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Investigation Report for Material Disposal Area G, Consolidated Unit 54-013(b)-99, at Technical Area 54

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Prepared by
Environmental Stewardship Division–
Environmental Remediation and Surveillance Program

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EXECUTIVE SUMMARY

This investigation report describes the results of the 2005 field investigation proposed in the investigation work plan for Material Disposal Area (MDA) G and approved with modifications by the New Mexico Environment Department. This investigation report also presents an assessment of the nature and extent of contamination and the potential present-day risks to human health and the environment associated with MDA G based on the results of investigations conducted from 1986 through August 2005.

The objectives of the 2005 investigation were to complete the determination of the nature and extent of releases of hazardous waste constituents and/or radionuclides identified during the 1993 through 1995 Phase I Resource Conservation and Recovery Act facility investigation (RFI) and to collect additional information on the hydrogeologic properties and other physical characteristics of the vadose zone beneath MDA G.

In total, 39 boreholes were drilled alongside MDA G disposal units. Thirty-seven boreholes were drilled using a hollow-stem auger rig either to refusal or to the target depth specified in the approved work plan. Boreholes 38 and 39 were drilled to a depth of 556 and 700 ft, respectively, with an air-rotary rig to determine whether perched water was present. The 38th borehole was abandoned at 556 ft when drilling problems prevented the target depth of 700 ft from being reached, thus requiring a 39th borehole to be drilled at an adjacent location to a depth of 700 ft.

Continuous core was collected in the 37 shallow boreholes to characterize the stratigraphy beneath the site, and samples were collected and analyzed for target analyte list metals, cyanide, nitrates, explosive compounds, dioxins, furans, perchlorate, volatile organic compounds (VOCs), and radionuclides. The sampling also focused on fracture characterization. Samples of fracture fill and surrounding intact tuff were collected when substantial fractures were encountered. Finally, geotechnical and geochemical samples were collected from the deep boreholes to measure chloride-ion concentration, matric potential, and moisture content. Moisture content and matric potential samples were collected every 5 ft; samples for chloride analysis were collected every 10 ft from recovered core. Pore-gas samples for tritium and VOCs were collected to evaluate the nature and extent of vapor-phase VOCs and tritium in pore water beneath MDA G.

The results of soil and rock sample analyses detected a number of organic and inorganic chemicals at trace levels beneath the former disposal units and were generally consistent with the results obtained during the Phase I RFI. The only organic chemicals detected in core samples were trace levels of several dioxin and furan congeners. Inorganic chemicals detected above background levels did not show any discernable patterns or trends and did not indicate a release from any of the historical waste units at MDA G.

A number of naturally occurring and anthropogenic radionuclides were detected or detected above background values in soil and rock samples from beneath MDA G. Anthropogenic radionuclides detected included americium-241, plutonium-238, plutonium-239, and strontium-90. These detections were generally sporadic across the site. Naturally occurring radionuclides detected above background values included thorium isotopes, uranium-234, uranium-235, and uranium 238. Naturally occurring radionuclides were detected at concentrations within the natural variability of these chemicals in the subsurface.

The analytical results from pore-gas samples collected from 38 of the 39 boreholes in 2005 confirmed the presence of VOCs (consisting primarily of chlorinated VOCs) in the vadose zone beneath MDA G. Data collected during the Phase I RFI, quarterly monitoring, and the 2005 investigation indicate the highest VOC concentrations are beneath the eastern and south-central portions of MDA G and are limited at

depth by the Cerros del Rio Basalt. The dominant subsurface vapor contaminant is 1,1,1-trichloroethane. Tritium was detected in pore-gas samples collected from 35 of the 38 boreholes sampled. The highest concentrations were detected in samples from locations in the eastern and south-central portions of MDA G, coinciding with the highest vapor concentrations of VOCs.

Subsurface samples collected to evaluate moisture content and geophysical logging did not identify perched water zones to a depth of 700 ft beneath MDA G. Gravimetric moisture analyses showed moisture levels ranging from 0.2% to 27.2% moisture by weight with all samples except one showing moisture levels less than, or equal to, 11.2%. Laboratory matric potential readings confirmed that all samples collected beneath MDA G contained moisture levels below saturation. Perched groundwater was not detected in any of the 39 boreholes, including the borehole completed to a depth of 700 ft.

Data gathered during the Phase I RFI, quarterly monitoring events, and the approved investigation work plan activities have characterized the nature and extent of contamination in surface and subsurface media. Results from the human health and ecological assessments show that MDA G poses no unacceptable present-day risk to human health and the environment.

Based on the results of the Phase I RFI, quarterly pore-gas monitoring, and the 2005 investigation sampling, no additional data are needed to characterize the nature and extent of contaminant releases at MDA G. The pore-gas sampling data indicate that the existing subsurface vapor-monitoring network is adequate, although several locations were identified for construction of additional vapor-monitoring wells. Therefore, the investigation report makes the following recommendations:

- complete a corrective measures evaluation to ensure that future releases from the site pose no unacceptable risks to human and ecological receptors, and
- monitor subsurface vapor beneath MDA G in accordance with a long-term monitoring plan to be approved by the New Mexico Environment Department.

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1.0 INTRODUCTION

Los Alamos National Laboratory (LANL or the Laboratory) is a multidisciplinary research facility owned by the U.S. Department of Energy (DOE) and managed by the University of California (UC). The Laboratory is located in north-central New Mexico, approximately 60 mi northeast of Albuquerque and 20 mi northwest of Santa Fe. The Laboratory site covers 40 mi^2 of the Pajarito Plateau, which consists of a series of finger-like mesas separated by deep canyons containing perennial and intermittent streams running from west to east. Mesa tops range in elevation from approximately 6200 ft to 7800 ft above sea level (asl).

The Laboratory's Environmental Stewardship Division–Environmental Remediation and Surveillance (ENV-ERS) Program is participating in a national effort by DOE to clean up sites and facilities formerly involved in weapons research and production. The goal of ENV-ERS is to ensure that past operations at the Laboratory do not threaten human or environmental health and safety in and around Los Alamos County, New Mexico. To achieve this goal, ENV-ERS is currently investigating sites potentially contaminated by past Laboratory operations. The sites under investigation are either solid waste management units (SWMUs) or areas of concern (AOCs). This report describes the investigation undertaken at Material Disposal Area (MDA) G to fulfill the requirements of Section IV.C.1.c of the March 1, 2005, Compliance Order on Consent (hereafter, the Consent Order) signed by the New Mexico Environment Department (NMED), DOE, and UC.

Historically, MDA G at Technical Area (TA) 54, also referred to as Consolidated Unit 54-013(b)-99, was used for the disposal of low-level radioactive waste (LLW), certain radioactively contaminated infectious waste, asbestos-contaminated material, and polychlorinated biphenyls (PCBs). It was also used for the retrievable storage of transuranic (TRU) waste. On November 5, 2004, NMED approved the MDA G investigation work plan (hereafter, the approved work plan) with modifications (NMED 2004, 89371) to finalize the environmental characterization of the site. The Laboratory incorporated NMED's comments and issued a revised work plan on December 1, 2004 (LANL 2004, 87833). Implementation of the approved work plan meets the requirements for investigating MDA G contained in Section IV.C.1.c of the Consent Order. Thirty-nine boreholes were drilled alongside subsurface pits, shafts, and trenches, and numerous subsurface samples were collected and analyzed for organic chemicals, inorganic chemicals, and radionuclides. The locations of the subsurface SWMUs were determined by analyzing data from two global positioning system (GPS) surveys, one conducted in 1994 by Johnson Controls, Inc., and another in 1998 by the Laboratory (LANL 2003, 75908), and by reviewing as-built drawings (LASL, LANL 1977–1989, 76099). The shafts and the corners of the disposal pits and trenches were surveyed in 1994.

