FOR SELECTING LANL-WIDE SOIL BACKGROUND DATA FOR STATISTICAL COMPARISONS
Alluvium	Composes large percentage of material sampled; derived primarily from the Bandelier Tuff.[a]
Transitional material	No background data exist for this medium; composes very low percentage of material sampled.[a]
Guaje pumice	No background data exist for this medium; composes very low percentage of material sampled.[a]
Bandelier Tuff - Otowi Member (Qbo)	Existing background data for the Otowi are not adequate for statistical background comparisons; composes less than half of material sampled.[a]
Puyé Formation	Material sampled is actually a paleosoil; therefore, comparison with soil is appropriate.[a]
Fill material	Soil is likely to be a key component of the fill material used at these PRSs.[a]

[a] Background data for uranium was derived from literature values for the Guaje pumice.

In this appendix, the background comparison is graphically displayed with box plots. The box plots show the actual sample values by PRS for inorganic chemicals that were detected at levels greater than a relevant background screening value in at least one PRS sample. In each box plot, the ends of the box represent the inter-quartile range of the data distribution. The inter-quartile range is specified by the 25th percentile and 75th percentile of the data distribution. The line within the box plot is the median (50th percentile) of the data distribution. Thus, the box indicates concentration values for the central half of the data, and concentration shifts can be readily assessed by comparing the boxes. If the majority of the data are represented by a single concentration value (usually the detection limit), the box is reduced to a single line.

The results for each of the inorganic chemicals detected at levels greater than a relevant background screening value are discussed below. The box plots are included at the end of this appendix as Figs. D-1 through D-13. The results for each of the associated TA-10 investigation areas are presented by PRS or PRS group in Section 2.0 of this appendix.

The arsenic concentrations for the TA-10 Subsurface Aggregate PRSs are summarized in Fig. D-1. Only one of the statistical tests for arsenic is statistically significant.

The barium concentrations for the TA-10 Subsurface Aggregate PRSs are summarized in Fig. D-2. All of the PRS results for barium are within the LANL-wide soil background range, and none of the statistical tests for barium show statistically significant differences. In addition, all of the potentially elevated barium results are lower than the barium screening action level (SAL) (5 300 mg/kg).

The beryllium concentrations for the TA-10 Subsurface Aggregate PRSs are summarized in Figure D-3. Most of the PRS results for beryllium are within the LANL-wide soil background range. Given their small number, it is unlikely that the potentially elevated beryllium results are related to releases from the TA-10 Subsurface Aggregate PRSs. None of the statistical tests for beryllium are statistically significant.

The cadmium concentrations for the TA-10 Subsurface Aggregate PRSs are summarized in Fig. D-4. Most of the PRS results for cadmium are within the LANL-wide soil background range. All of the potentially elevated cadmium concentrations are from the Central Area [PRSs 10-003(a-o) and 10-007]. None of the of the statistical tests for cadmium are statistically significant. In addition, all of the potentially elevated cadmium results are lower than the cadmium SAL (38 mg/kg).

The chromium concentrations for the TA-10 Subsurface Aggregate PRSs are summarized in Fig. D-5. All of the PRS results for chromium are within the LANL-wide soil background range, and none of the of the statistical tests for chromium are statistically significant. In addition, all of the potentially elevated chromium results are lower than the total chromium SAL (210 mg/kg).

The copper concentrations for the TA-10 Subsurface Aggregate PRSs are summarized in Fig. D-6. Most of the PRS results for copper are within the LANL-wide soil background range, and none of the statistical tests for copper are statistically significant. In addition, all of the potentially elevated copper results are lower than the copper SAL (2 800 mg/kg).

The lead concentrations for the TA-10 Subsurface Aggregate PRSs are summarized in Fig. D-7. Most of the PRS results for lead are within the LANL-wide soil background range, and none of the of the statistical tests for lead are statistically significant. In addition, all of the potentially elevated lead results are lower than the lead SAL (400 mg/kg).

The manganese concentrations for the TA-10 Subsurface Aggregate PRSs are summarized in Fig. D-8. All of the PRS results for manganese are within the LANL-wide soil background range, and none of the of the statistical tests for manganese are statistically significant. Given their small number, it is unlikely that the potentially elevated manganese results are related to releases from the TA-10 Subsurface Aggregate PRSs.

The mercury concentrations for the TA-10 Subsurface Aggregate PRSs are summarized in Fig. D-9. Most of the PRS results for mercury are within the LANL-wide soil background range. All of the potentially elevated mercury concentrations are from two areas: the Central Area [PRSs 10-003(a-o) and 10-007] and the area of PRS 10-004(a). All of the potentially elevated mercury results are less than the mercury SAL (23 mg/kg).

The nickel concentrations for the TA-10 Subsurface Aggregate PRSs are summarized in Fig. D-10. All of the PRS results for nickel are within the LANL-wide soil background range. In addition, none of the potentially elevated nickel results are statistically significant.

The silver concentrations for the TA-10 Subsurface Aggregate PRSs are summarized in Fig. D-11. There are no silver background data for LANL-wide soil; therefore, the detection limit is used as the background screening value for silver in soil. All of the potentially elevated silver concentrations are from two areas: the Central Area [PRSs 10-003(a-o) and 10-007] and the area of PRS 10-004(a). All of the potentially elevated silver results are less than the silver SAL (380 mg/kg).

The sodium concentrations for the TA-10 Subsurface Aggregate PRSs are summarized in Fig. D-12. All of the PRS results for sodium are within the LANL-wide soil background range, and none of the statistical tests for sodium are statistically significant.

The zinc concentrations for the TA-10 Subsurface Aggregate PRSs are summarized in Fig. D-13. Most of the PRS results for zinc are within the LANL-wide soil background range, and none of the background comparisons are statistically significant. All of the zinc results are less than the zinc SAL (23 000 mg/kg).

2.0 PRESENTATION OF RESULTS BY PRS

Statistical analysis of the inorganic chemicals detected at levels greater than a relevant background screening value followed a two-step process. First, each inorganic result was compared to background screening values. Second, inorganic chemicals that exceeded the background screening data were statistically compared (using the Gehan, Slippage, and Quantile tests) to the LANL-wide soil background data. For rarely detected inorganics (cadmium and mercury), only the Slippage test is appropriate. For all other inorganics, Gehan, Slippage, and Quantile tests are used in tandem for statistical comparisons between PRS data and LANL-wide soil data. A statistical difference is detected by observing a statistically significant difference with two or more of these tests. The Gehan test is designed to detect significant differences in the mean rank (or median) between the PRS data and the background data subset. The Gehan statistical test is essentially equivalent to the Wilcoxon rank sum test. Details of the Wilcoxon rank sum test are presented in the guidance document, Statistical Comparisons to Background, Part I (Environmental Restoration Project Assessments Council 1995, 1218). The only difference between the Wilcoxon rank sum test and the Gehan test is that the Gehan test uses a statistically robust method for nondetects. The Slippage and Quantile tests determine if there is a difference between the highest background and PRS results.