This investigation report (IR) has been written according to the requirements described in the Consent Order, Appendix XI, Reporting Requirements. This IR assesses the nature and extent of contamination based upon a review of analytical laboratory results from samples collected at the site. It also assesses the potential present-day risks/doses to human health and the environment associated with MDA G based on the results of field investigations conducted from 1986 through August 2005.

Appendix A includes a list of acronyms and defines the terms and the data qualifiers used in this report. Appendix B summarizes the field methods used during the site investigations. Appendix C includes logs for the 39 boreholes drilled for this investigation, along with downhole geophysical survey results. Appendix D provides a description of the quality assurance (QA)/quality control (QC) program. Appendix E contains analytical results, the chain-of-custody forms, and the data validation reports. Appendix F is a review of the analytical data. Appendix G contains the ecological and human health risk assessments for MDA G. Appendix H includes the ecological scoping checklist and surface water assessment. Appendix I presents the long-term subsurface vapor monitoring plan for MDA G. Appendix J documents the management of investigation-derived waste (IDW). Appendix K presents a report evaluating sediment data from canyon reaches downgradient of MDA G.

2.0 BACKGROUND

MDA G is located in the east-central portion of the Laboratory at TA-54, Area G, on Mesita del Buey (Figure 2.0-1). MDA G consists of inactive subsurface units that include 32 pits, 194 shafts, and 4 trenches with depths ranging from 10 to 65 ft below the original ground surface (Figure 2.0-2). The pits, trenches, and shafts are constructed in unit 2 (caprock) and unit 1 (subsurface) of the Tshirege Member of the Bandelier Tuff (consolidated tuff units). The regional aquifer is estimated to be at an average depth of approximately 930 ft below ground surface (bgs) at MDA G, based on data from wells in the vicinity of the area and the predictions of the hydrogeologic conceptual model for the Pajarito Plateau (LANL 1998, 59599). The topography of Area G is relatively flat. Portions of the disposal units at MDA G are covered with concrete to house ongoing waste-management activities conducted at area G; surface runoff from the site is controlled and discharges into drainages to the north (towards Cañada del Buey) and the south (towards Pajarito Canyon). Storm water and sediment monitoring stations are distributed throughout the surface of Area G and in drainages leading to the canyons. The inactive subsurface disposal units and the existing surface structures used for current waste-management activities are shown in Figure 2.0-2.

The depth of the inactive disposal units, described in the approved Resource Conservation and Recovery Act (RCRA) facility investigation (RFI) work plan for Operable Unit (OU) 1148 (LANL 1992, 07669), is based on historical records. The subsequent placement of the cover material over the disposal units has increased elevations across the site. At the time of excavation, the elevation of the disposal units was estimated from the tuff/soil interface identified in the Phase I RFI borehole logs (LANL 1996, 54462).

MDA G is located in an industrial area within TA-54. The Laboratory does not anticipate land use at TA-54 will change from industrial in the foreseeable future. Public access to the site is restricted by fencing and locked gates, and entry onto Pajarito Road is restricted to Laboratory employees and authorized contractor personnel. Under present-day conditions, only Laboratory employees or contractors may enter Area G for site-management activities (e.g., installing best management practices, conducting waste-management operations, or performing environmental sampling).

2.1 Site History

During the 1950s, the Laboratory, with approval of the U.S. Atomic Energy Commission and upon the recommendation of the U.S. Geological Survey, selected Mesita del Buey within TA-54 for underground disposal of Laboratory-derived waste (Rogers 1977, 05707; Rogers 1977, 05708, p. G-1). Since then, the main waste storage and disposal facilities for the Laboratory have been located at TA-54. MDA G is one of four MDAs on Mesita del Buey between Pajarito Canyon (south) and Cañada del Buey (north) (Figure 2.1-1).

MDA G is a decommissioned (i.e., removed from service) subsurface site established for disposition of LLW, certain radioactively contaminated infectious waste, asbestos-contaminated material, and PCBs. It was also used for the retrievable storage of TRU waste. MDA G began operations in 1957. The operational history of MDA G is summarized in the approved RFI work plan for OU 1148 (LANL 1992, 07669, pp. 5-179 to 5-200) and in Appendix B, the historical investigation report (HIR), of the approved work plan for MDA G (LANL 2004, 87833). Furthermore, the performance assessment and composite analysis report (LANL 1997, 63131) and the safety analysis report for Area G (LANL 1995, 63300) present additional information on MDA G.

At MDA G, 32 pits, 194 shafts, and 4 trenches were excavated into the overlying soil in unit 2 (caprock) and unit 1 (subsurface) of the Tshirege Member of the Bandelier Tuff. The pits, shafts, and trenches were unlined. Summaries of operational periods and wastes received by each pit, trench, and shaft are presented in Tables 2.1-1 through 2.1-3. During operation (i.e., when waste was being received), the pits and trenches remained open to the atmosphere. When active the shafts remained covered and locked with steel lids for safety and security. When operations ceased the remaining capacity of the pits, shafts, and trenches was backfilled with clean, crushed, compacted tuff and closed. The disposal shafts were then capped with a concrete plug (LANL 1992, 07669, p. 5-179).

2.2 Results of Previous Investigations

2.2.1 Pre-RFI Investigations

On May 7, 1985, the Laboratory received a Compliance Order from the New Mexico Environmental Improvement Division (NMEID, now NMED) that addressed numerous waste management issues at the Laboratory (NMEID 1985, 75885). The 1985 Order specified the following six tasks involving site-investigation activities in and around Area G:

- Task 1: Measure the intrinsic permeability of the tuff
- Task 2: Determine the soil-moisture characteristic curves
- Task 3: Determine the unsaturated hydraulic conductivity of the Bandelier Tuff
- Task 4: Analyze the infiltration and redistribution of meteoric water into the tuff
- Task 5: Characterize core and pore gas in the vadose zone
- Task 6: Determine if perched water exists beneath MDA G

The results and outcomes of these six tasks are described in a hydrogeologic assessment of Areas G and L in TA-54 (LANL 1987, 76068, pp. 6-2–6-7), submitted to NMEID in 1987 in response to the 1985 Compliance Order Schedule.

2.2.2 Phase I RFI Investigations

In 1993, 1994, and 1995, ambient-air, channel-sediment, and subsurface-core samples were collected during a Phase I RFI. In addition, quarterly pore-gas samples have been collected since 1985. The results of these previous investigations, which were reported in the HIR of the approved work plan for MDA G (LANL 2004, 87833, pp. B-5–B-18), are summarized in the following sections.

Sampling and Analysis of 1994 Sediment Samples

Phase I RFI channel sediment sampling was conducted at MDA G in July 1994. A total of 113 channel sediment samples were collected from drainages leading from Area G (LANL 1996, 54462) from depths between 0 in. and 10 in. using stainless steel trowels. Sediment samples were collected from seven to ten locations in each of the Area G drainages (Figure 2.2-1). All samples were field-screened by the Laboratory's mobile radiological analysis laboratory. Screening was used to identify 59 samples to be submitted to an off-site contract laboratory for analysis, including 4 samples from each of the drainage channels. These samples were analyzed for inorganic chemicals (target analyte list [TAL] metals and cyanide), organic chemicals (PCBs and pesticides), radionuclides (by gamma spectroscopy), americium-241, tritium, isotopic thorium, strontium-90, isotopic uranium, and isotopic plutonium (LANL 1996, 54462).

Channel sediments contained low concentrations of methoxychlor. Americium-241, cesium-137, cobalt-60, plutonium-238, plutonium-239, and tritium were detected at concentrations greater than their respective background values (BVs) in channel sediments (Figures 2.2 -2 and 2.2-3; Table 2.2-1). Cobalt, selenium, and silver were not detected; however, the detection limits (DLs) for some samples were elevated above BVs (Table 2.2-2). Barium, cadmium, chromium, copper, mercury, and iron were detected above BVs. The extent of contamination in channel sediments was not defined.

Sampling and Analysis of Core Samples, 1993 through 1995

Between September 1993 and May 1995, 156 core samples were collected from 10 vertical and 10 angled boreholes drilled near MDA G disposal units (Figure 2.2-4) (LANL 2004, 87833, p. B-30) and submitted to an off-site contract laboratory for analysis. The depth intervals for sample collection and analytical suites varied by borehole and ranged from 38.5 ft to 153 ft bgs.

A review and an analysis of radionuclides in tuff beneath the pits, trenches, and shafts indicate infrequent detections of radionuclides below the disposal units. Radionuclides detected in tuff samples at MDA G include americium-241, cesium-137, cobalt-60, europium-152, plutonium-238, plutonium-239, strontium-90, thorium-230, uranium-234, uranium-235, and uranium-238 (Figure 2.2-5; Table 2.2-3). The Phase I RFI data do not indicate a release of radionuclides from the disposal units because no pattern of detections was observed from the borehole samples. However, the Phase I RFI coverage was insufficient to conclude no releases had occurred.

A review and an analysis of inorganic chemicals in tuff beneath the pits, trenches, and shafts indicate infrequent detections of inorganic chemicals above BVs below the disposal units. Inorganic chemicals detected include antimony, cadmium, cyanide, mercury, molybdenum, selenium, silver, thallium, and vanadium (Figure 2.2-6; Table 2.2-4). Phase I RFI data did not determine whether a release of inorganic chemicals occurred from the disposal units because of elevated DLs and insufficient spatial coverage.

Sampling and Analysis of Surface Flux

Volatile organic compound (VOC) surface flux was measured across Area G in two surveys conducted in August 1993 and August 1994 using a surface flux chamber and EMFLUX surface adsorbent cartridges. Details of the surface flux chamber investigations are reported in Eklund (1995, 56033). Details of the EMFLUX surface adsorbent cartridges investigations are presented in two Quadrel Services reports (Quadrel 1993, 63868; Quadrel 1994, 63869) and in Trujillo et al. (1998, 58242). During the summers of 1993 and 1994, tritium flux was measured at 142 locations on and near the surface of Area G (Eklund 1995, 56033).

Additionally, in 1994, 16 ambient-air samples were collected for 8 days at 2 sampling locations along the northern perimeter of Area G. Surface flux and ambient-air sampling results indicated VOCs and tritium were being released into the atmosphere from the subsurface.

Sampling and Analysis of Tritium in Pore Gas

In 2003, 13 subsurface pore-gas samples collected from boreholes (BHs) 54-01110 and 54-01111 (adjacent to the tritium disposal shafts) were analyzed for tritium.

A review and an analysis of the data indicate that tritium has been released into the tuff beneath the disposal units. The vertical extent of tritium contamination was not defined.

VOCs (primarily 1,1,1-trichloroethane [TCA]) were detected in subsurface pore gas, indicating a release. The vertical extent of contamination was not defined.

2.2.3 Quarterly Sampling of VOCs in Pore Gas, 1985 through 2004

Because methods and resulting data quality have changed significantly over the years, pore-gas data collected before 1996 were used only semiquantitatively in the MDA G HIR (LANL 2005, 87833). Data collected from 1997 to the present have been subjected to rigorous QA/QC procedures. The pore-gas monitoring data for MDA G indicate that TCA is the primary VOC detected.

Analyses of the pore-gas monitoring data indicated that the two subsurface vapor-phase VOC plumes present are closely associated with the earliest MDA G disposal pits: Pits 1 through 5 and Pits 25 and 26. The detectable VOC concentrations were known to extend to at least 153 ft bgs.

3.0 SCOPE OF ACTIVITIES

This section describes the field activities undertaken to implement the approved work plan for MDA G. The objectives of the investigation were to complete the determination of the nature and extent of hazardous waste constituent and/or radionuclide releases identified during the Phase I RFI and reported in the MDA G HIR (LANL 2005, 87833, pp. B-5–B-18).

The approved work plan for MDA G required conducting geophysical surveys, drilling 38 boreholes adjacent to or under the disposal units, and collecting samples to supplement the Phase I RFI data to determine the nature and extent of contamination. One borehole was drilled to 700 ft bgs to determine whether perched groundwater is present and to collect data on hydrogeologic properties. The first attempt to drill the 700-ft borehole was successful only to 556 ft bgs; a second borehole was drilled 10 ft away to a depth of 700 ft, resulting in a total of 39 boreholes. As part of the approved work plan, sediment samples were collected in Cañada del Buey and Pajarito Canyon, east of Area G.

The field investigation was specifically designed to determine the following:

- The nature and extent of contamination in subsurface tuff, including
    - the vertical extent of tritium in the subsurface along the southern fenceline near the high-activity tritium disposal shafts;
    - the vertical extent of the vapor-phase VOCs beneath Pits 1 through 5 at the eastern boundary of Area G and in the area of Pits 25 and 26;
    - the extent of radionuclides and inorganic chemicals beneath and adjacent to several disposal units; and
    - the presence of perchlorate, cyanide nitrate, dioxin, furan, and explosive-compound contamination in the tuff beneath MDA G.
- The presence of perched groundwater beneath MDA G.
- The hydrogeologic properties and fracture characteristics of the vadose zone beneath MDA G needed to perform contaminant-transport modeling.

Field activities at MDA G began on January 20, 2005, and were completed on August 20, 2005. All activities were conducted in accordance with applicable Environmental Stewardship–Environmental Characterization and Remediation (ENV-ECR) standard operating procedures (SOPs) (Appendix B), quality procedures (QPs), Laboratory Implementation Requirements (LIRs), Laboratory Implementation Guidance (LIGs), and Laboratory Performance Requirements (LPRs).

Deviations from the Approved MDA G Work Plan

The following were deviations from the approved work plan during the investigation.

- Because of uncertainties related to field-screening instrument readings, the boreholes were not advanced to total depths (TDs) based on photoionization detector (PID) readings. As noted in Section 6.2, the PID is susceptible to fluctuations resulting from water vapor. Samples of core contained in sealed bags for headspace measurements rapidly form condensation as water in the core evaporates, causing the PID to be unreliable for detecting low concentrations of organic vapors.
- Geotechnical and hydrogeological sampling in support of the identification of perched waters beneath MDA G was completed through the advancement of two boreholes. Samples over the depth interval of 0 ft to 556 ft were collected from BH 15-2 (54-24523). After drilling problems occurred in loose sediments and basalt debris at 556 ft bgs, BH 15-2 (54-24523) was not advanced further. BH 15-3 (54-24523) was drilled approximately 10 ft to the north of BH 15-2 (54-24523), allowing for casing to be advanced to greater depths. Sampling resumed once BH 15-3 (54-25423) reached 556 ft bgs and continued until the TD was reached at 700 ft bgs.
- Samples for moisture content, matric potential, anions, saturated and unsaturated hydraulic conductivity, and porosity were collected from the Cerro Toledo interval, Otowi Member, Guaje Pumice Bed, and Cerros del Rio basalts. Although these samples were not specified in the approved work plan, this information is important for evaluating the movement of air and water through the subsurface and may be useful in evaluating the potential for contaminant migration. In addition to sampling the individual geologic units, several contacts between these units were sampled, allowing for investigation of hydraulic conductivity across varying lithologies.