Statistical significance of the tests is evaluated by the probability value (p-value) associated with the test. The p-value is the probability that the PRS data are greater than the background data subset. A p-value of 0.05 (5% probability) is used as a cutoff for statistical significance. If the p-value is less than 0.05, the PRS data are classified as statistically elevated relative to the background data subset. If the p-value is greater than or equal to 0.05, the PRS data are classified as statistically not different from the background subset.

Tables D-2 through D-6 summarize the statistical comparisons of PRS data to the LANL-wide soil data. There are only two probability values that met the requirement for statistical significance. The first is the Slippage test result for mercury for PRS 10-004(a). Because only

the Slippage test is appropriate for mercury due to a high frequency of nondetects in the background data, mercury was considered to exceed background by the Slippage test result. The second result of statistical significance was the Slippage test result for arsenic for PRS 10-004(b). Because there are highly nonsignificant results for the Gehan and Quantile tests (probabilities approaching unity), arsenic was not considered to exceed background based on this Slippage test result.

TABLE D-2

SUMMARY OF STATISTICAL TEST P-VALUES FOR PRS 10-002(b) COMPARISONS TO SOIL BACKGROUND DATA

CHEMICAL	GEHAN TEST	SLIPPAGE TEST	QUANTILE TEST
Copper	1.000	0.298	0.995
Zinc	1.000	1.000	0.988

TABLE D-3

SUMMARY OF STATISTICAL TEST P-VALUES FOR PRSs 10-003(a-o), 10-007 COMPARISONS TO SOIL BACKGROUND DATA

CHEMICAL	GEHAN TEST	SLIPPAGE TEST	QUANTILE TEST
Arsenic	1.000	1.000	1.000
Barium	1.000	1.000	1.000
Beryllium	1.000	0.592	0.098
Cadmium	NA	0.312	NA
Chromium	1.000	1.000	1.000
Copper	1.000	0.070	1.000
Lead	1.000	0.207	1.000
Manganese	1.000	1.000	1.000
Mercury	NA	0.101	NA
Nickel	1.000	1.000	1.000
Sodium	1.000	1.000	1.000
Silver	ND	ND	ND
Zinc	1.000	0.353	0.999

NA = There are not sufficient background data for this statistical test.
ND = No background data are available for statistical comparisons.

ARE TABLE D-4

SUMMARY OF STATISTICAL TEST P-VALUES FOR PRS 10-004(a) COMPARISONS TO SOIL BACKGROUND DATA

CHEMICAL	GEHAN TEST	SLIPPAGE TEST	QUANTILE TEST
Beryllium	1.000	0.171	1.000
Lead	1.000	1.000	1.000
Mercury	NA	**<0.001**	NA
Silver	ND	ND	ND
Zinc	0.999	1.000	0.764

NA = There are not sufficient background data for this statistical test.
ND = No background data are available for statistical comparisons.
P-values in bold are less than 0.05, meaning the PRS data are statistically elevated relative to the background data subset.

TABLE D-5

SUMMARY OF STATISTICAL TEST P-VALUES FOR PRS 10-004(b) COMPARISONS TO SOIL BACKGROUND DATA

CHEMICAL	GEHAN TEST	SLIPPAGE TEST	QUANTILE TEST
Arsenic	1.000	**0.001**	0.957

P-values in bold are less than 0.05, meaning the PRS data are statistically elevated relative to the background data subset.

TABLE D-6

SUMMARY OF STATISTICAL TEST P-VALUES FOR PRS 10-005 COMPARISONS TO SOIL BACKGROUND DATA

CHEMICAL	GEHAN TEST	SLIPPAGE TEST	QUANTILE TEST
Barium	1.000	1.000	0.993

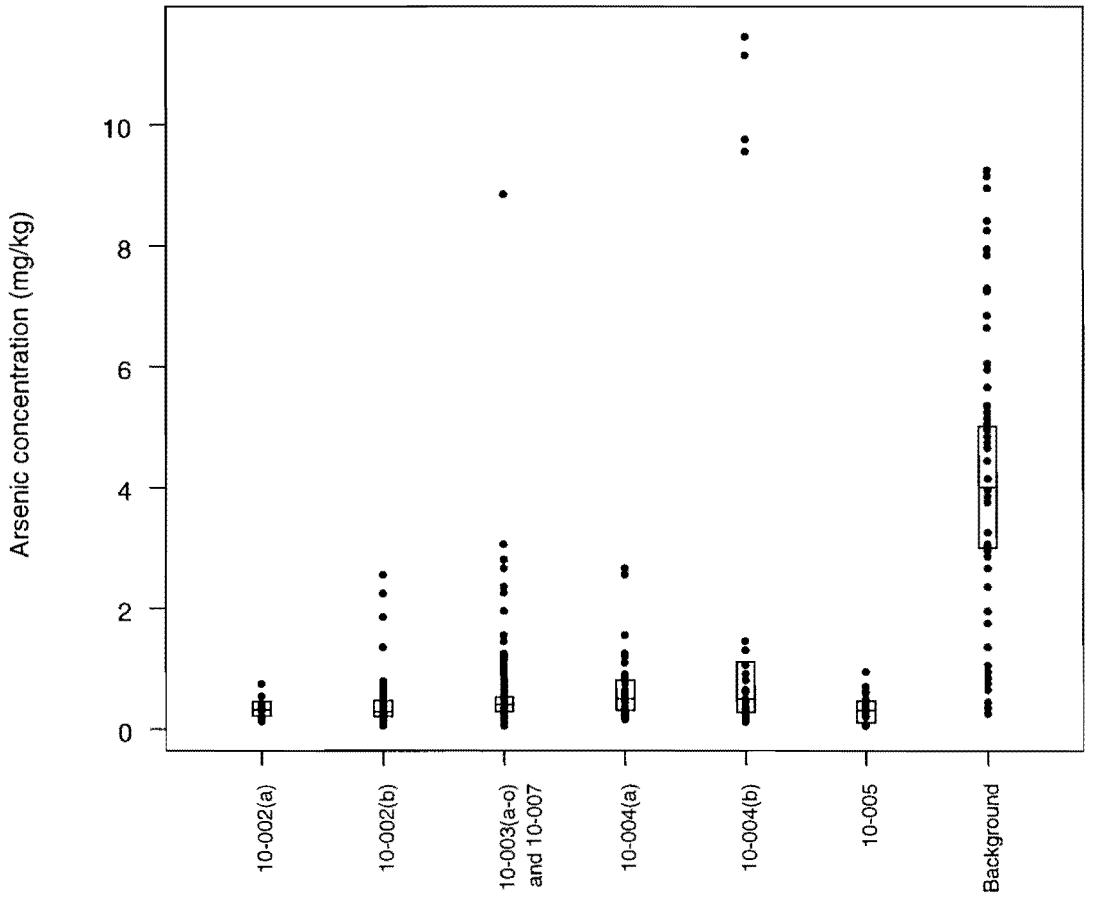

Fig. D-1. Comparison of PRS arsenic results to LANL background subsets.

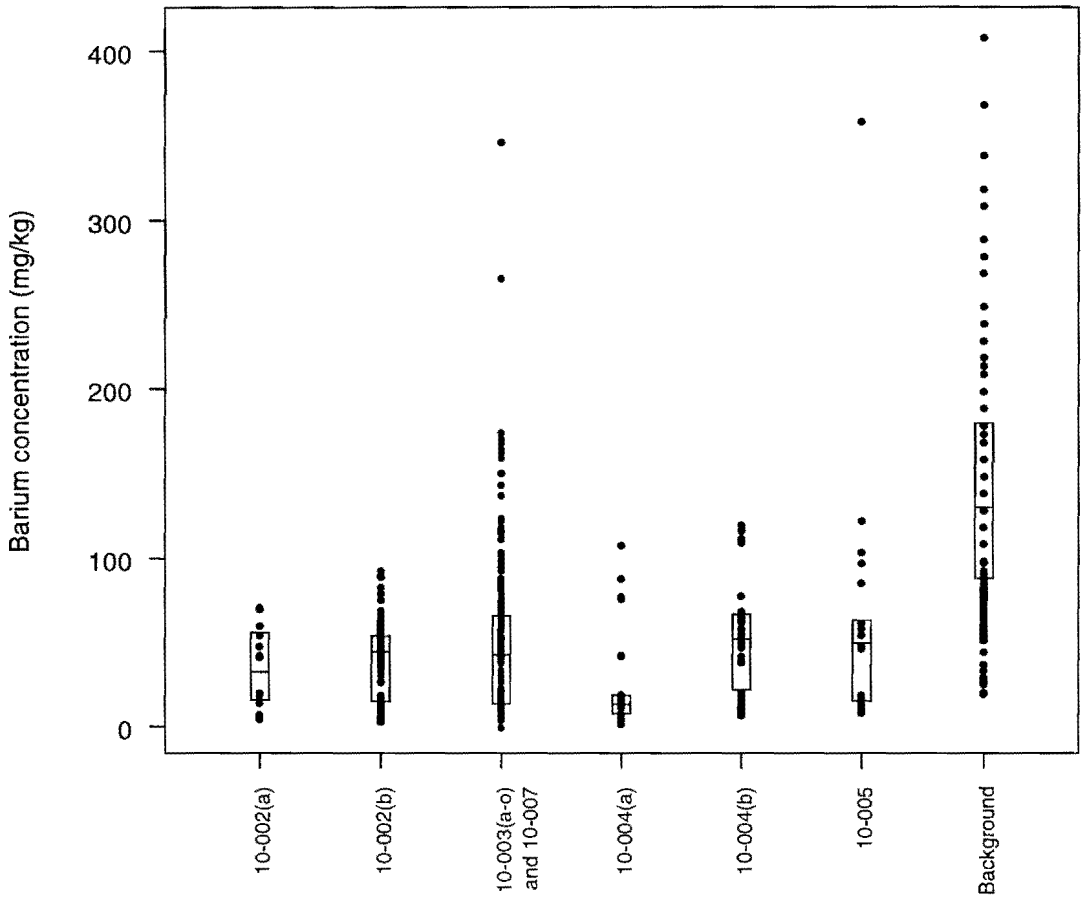

Fig. D-2. Comparison of PRS barium results to LANL background subsets.

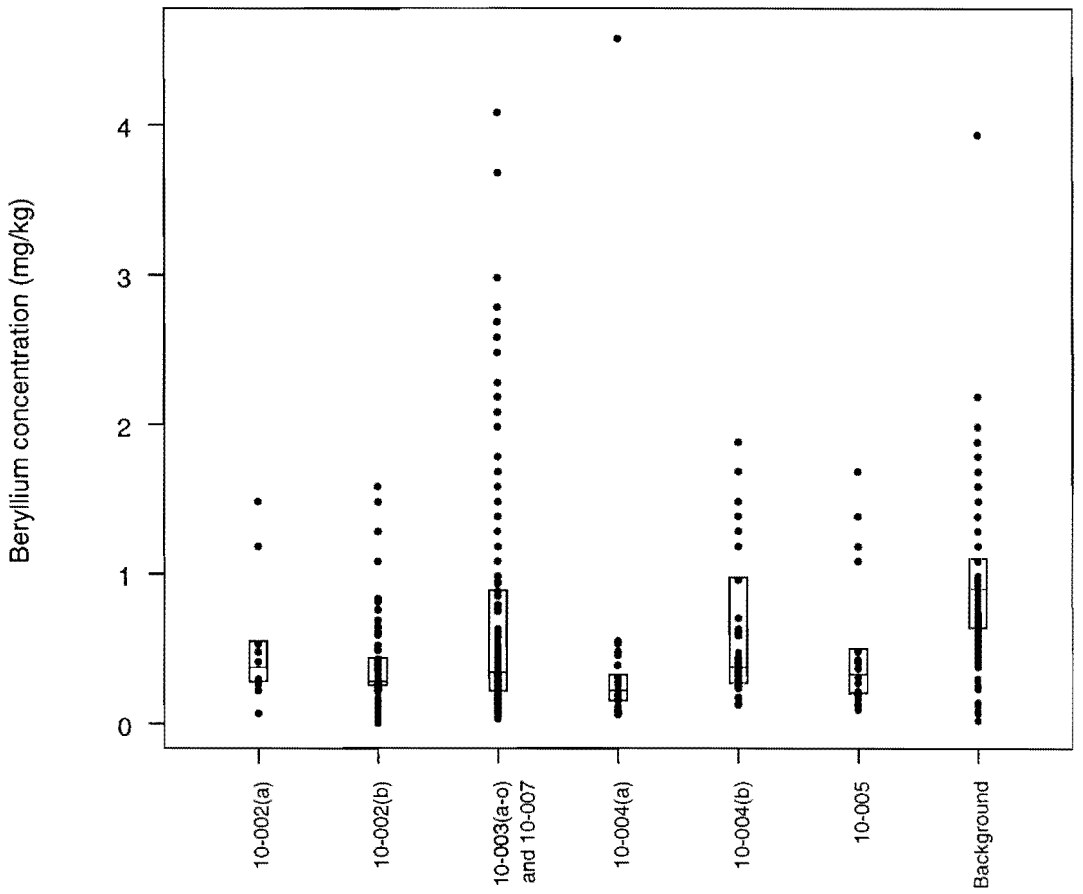

Fig. D-3. Comparison of PRS beryllium results to LANL background subsets.