3.1 Health and Safety Monitoring

As part of the health and safety program, a site-specific health and safety plan (SSHASP) and integrated work document (IWD) (LANL 2005, 87833) were developed to delineate the scope of work of the project and to provide background information specific to the project, including relevant history and descriptions of the project sites, administrative and engineering controls, personal protective equipment (PPE), and task-specific exposure monitoring requirements. The SSHASP and IWD were prepared using a multidisciplinary team consisting of drillers, geologists, waste-management personnel, and subject-matter experts in industrial and radiological safety. During the preparation of these documents, the team identified the primary work activities and divided them into a discrete set of work steps. A detailed hazard analysis of the work steps was conducted, and a set of hazard controls was established and incorporated into the SSHASP and IWD, to which all personnel were required to be briefed as part of the project-specific training process.

As a result of the hazard assessment, real-time field health and safety monitoring was conducted for the following hazards: noise from drilling operations, dust and potential airborne inorganic chemical contaminants resulting from drilling operations and windblown material, and radioactive and volatile organic contaminants. Additionally, air sampling was conducted for the presence of silica and radiological samples were collected and analyzed for various potential contaminants.

Health and safety monitoring was conducted in accordance with applicable Occupational Safety and Health Administration (OSHA), Laboratory, American Conference of Governmental Industrial Hygienists (ACGIH), and National Institute for Occupational Safety and Health (NIOSH) protocols. The relevant regulations and documents are as follows:

- OSHA 29 Code of Federal Regulations 1926.52, Occupational Noise Exposure
- OSHA 29 Code of Federal Regulations 1926.65, Hazardous Waste Operations and Emergency Response
- OSHA 29 Code of Federal Regulations 1926.55, Gas, Vapors, Fumes, Dusts, and Mists
- Los Alamos National Laboratory Implementation Procedure (IMP) 300.2, Integrated Work Management for Work Activities
- LIR 402-700-01.2, Occupational Radiation Protection Requirements
- NIOSH, Manual of Analytical Methods
- ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices

Health and safety monitoring did not affect or limit completion of any task required in the approved work plan (LANL 2005, 87833).

3.2 Geophysical Survey

As part of the Laboratory's excavation permit process, subsurface utilities in the vicinity of each borehole were located using a Metrotech 810 pipe and cable locator. In addition, a ground-penetrating radar (GPR) survey was conducted in the vicinity of BH 15-1 (54-24360) to ensure the borehole was not located above any subsurface utilities or structures undetected with the Metrotech 810. The locations of subsurface anomalies were marked with paint on the asphalt as they were detected to ensure that the boreholes were properly sited.

3.3 Drilling Activities

A total of 39 boreholes were drilled alongside MDA G pits and shafts in 2005 at locations shown in Figure 3.3-1. The locations and sampling criteria for the boreholes were detailed in the approved work plan for MDA G (LANL 2005, 87833, pp. 24–26). Three different drill rigs were used to complete characterization drilling at the site. The drilling methods included both hollow-stem auger (HSA) and air-rotary drilling. Auger drilling was completed using two Central Mine Equipment 75 auger rigs, and air-rotary drilling was completed with a Boart Longyear Deltabase 540. Table 3.3-1 summarizes the drilling activities conducted at MDA G.

Surface casing was set at all the HSA MDA G boreholes to guide drilling and facilitate surface completions for long-term monitoring. Surface casing lengths ranged between 5 and 30 ft bgs depending on the depth to tuff, and each had a 9.5- or 10-in.-inside-diameter (I.D.).

BH 15-2 (54-24523) and BH 15-3 (54-25105) were drilled using casing-advance drilling methods. After drilling operations were completed, the casing was removed from BH 15-2 (54-24523). In BH 15-3 (54-25105), 4-in. schedule-80 polyvinyl chloride (PVC) was set to a depth of 508 ft once the steel casing was removed.

Hollow-stem auger drilling used 7 5/8-in.-outside-diameter (O.D.) auger flights and a continuous core sampling system. The continuous core sampling system consisted of a 3-in.-I.D. split barrel, retrieved with centering rods. Core recovery using this system averaged 95% per borehole.

Air-rotary drilling employed a variety of techniques, including open-hole coring and casing advancement using an underreaming hammer. Coring was completed with both 2.5-in.-I.D. and 1.75-in.-I.D. solid core barrels with wireline retrieval. Core recovery using this system averaged 60% in the Bandelier Tuff, 90% in the Cerros del Rio basalts, and nearly 100% in the Puye Formation. In addition, air-rotary drilling methods required the use of the Laboratory-owned total dust suppression system (TDSS) to contain drill cuttings and filter the air stream.

The core was visually inspected and field-screened for alpha and beta/gamma radioactivity and organic vapors in headspace. Core samples were collected and delivered to an off-site analytical laboratory for the analyses stipulated in the approved work plan (LANL 2005, 87833). The analytical data are provided in Appendix E and discussed in Section 6 and Appendix F. Field-data collection, including information from visual examination, headspace-vapor screening for VOCs, continuous screening for radiological contamination, selective screening for nitroaromatics, nitroamines, health and safety monitoring, and general daily activities, were recorded in field logbooks as required by the approved work plan (LANL 2005, 87833). The boreholes were surveyed using a differential GPS (DGPS) unit. Logs were prepared for each borehole and are included in Appendix C of this report. Once the shallow boreholes were drilled and core sampling completed, pore-gas samples were collected and delivered to an off-site analytical laboratory for the analyses stipulated in the approved work plan (LANL 2005, 87833).

3.4 Subsurface Vapor Sampling

Vapor samples for tritium and VOCs were collected to evaluate the nature and extent of the VOC vapor plume and tritium in pore gas beneath MDA G. After drilling activities concluded, pore-gas samples were collected for VOC and tritium analysis from each borehole. For all boreholes except BHs 15-2 (54-24523) and 15-3 (54-25105), a sample was collected at the depth of the nearest adjacent disposal unit and at TD. At BH-15-3 (54-25105), VOC and tritium samples were collected at the bottom of the casing (485 ft bgs).

Appendix I describes the proposed long-term subsurface monitoring plan for pore gas and identifies specific boreholes to be completed for vapor monitoring. A FLUTe soil-gas sampling positive-pressure membrane was installed in each identified borehole, and the boreholes will be incorporated into the Laboratory's pore-gas monitoring network. Figure 3.3-2 is a schematic of a FLUTe membrane installed in a borehole showing the ports and related instrumentation.