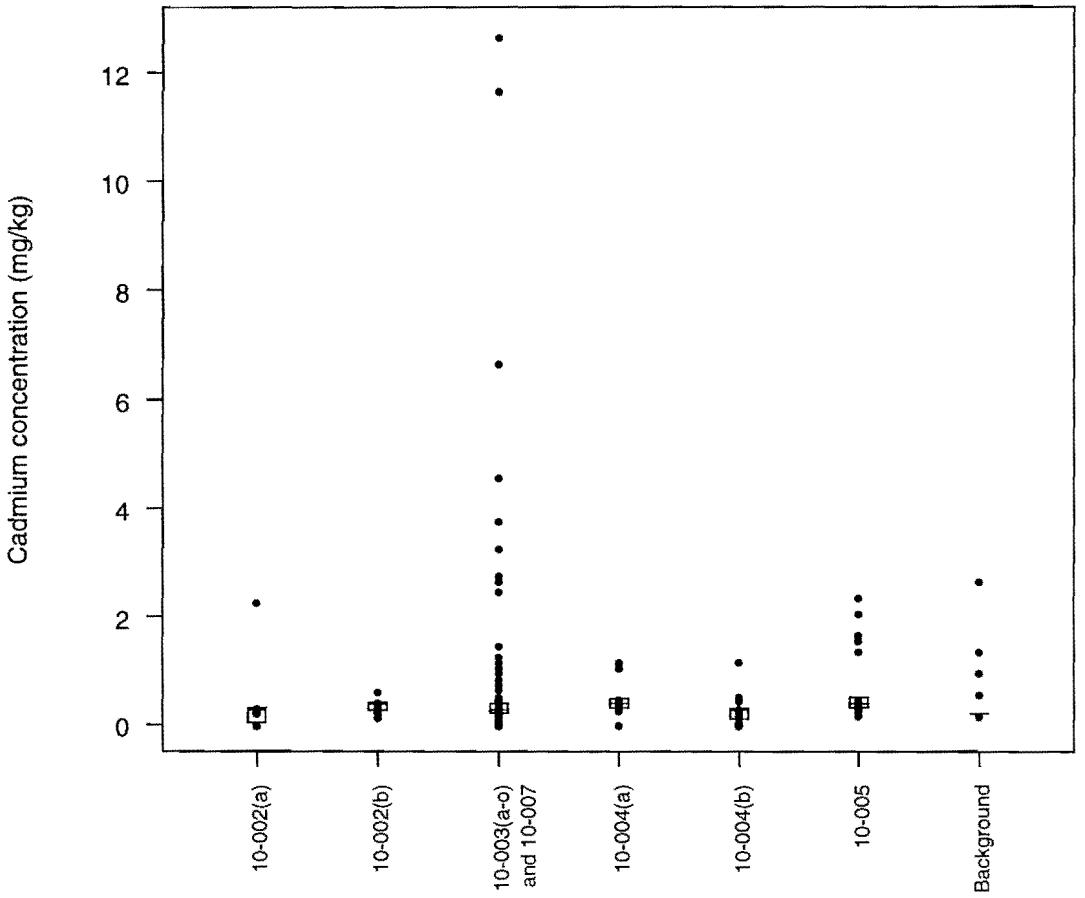

Fig. D-4. Comparison of PRS cadmium results to LANL background subsets.

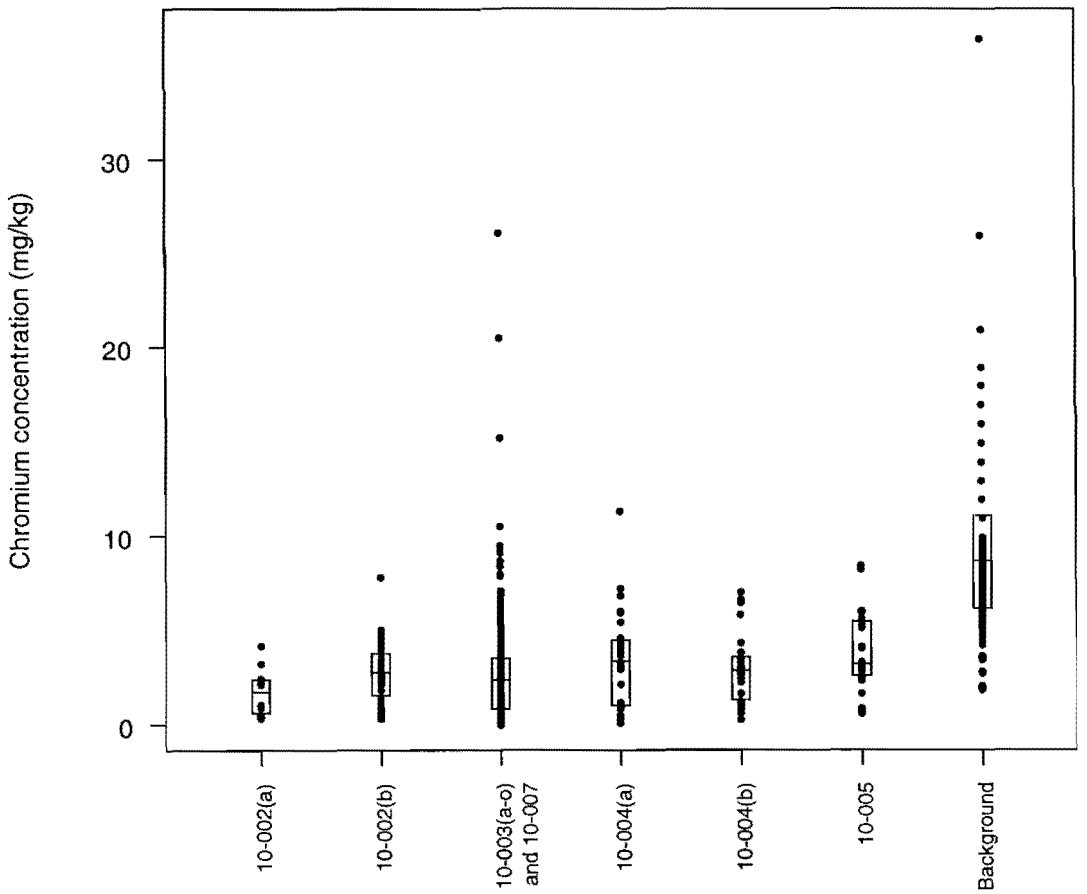

Fig. D-5. Comparison of PRS chromium results to LANL background subsets.