3.5 Canyon Sediment Sampling

Sediment samples were collected from canyon reaches downgradient of Area G (Figures 3.5-1 to 3.5-3b; Appendix K). The reaches are located immediately downgradient of the easternmost tributary drainages from Area G, designated reaches CDB-3 East (CDB-3E) in Cañada del Buey and PA-4 in Pajarito Canyon. Sediment deposits in these reaches potentially contain contaminants transported from Area G, including MDA G, and from other upstream locations. Thus, these two reaches were sampled to evaluate the nature and extent of contamination from MDA G and to achieve the sampling objectives specified in the "Work Plan for Sandia Canyon and Cañada del Buey" (LANL 1999, 64617) and the "Work Plan for Pajarito Canyon" (LANL 1998, 59577) to complete the Phase 1 investigations delineated in these two plans. A summary of the field investigations in reaches CDB-3E and PA-4 is presented in Reneau et al. (2005, 88716).

The sediment samples were collected according to ENV-ECR SOP-6.09, Rev. 1, Spade and Scoop Method for Collection of Soil Samples. Sediment samples were sent to an off-site contract laboratory for analysis of TAL metals, cyanide, VOCs, semivolatile organic compounds (SVOCs), pesticides/PCBs, nitrates, perchlorate, americium-241, isotopic plutonium, isotopic uranium, strontium-90, and tritium. A discussion of the sediment sampling activities and a summary of the results are presented in Appendix K.

3.6 Exploratory Boring Geophysical Logging

Geophysical surveys were completed on each new borehole. All boreholes drilled were caliper-logged, neutron-logged, and gamma-logged. In addition, BH 15-3 (54-25105) was camera logged from 490 ft to a TD of 698 ft. The results of neutron-, gamma-, and camera-logging are presented in the borehole logs (Appendix C).

3.7 Management of IDW

The waste streams generated and managed during the MDA G investigation included drill cuttings, PPE, and plastics. All wastes were managed as specified in Appendix H of the approved MDA G work plan (LANL 2005, 87833). The management of IDW is described in Appendix J.

3.8 Aquifer Testing

No site-specific aquifer testing was conducted at the site. However, as required by the approved work plan, an analysis of the groundwater samples collected from the regional wells surrounding TA-54 and the municipal wells in the vicinity of TA-54 is presented in a recent groundwater monitoring report submitted to NMED in July 2005 (LANL 2005, 89383).

4.0 FIELD INVESTIGATION RESULTS

Field investigations at MDA G began on January 20, 2005, and concluded on August 20, 2005. Borehole core samples and pore-gas samples were collected to determine the nature and extent of potential releases from the subsurface disposal units. Field-screening for radionuclides and organic chemicals was conducted during drilling to determine whether contamination was present at depth and thereby determine when drilling could cease.

4.1 Surface Conditions

Area G at TA-54 is located in the eastern area of Mesita del Buey, a 100- to 140-ft-high, finger-shaped mesa that trends southeast. The elevation of Mesita del Buey ranges from 6605 ft to 6748 ft asl at Area G and varies in width from 500 ft to 1000 ft. The mesa is bounded by Cañada del Buey (to the north) and Pajarito Canyon (to the south). The topography at Area G is relatively flat and narrow, with steep sides draining into Cañada del Buey to the north and Pajarito Canyon to the south. The north-facing slope of the mesa has a gentler gradient than the south-facing slope. The south-facing slope of Mesita del Buey is almost vertical near the rim and slopes more gently toward the canyon floor approximately 100 ft below.

The surface of Area G is regularly modified to accommodate ongoing waste storage and management operations. A very limited portion of the area can be considered undisturbed with respect to vegetation, erosional features, and soil formation. Most of Area G consists of asphalt-paved roads and storage areas, graded roads, buildings, utilities, storm water drainages, shaft caps, and vegetated pit and trench covers.

4.2 Exploratory Drilling Investigations

From January 2005 to August 2005, 39 boreholes were drilled at MDA G (Figure 3.3-1). Core was continuously collected using a 5-ft core barrel sampler in all the boreholes. Subsurface core samples were collected from the core barrel sampler following ENV-ECR SOP-6.26, Rev. 1, Core Barrel Samples for Subsurface Earth Materials, and all boreholes were logged to TD following ENV-ECR SOP-12.01, Rev. 4, Field Logging, Handling, and Documentation of Borehole Materials. Field documentation of samples collected from fractures includes detailed descriptions of the fracture-fill material and rock-matrix sampled, following ENV-ECR SOP-12.01, Rev. 4. The core was screened for organic vapors using a PID with an 11.7-eV lamp following ENV-ECR SOP-6.33, Rev. 0, Headspace Vapor Sampling with a Photoionization Detector. Gross alpha-beta radiation was measured using an Eberline E600 probe following the manufacturer's instructions. Two samples per borehole were analyzed for trinitrotoluene (TNT) and hexahydro-135-trinitro-1,3,5-triazine (RDX) using D-Tech explosives test kits. One sample each was collected from the base of the borehole and from a depth corresponding to the base of the nearest disposal unit, pit, or shaft. Tuff samples were analyzed using the instructions provided by the manufacturer.

Samples were analyzed using methods specified by contract requirements of the Laboratory's statement of work (SOW) for analytical services (LANL 2000, 71233). QA/QC samples included field duplicate samples to evaluate the reproducibility of the sampling technique and trip blanks to evaluate analytical laboratory contamination procedures. These samples were collected following ENV-ECR SOP-1.05, Rev. 1, Field Quality Control Samples. A field duplicate was collected from each borehole at the base elevation of the adjacent pit, trench, or shaft. At least one trip blank was submitted with each shipment of VOC samples. This level of QA/QC sampling complies with Section IX.B.2.e of the Consent Order. The sampling equipment was decontaminated using dry decontamination methods (i.e., using window cleaner, paper towels, and wire brushes). Equipment rinse blanks were not collected.

In accordance with the approved work plan, at least one sample was collected at the lowest base elevation of the closest disposal unit and at the TD of the borehole. Additional samples were collected based on visual and field indicators (i.e., fractures, staining, etc.) or elevated field-screening results. The analytical suite for all samples included isotopic uranium, isotopic plutonium, isotopic thorium, americium-241, strontium-90, gamma spectroscopy, TAL metals, boron, molybdenum, perchlorate, nitrates, and cyanide. Samples collected at the lowest base elevation of the adjacent disposal unit also included VOCs, technicium-99, dioxins, and furans. Samples collected from the bottom of the borehole included technecium-99 and VOCs; 20% of these samples were analyzed for explosive compounds. Samples from BH 15-2 (54-24523) and BH 15-3 (54-25105) were collected to assess geotechnical and hydrogeologic parameters, including saturated and unsaturated hydraulic conductivity, porosity, bulk density, moisture content, matric potential, and chloride anions.

A radiological laboratory performed gross alpha, beta, and gamma screening to meet federal transportation requirements.

Paired samples of fracture fill and surrounding intact tuff were collected when large fractures, or fracture zones, were encountered per the approved work plan (LANL 2005, 87833, p. 31). Paired fracture samples were collected when sufficient intact nonfractured core material was available. During the MDA G investigation, eight paired fracture samples were collected (Table 4.2-1).