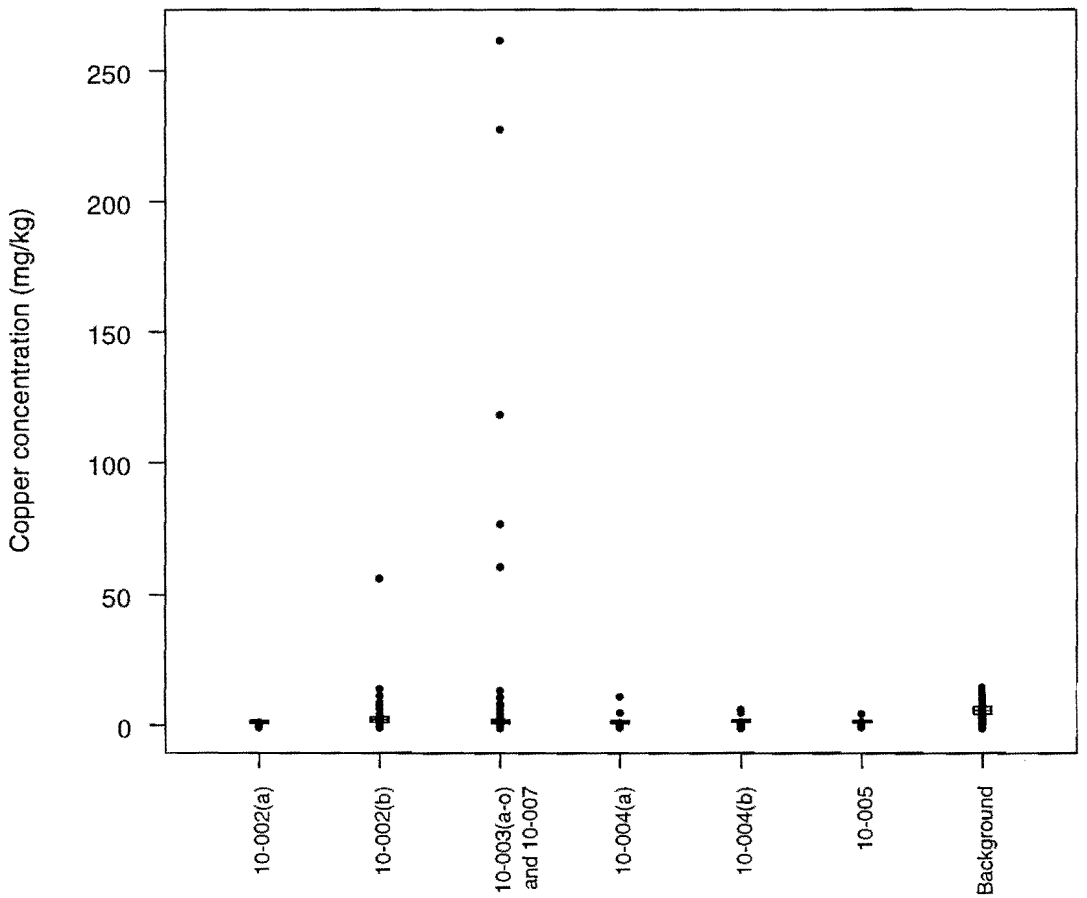

Fig. D-6. Comparison of PRS copper results to LANL background subsets.

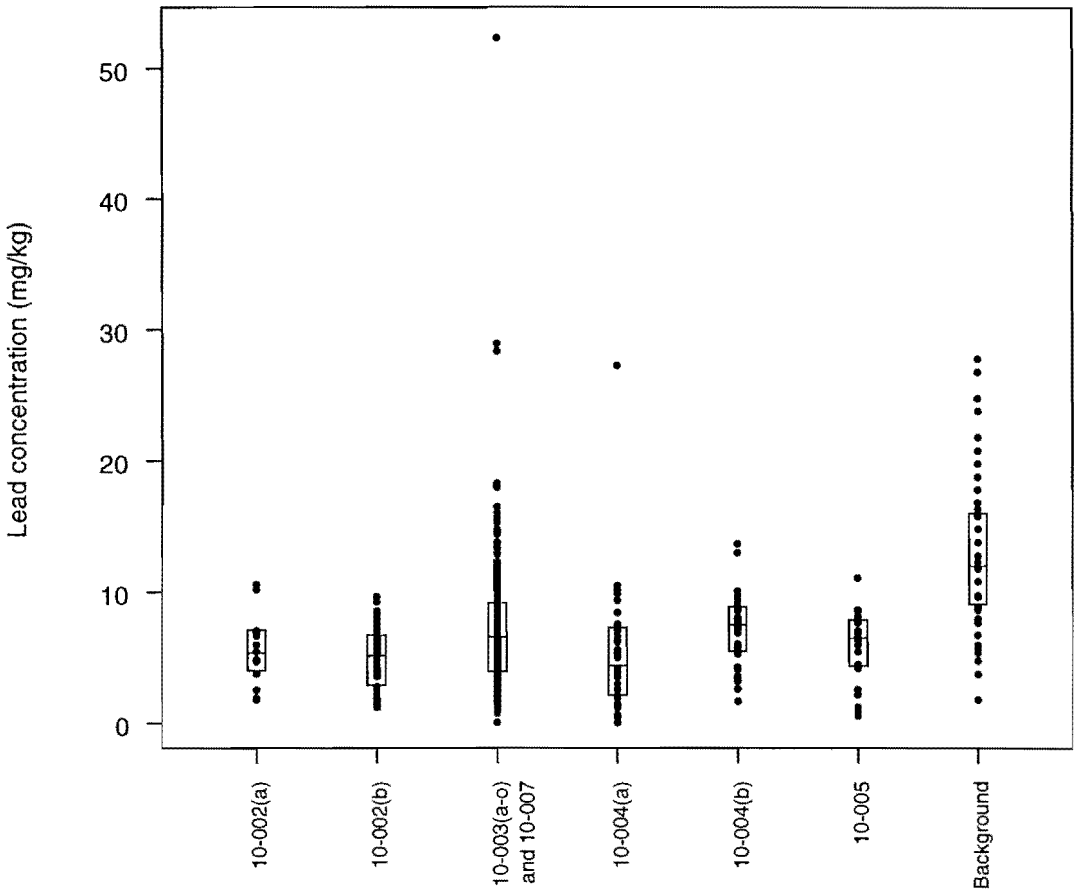

Fig. D-7. Comparison of PRS lead results to LANL background subsets.