In accordance with the approved work plan, samples were collected from BH 15-2 (54-24523) and BH 15-3 (54-25105) to measure the following parameters: saturated and unsaturated hydraulic conductivity, chloride ion concentration, porosity, bulk density, matric potential, and moisture content. Moisture-content and matric-potential samples were collected every 5 ft; samples for chloride analysis were collected every 10 ft. These sampling intervals increased to no less than 1 per 50 ft of depth once the borehole had been advanced into the Cerros de Rio basalts. Samples were collected for saturated and unsaturated hydraulic conductivity, porosity, and bulk-density analyses from the Cerro Toledo interval, Otowi Member, Guaje Pumice Bed, and Cerros del Rio basalts. These samples allowed for investigation of individual units as well as the contacts between these units. Analyses for saturated and unsaturated hydraulic conductivity, porosity, and bulk density were performed using the methods specified by contract requirements of the Laboratory's SOW for analytical laboratories (LANL 2000, 71233). One field duplicate sample was collected and analyzed for all the parameters listed above, except for chloride ion concentration. Samples were collected, handled, packaged, and analyzed according to applicable ENV-ECR SOPs.

Auger flights and split-spoon sampling equipment were dry-decontaminated using paper towels and brushes.

Appendix C summarizes field-screening, sample depths, types, and total number of samples collected from each borehole.

4.3 Exploratory Boring Geophysical Logging

Downhole geophysical methods were used to provide information important to evaluating subsurface physical properties. Each borehole was logged with caliper, camera, neutron, and natural gamma tools according to ENV-ECR SOP 5.07, Rev. 0, Operation of Borehole Logging Trailer. Caliper logging was used to continuously measure changes with depth in the borehole diameter. Camera logging provided a visual inspection of the condition of the borehole, and confirmation of features identified in core. Neutron probe readings were collected to provide information on moisture content. Gamma probe readings measured natural and potential anthropogenic sources of radionuclides. Because naturally occurring radionuclides are high in many minerals that form the fine-grained, high-clay-content deposits within the Bandelier Tuff and Cerros del Rio basalts, gamma logging may provide information on potential perching lithologies. The results of the geophysical logging are presented in the borehole logs in Appendix C and include the descriptions of soil and rock lithologies encountered.

4.4 Subsurface Conditions

A detailed description of the stratigraphy beneath MDA G was presented in the approved work plan (LANL 2005, 87833, pp. 16–19). The borehole logs confirm that the general stratigraphy beneath MDA G is consistent with what was encountered during previous drilling at MDA G and with the regional geology described by Broxton and Reneau (1995, 49726). The stratigraphy encountered is summarized in Sections 4.4.1 and 4.4.2. The locations of surface structures and subsurface utilities are shown in Figure 4.4-1.

4.4.1 Stratigraphy beneath Mesita del Buey

The boreholes drilled at MDA G as part of Phase I RFI activities and those drilled according to the approved work plan confirm the stratigraphy beneath Mesita del Buey as described by Broxton and Reneau (1995, 49726). The locations and depths of previously drilled regional wells (R-20, R-21, R-22, and R-32) were also used to infer the stratigraphy beneath MDA G, which includes the units of the Bandelier Tuff and the Cerros del Rio basalts (Figure 4.4-2). The regional aquifer is located within the Santa Fe Group, the Puye Formation, and the Cerros del Rio basalts.

With reference to the Bandelier Tuff, the term *welding* is used to distinguish between tuffs that are less compacted (or uncompacted) and porous (nonwelded) and those that are more compacted and dense (welded). In the field, the degree of welding in tuff is quantified by the degree of flattening of pumice fragments (a higher degree of flattening and elongation equals a higher degree of welding). Petrographically, welded tuffs show adhesion (welding) of grains, but nonwelded tuffs do not. The term *devitrified* is applied to tuff whose volcanic glass has crystallized.

Tshirege Member

The Tshirege Member of the Bandelier Tuff is a compound-cooling unit that resulted from several successive ash-flow deposits separated by periods of inactivity, which allowed for partial cooling of each unit. The properties related to water flow and contaminant migration (e.g., density, porosity, degree of welding, fracture content, and mineralogy) vary both vertically and laterally as a result of localized emplacement temperature, thickness, gas content, and composition.

Tshirege Member Unit 2

Unit 2 of the Tshirege Member of the Bandelier Tuff is a competent, resistant unit that forms the surface of Mesita del Buey. Its thickness varies from 36 ft (11 m) to 65 ft (19.8 m) at MDA G. Where it is exposed, unit 2 forms nearly vertical cliffs on the sides of the mesa. The rock is described as a moderately welded ash-flow tuff composed of crystal-rich, devitrified pumice fragments in a matrix of ash, shards, and phenocrysts (primarily potassium feldspar [sanidine] and quartz).

Unit 2 is extensively fractured as a result of contraction during postdepositional cooling. The cooling-joint fractures are visible on mesa edges and on the walls of pits. In general, the fractures dissipate at the bottom of unit 2. On average, fractures in unit 2 are nearly vertical. The mean spacing between fractures ranges from 1.9 ft to 2.6 ft (0.6 m and 8.8 m), and the fracture width ranges from less than 0.03 in. to 0.51 in. (1 mm and 13 mm), with a median width of 0.12 in. (3 mm). The fractures are typically filled with clays to a depth of about 9.9 ft (3 m); smectites are the dominant clay minerals present. Smectites are known for their tendency to swell when water is present and for their ability to strongly bind certain elements, both of which have implications for the transport of radionuclides in fractures. Opal and calcite may be found throughout the fractured length, usually in the presence of tree and plant roots (live and decomposed); the presence of both the minerals and the roots indicates some water at depth in fractures.

At the base of unit 2 is a series of thin, less-than-3.9-in.-thick (10-cm-thick), discontinuous, crystal-rich, fine- to coarse-grained surge deposits. Bedding structures are often observed in these deposits. The surge beds mark the base of unit 2.

Tshirege Member Unit 1v

Tshirege Member unit 1v is a vapor-phase-altered cooling unit underlying unit 2. This unit forms sloping outcrops, which contrast with the near-vertical cliffs of unit 2. Unit 1v is further subdivided into units 1v(u) and 1vl.

Unit 1v(u). The uppermost portion of unit 1v is devitrified and vapor-phase-altered ash-fall and ash-flow tuff; it has been designated unit 1v(u), where u signifies upper. Its thickness varies from 3 ft (0.9 m) to 35 ft (10.7 m) at MDA G. Unit 1v(u) is unconsolidated at its base and becomes moderately welded nearer the overlying unit 2. Only the more prominent cooling fractures originating in unit 2 continue into the more welded upper section of unit 1v(u) but die out in the lower, less consolidated section. More typically, fractures in unit 2 do not extend into unit 1v(u).

Unit 1v(c). Beneath unit 1v(u) is unit 1v(c), where c stands for colonnade, named for the columnar jointing visible in cliffs formed from this unit. 1v(c) is a poorly welded, devitrified ash-flow tuff at its base and top; it becomes more welded in its interior. Unit 1v(c) varies in thickness from 6 ft (1.8 m) to 32 ft (9.8 m) at MDA G.

Tshirege Member Unit 1g

The basal contact of unit 1v(c) is marked by a rapid change (within 0.7 ft [0.2 m] vertically) from devitrified (crystallized) matrix in unit 1v(c) to vitric (glassy) matrix in the underlying unit 1g. Vitric pumices in unit 1g stand out in relief on weathered outcrops, but devitrified pumices above this interval are weathered out. In outcrop, this devitrification interval forms a prominent erosional recess termed the *vapor-phase notch*. No depositional break is associated with the vapor-phase notch; the abrupt transition indicates this feature is the base of the devitrification that occurred in the hot interior of the cooling ash-flow sheet after emplacement.

Unit 1g is a vitric, pumiceous, nonwelded ash-flow tuff underlying the devitrified unit 1v(c). Unit 1g varies in thickness from 30 ft (9.1 m) to 88 ft (26.8 m) at MDA G. Few fractures are observed in the visible outcrops of this unit, and weathered cliff faces have a distinctive Swiss-cheese appearance because of the softness of the tuff. The uppermost 5 ft to 20 ft (1.5 m to 6.1 m) of unit 1g are iron-stained and slightly welded. This portion of unit 1g is resistant to erosion, helping to preserve the vapor-phase notch in the outcrops. A distinctive pumice-poor surge deposit forms the base of unit 1g.

Tsankawi Pumice Bed

The Tsankawi Pumice Bed is the basal air-fall deposit of the Tshirege Member of the Bandelier Tuff. It is a thin bed of gravel-sized vitric pumice. The maximum thickness of the Tsankawi Pumice Bed is 2 ft (0.6 m) at MDA G.

Cerro Toledo Interval

The Cerro Toledo interval consists of thin beds of tuffaceous sandstones, paleosols, siltstones, ash, and pumice falls; it separates the Tshirege and Otowi Members of the Bandelier Tuff. The Cerro Toledo interval also includes localized gravel- and cobble-rich fluvial deposits predominantly derived from intermediate composition lavas eroded from the Jemez Mountains west of the Pajarito Plateau. This interval varies in thickness from 0.5 ft (0.2 m) to 32 ft (9.8 m) at MDA G.

Otowi Member

The Otowi Member tuffs have a maximum penetrated thickness of 62 ft (18.9 m) at MDA G, although in some locations it was not encountered. The tuffs are massive, nonwelded, pumice-rich, and mostly vitric ash flows. The pumices are fully inflated, supporting tubular structures that have not collapsed as a result of welding. The matrix is an unsorted mix of glass shards, phenocrysts, perlite clasts, and minute, broken pumice fragments.

The Guaje Pumice Bed is the basal air-fall deposit of the Otowi Member of the Bandelier Tuff. The maximum thickness of the unit at MDA G is 5 ft (1.5 m). The pumice bed is nonwelded but brittle, and the pumice tubes are partially filled with silica cement.

Cerros del Rio Basalts (Tb 4)

In the vicinity of TA-54, the Cerros del Rio basalts lie directly beneath the Otowi Member of the Bandelier Tuff. In well R-32, the basalts are 636 ft (193.9 m) thick; in well R-22 they are 983 ft (299.6 m) thick. In both wells, the regional water table occurs within these basalts. Local borehole cores at MDA G show the basalts consist of both angular rubble and dense, fractured masses, with zones of moderately to very porous lavas. Deeper drilling at R-22 showed a wide variety of lithologies within the basalts, including massive flows, interflow rubble or scoria zones, sediments, and paleosols. One borehole (BH 15-3 [54-25105]) penetrated 282 ft (85.9 m) of the Cerros del Rio basalts.

Puye Formation (Tpf, Tpp) and Older Fanglomerate

The Puye Formation is a conglomerate deposit derived primarily from volcanic rocks to the west, with varying lithologies, including stream channel and overbank deposits, ash and pumice beds, debris flows and lahar deposits. Well tests on the plateau confirm the unit is very heterogeneous with both high- and low-permeability zones present (Nylander et al. 2003, 76059). The formation is poorly lithified, and as such is unlikely to sustain open fractures.

The Puye Formation thins from west to east beneath TA-54. At supply well PM-2, the Puye Formation (including fanglomerate, pumaceous units, and ancestral Rio Grande deposits) is approximately 800 ft (243.8 m) thick; at well R-23 it is completely absent. Drilling across the plateau indicates the Puye Formation is frequently underlain by alluvial fan deposits similar in lithology to the Puye, but considerably older. These deposits are of considerable thickness at PM-2, were penetrated at R-22 (and were approximately 80 ft [24.4 m] thick), and were absent at R-23. The Puye Formation was also encountered at R-16 (351 ft [106.9 m] thick) where the water table occurs within the Puye Formation.

Totavi Lentil Deposits (Tpt)

The Totavi Lentil is an ancestral Rio Grande deposit consisting of coarse gravels and sands with abundant quartzite. The deposit has been alternatively conceptualized as a series of distinct north-south trending ribbons as well as a continuous thin sheet at the base of the Puye Formation. Like the overlying Puye Formation it has both high- and low-permeability zones (Nylander et al. 2003, 76059).

Santa Fe Group (Tsf, Tf, and Ts) and Santa Fe-Age Basalts (Tb 1 and Tb 2)

The Santa Fe Group is an alluvial-fan deposit comprised of medium to fine sands and clays. Numerous north-south trending faults are present in the Santa Fe Group. Santa Fe Group rocks are deep below MDA G (1500 ft [457.2 m] bgs at PM-2) and were not penetrated by R-20, R-32, or R-22. Most water supply wells on the eastern edge of the Pajarito Plateau and elsewhere in the basin are completed in these rocks. The Santa Fe Group units have the lowest permeability of all the units in the regional aquifer.

Basaltic lava flows occurred when the Santa Fe Group was deposited; these basalts occur both within the Santa Fe Group and within the pre-Puye-Formation sands, gravels, and conglomerates penetrated by R-20 and R-22. These old basalts appear to have fewer open fractures than the younger Cerros del Rio basalts.

4.4.2 Stratigraphic Units Encountered During MDA G Drilling

The subsurface conditions encountered at MDA G showed little variation from north to south and a gradual decline in unit thicknesses from west to east. The uppermost units encountered were cooling unit 2 (Qbt 2), which ranged in thickness from 37 ft to 65 ft; followed in stratigraphy by Qbt 1v(u), which ranged in thickness from 3 ft to 35 ft; followed by the colonade member Qbt 1v(c), which ranged in thickness from 6 ft to 32 ft. Beneath these units were Qbt 1g, ranging in thickness from 30 ft to 88 ft; Tsankawi Pumice, ranging in thickness from 0 ft to 2 ft; and the Cerro Toledo interval having a thickness between 0.5 ft and 32 ft. The Otowi Member, ranging in thickness between 0 ft and 61.5 ft, and the Guaje Pumice Bed, with a thickness of 0 ft to 5 ft, were penetrated only by a smaller subset of boreholes. The Cerros del Rio basalts were penetrated beyond refusal only in BH 15-2 (54-24523) and BH 15-3 (54-25105).

4.5 Groundwater Conditions

Borehole 15-3 (54-25105) was drilled to 700 ft to determine if perched groundwater is present in the vadose zone beneath Mesita del Buey at MDA G. Perched groundwater was not encountered in this borehole. In addition, none of the other 38 boreholes encountered perched lenses. Groundwater monitoring was not required by the approved work plan unless perched groundwater was encountered. Therefore, groundwater monitoring was not performed as part of the MDA G investigation. The results of groundwater monitoring in the regional aquifer in the vicinity of MDA G are presented in a recent Laboratory report submitted to NMED in July 2005 (LANL 2005, 89383).

4.6 Surface Air and Subsurface Vapor Conditions

Following the completion of drilling, pore-gas samples were collected for VOC analysis, following ENV-ECR SOP-6.31, Rev. 1, Sampling of Subatmospheric Air. The samples were collected using a straddle packer to isolate discrete depths within the borehole after allowing for equilibration of pore gas. Each interval was purged before it was sampled until the measurements of carbon dioxide and oxygen were stable and representative of subsurface conditions. Subsurface pore-gas samples were collected in SUMMA canisters and submitted to an off-site contract laboratory for VOC analysis using U.S. Environmental Protection Agency (EPA) Method TO-15.