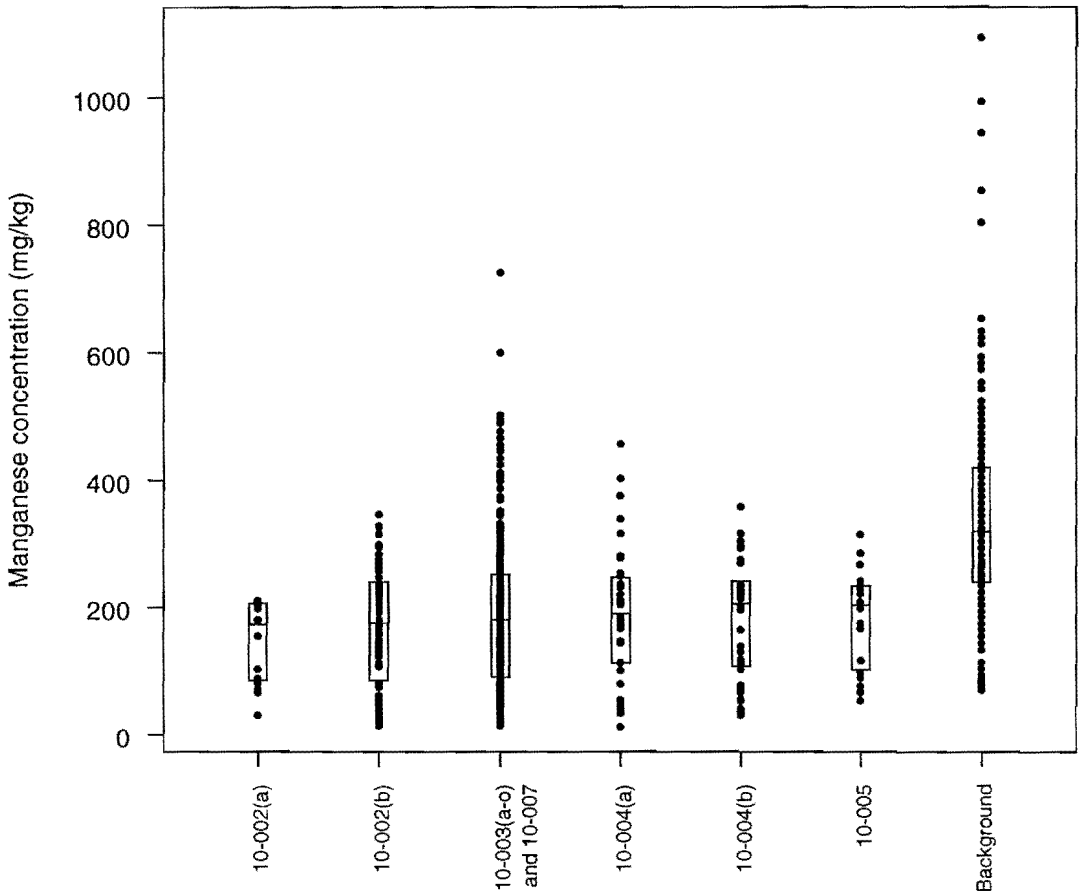

Fig. D-8. Comparison of PRS manganese results to LANL background subsets.

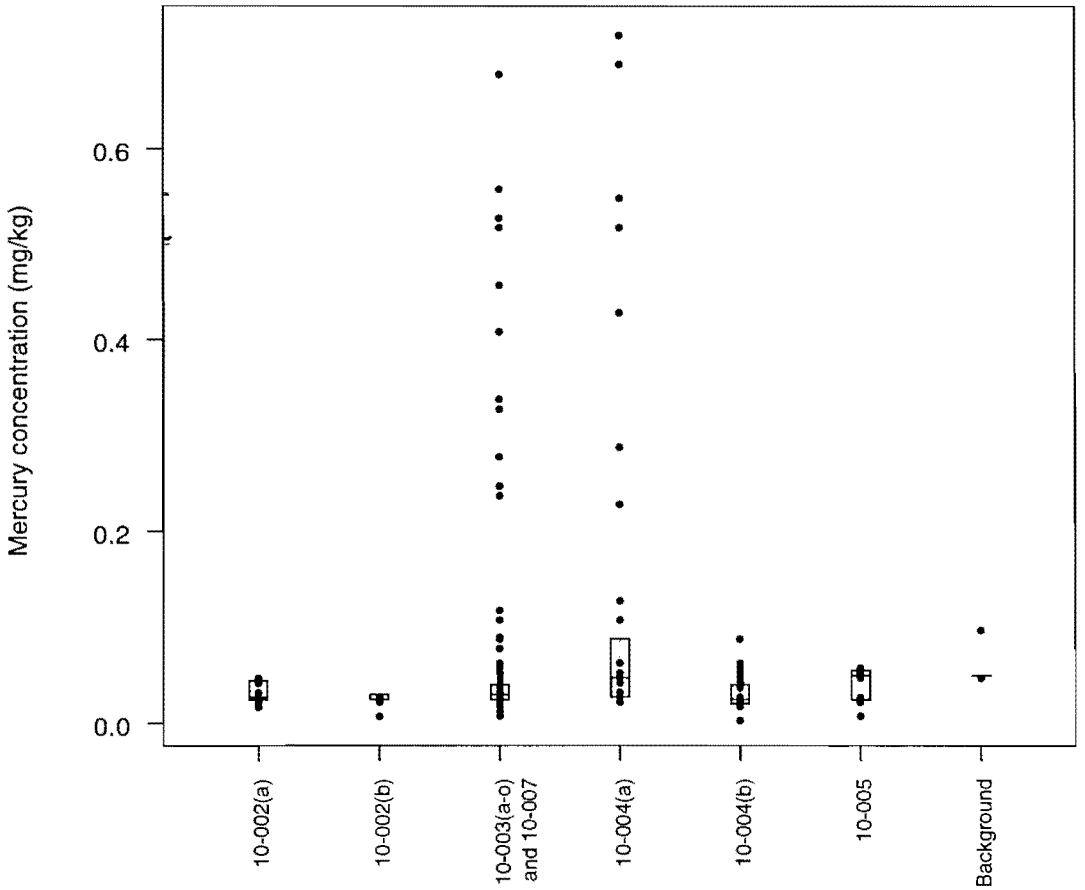

Fig. D-9. Comparison of PRS mercury results to LANL background subsets.

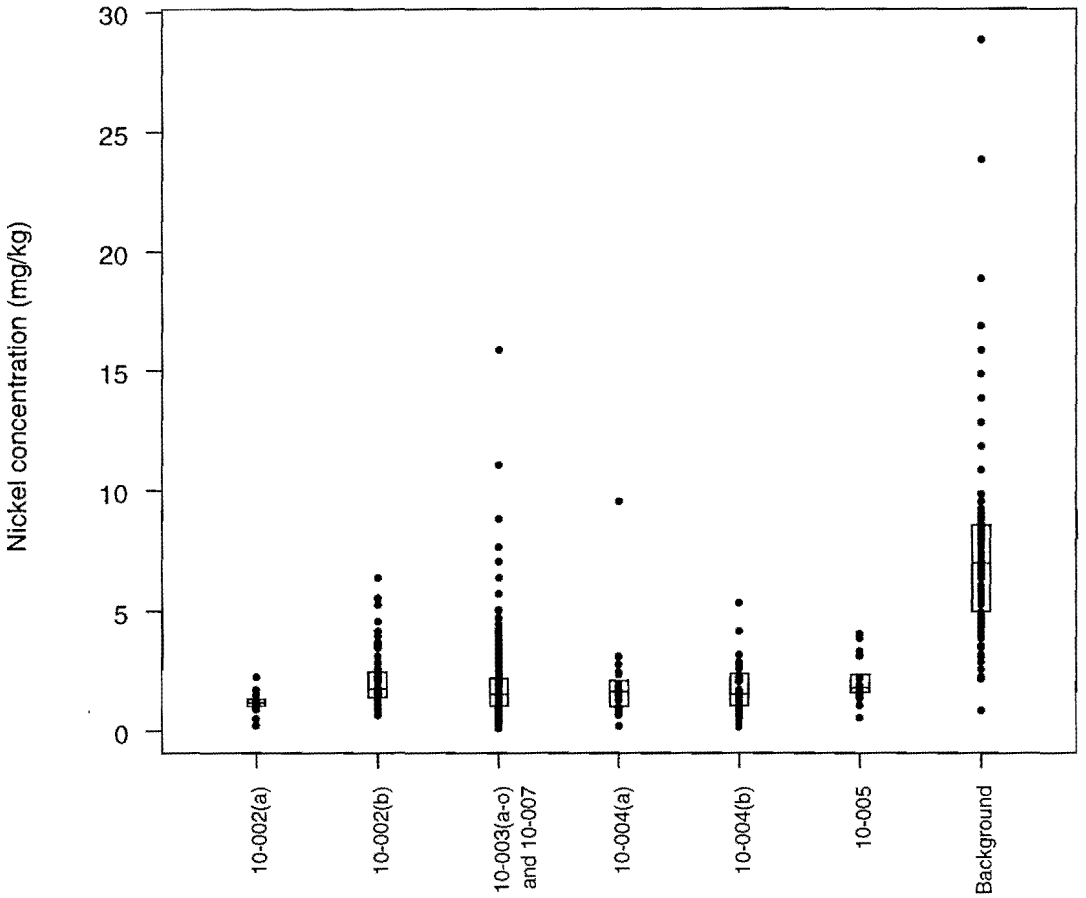

Fig. D-10. Comparison of PRS nickel results to LANL background subsets.

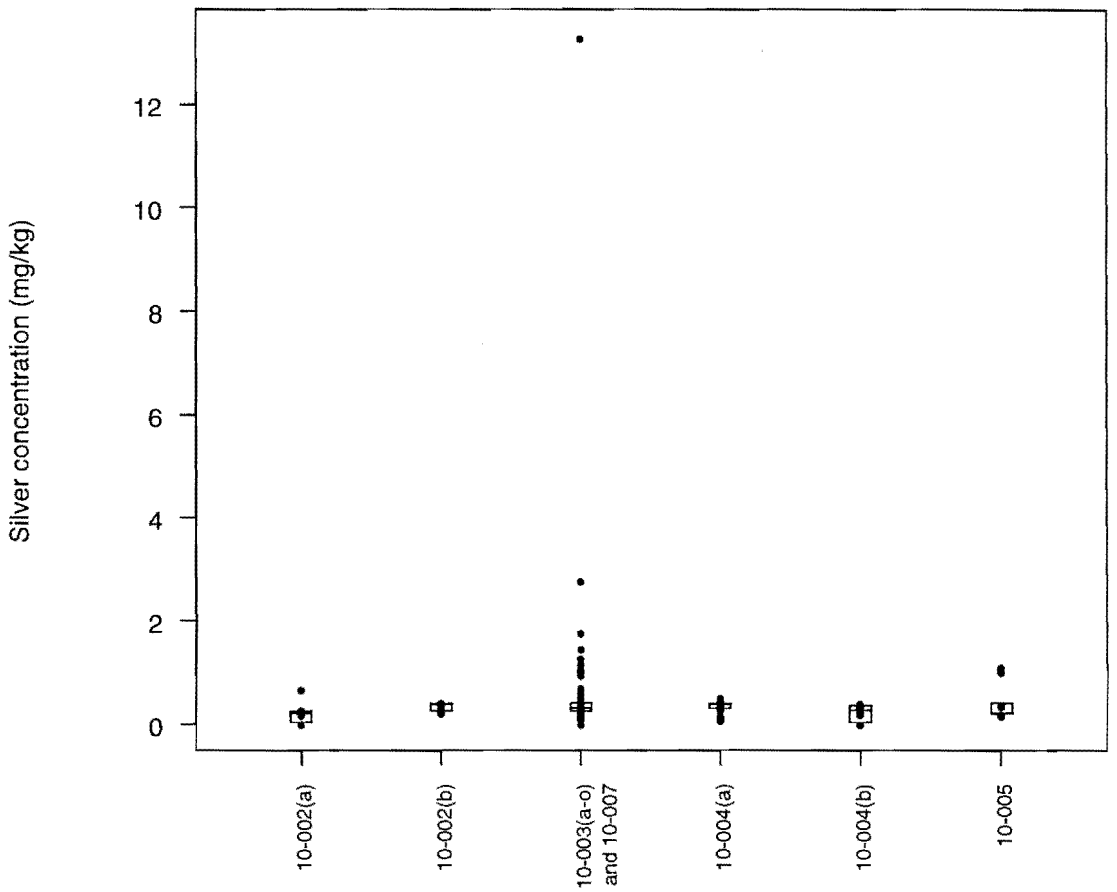

Fig. D-11. Comparison of PRS silver results. There are no LANL soil background data for silver.

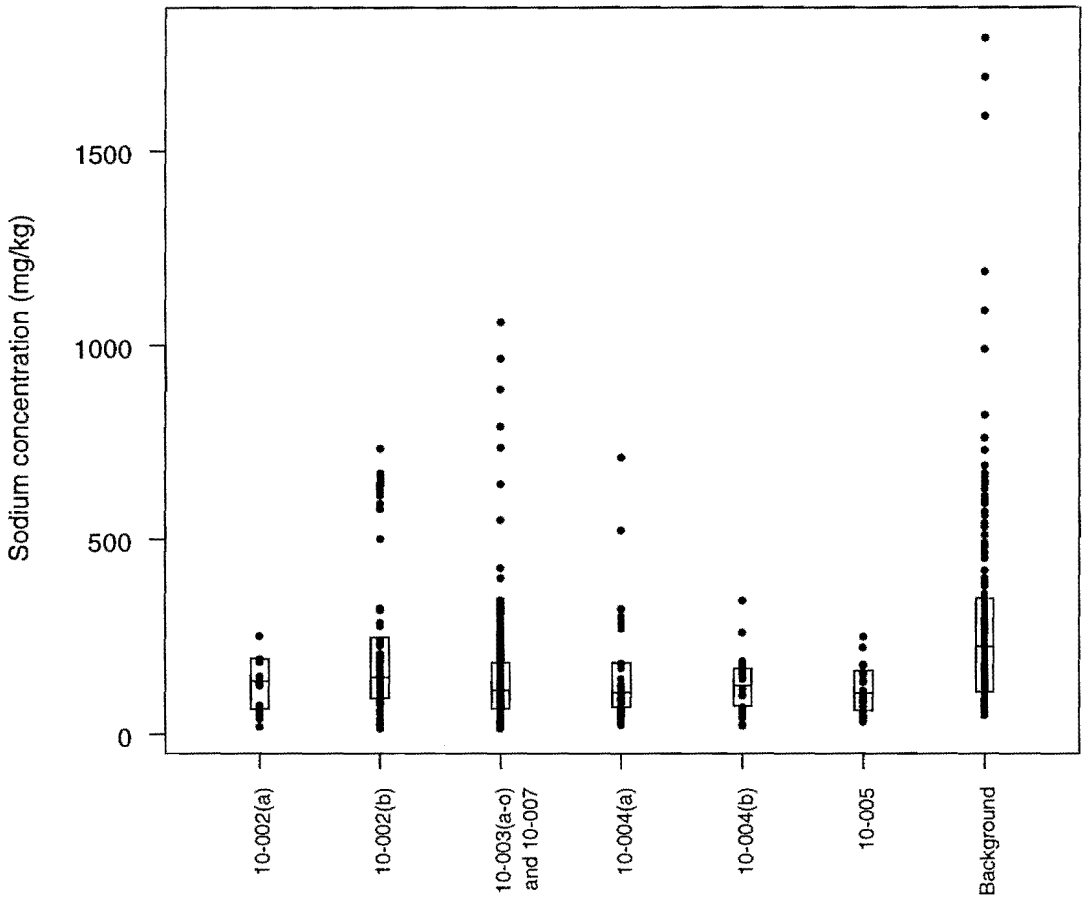

Fig. D-12. Comparison of PRS sodium results to LANL background subsets.

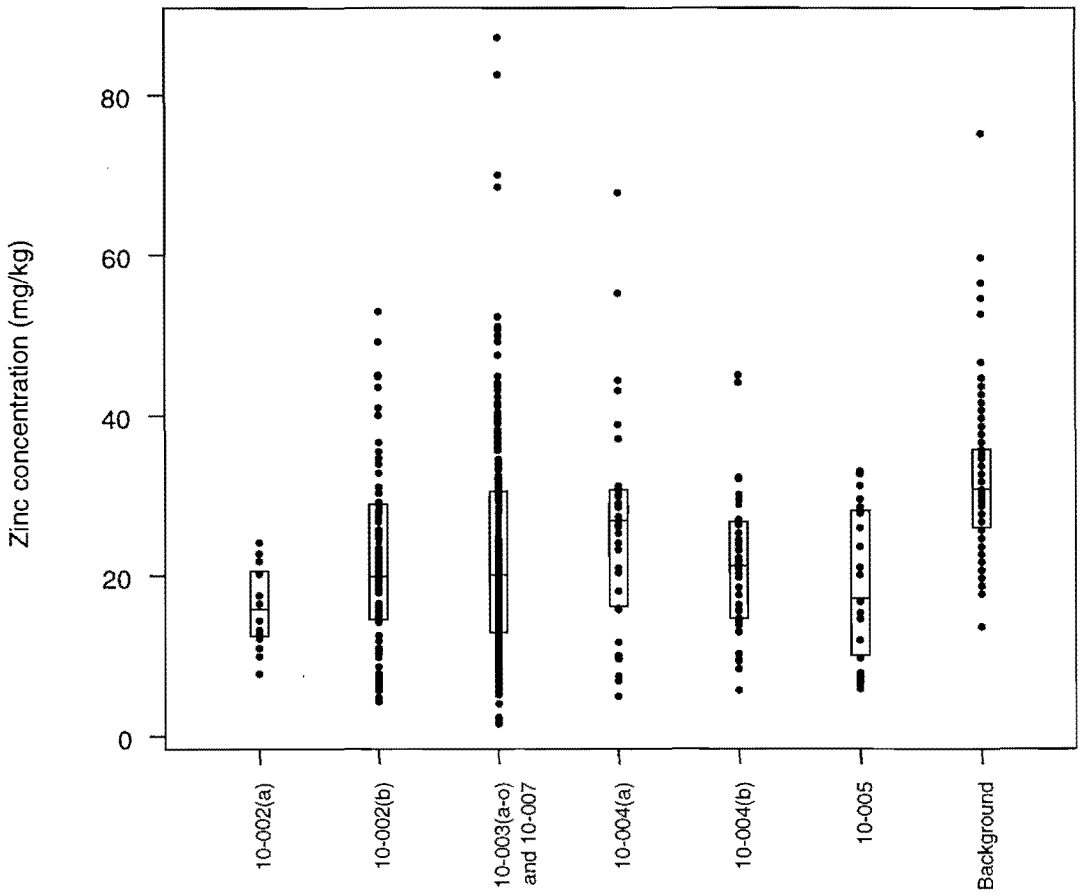

Fig. D-13. Comparison of PRS zinc results to LANL background subsets.

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