QA/QC samples for VOCs in pore gas consisted of three equipment blanks and three field duplicates for all 39 boreholes. After sampling and purge decontamination, the equipment blanks were collected by pulling zero gas (99.9% ultrahigh-purity nitrogen) through the packer sampling apparatus. These samples were used to evaluate the decontamination procedures. The field duplicate samples were collected to evaluate the reproducibility of the sampling technique. QA/QC samples were collected were collected once during each sampling event in accordance with ENV-ECR SOP-1.05, Rev. 1.

Pore-gas samples were also collected to determine the lateral and vertical extent of the subsurface tritium release at MDA G. Samples from boreholes were collected using an inflatable straddle packer system. Samples were collected as vapor by pulling pore gas through columns filled with absorbent silica gel in accordance with ENV-ECR SOP-6.31, Rev. 1. After allowing time for equilibration, the newly completed boreholes were sampled from the depth equal to the base depth of the adjacent disposal unit, and at TD. QA/QC samples were collected according to applicable SOPs and the approved work plan. Three tritium field duplicates were collected during vapor sampling at MDA G according to the approved work plan and ENV-ECR SOP-1.0.5, Rev. 1. Tritium was analyzed in water collected in silica gel columns from the pore-gas using EPA Method 906.0.

Air-permeability data were not collected during this investigation. However, the bulk permeability of the media may be inferred from data collected in boreholes at MDA L (SEA 1997, 87918). Anemometry measurements from MDA L location 54-01018 provide information on the bulk flow within the media. These data indicated that in the upper 300 ft of strata, surface-air flow is least restricted by the matrix within the Cerro Toledo interval. Subsequent discrete-point permeability measurements confirmed the Cerro Toledo interval has a higher permeability than the other stratigraphic layers (3–10 D compared to 0.2–0.9 D). Figure 4.6-1 shows both the anemometry and discrete-point permeability measurements from location 54-01018. The variability in the anemometry readings within the Qbt 1g unit was the result of measurement variability.

5.0 REGULATORY CRITERIA

This section describes the regulatory criteria used for screening sample results and for evaluating potential risk to ecological and human receptors. Regulatory criteria identified in Section XI.C.8 of the Consent Order include cleanup standards, risk-based screening levels, and risk-based cleanup goals established by medium. These criteria are discussed in the following subsections. Applicable criteria identified in this section are included in the data tables in Section 6, Appendix F, and Appendix G.

5.1 Screening Levels

Screening levels for chemicals in soil, sediment, and tuff are NMED soil screening levels (SSLs) as presented in the "Technical Background Document for Development of Soil Screening Levels" (NMED 2004, 85615). In accordance with this guidance, if an NMED SSL is not available for a chemical, the EPA Region 6 human health media-specific screening level is used as the SSL (adjusted to 10^{-5} for carcinogens) (EPA 2004, 87478). Both residential and industrial SSLs are presented in the chemical data tables in the risk assessment (Appendix G) for comparison with analytical results.

Screening levels for radionuclides in soil, sediment, and tuff are screening action levels (SALs) based on 15 mrem/yr exposure and are derived using RESRAD Version 6.21 (LANL 2005, 88493). SALs for both residential and industrial exposure are presented in radionuclide data tables in the risk assessment (Appendix G).

Screening levels for VOCs and tritium in pore gas have not been established for MDA G. These data were collected to determine the nature and extent of subsurface vapor plumes to use in evaluating contaminant transport and selecting possible corrective measures.

5.2 Cleanup Goals

The cleanup goals specified in Section VIII of the Consent Order are a target risk level of 10^{-5} for carcinogens or a hazard index (HI) of 1 for noncarcinogens. A cleanup goal of 15 mrem/yr incremental exposure for radioactively contaminated sites has been established by DOE. The screening levels referred to in Section 5.1 are based on these cleanup goals. As specified in Section VIII.B.1 of the Consent Order, the screening levels may be used as soil cleanup levels unless determined to be impracticable or unless SSLs do not exist for the current and reasonably foreseeable future land use. The soil cleanup levels to be used at MDA G will be determined during the corrective measures evaluation (CME).

6.0 SITE CONTAMINATION

The approved work plan was designed to provide data needed to complete an evaluation of the nature and extent of subsurface contamination related to historical waste disposal activities. This section presents the analytical results for soil, sediment, rock, and vapor sampling conducted under the approved work plan field activities.

6.1 Tuff and Sediment Sampling

Sediment Sampling

Sediment samples were collected from reaches in Pajarito Canyon and Cañada del Buey to evaluate potential contaminant transport into these canyons from MDA G. Sediment deposits in these reaches may potentially contain the combined effects of contaminants transported from Area G, including MDA G, and from other upstream locations. A discussion of the sediment sampling activities and a summary of the results are presented in Appendix K.

Subsurface Sampling

Subsurface samples were collected from 39 boreholes within and adjacent to MDA G. Samples were collected from 37 boreholes to determine the nature and extent of contamination, and geotechnical and hydrogeologic samples were collected from 2 boreholes. The samples were selected from predetermined depths and from intervals that showed unusual lithologies or fractures, visual indicators of contamination, or elevated field-screening results. The location of these boreholes and their identification numbers are presented in Figure 3.3-1.

Table 6.1-1 presents the depth interval, lithological unit, and analyte list for each sample, listed by borehole location. In addition, field-screening results and sample lithology descriptions can be found on the borehole logs (Appendix C).

6.2 Tuff and Sediment Sampling Field-Screening Results

The field team screened all recovered core samples for radioactivity and VOCs, and selected core samples were screened for high explosives (HE). The core was sampled and logged after field screening. In addition to the prescribed sampling intervals, eight samples were collected based upon visual examination of core (Table 4.2-1). Selection of these samples focused on the presence of fractures and on geologic lithologies with increased porosity.

Screening for gross alpha and beta radiation was performed using an Eberline E-600 portable radiation monitor, and an SHP-38AB scintillation detector. Heath, Safety, and Radiation Protection Division–Health Physics Operations Group (HSR-1) personnel conducted daily performance and operational checks. Screening was conducted in accordance with ENV-ECR SOP-10.07, Field Monitoring for Surface and Volume Radioactivity Levels, and the field team received hands-on training from HSR-1 personnel to use the instruments. The radiological screening results were recorded in the borehole logs (Appendix C). The results of radiological field screening should not be compared between boreholes because the background radiation values varied with geographic location across the site.

Organic vapor monitoring was performed using a Rae Systems, Inc. MiniRae 2000 Model PGM-7600 PID with an 11.7-eV bulb to monitor the core immediately after the core barrels were opened. Headspace screening was conducted on the core samples at 10-ft intervals according to ENV-ECR SOP-06.33. The workers' breathing zone was also monitored. PID readings were recorded in the borehole logs (Appendix C). While valuable for screening high concentrations of VOCs, the PID is susceptible to moisture, and the measurements can fluctuate greatly as the detectable concentration decreases. This fluctuation may be attributed to atmospheric moisture that will interfere with the detection instrumentation. Therefore, no biased samples were submitted for organic chemical analyses based on PID readings (Section 3.0).

Screening for HE using D-Tech test kits for the explosive compounds RDX and TNT was conducted at the base of the disposal units and at the TD of each borehole. The HE field-screening results are presented in the borehole logs (Appendix C).

6.3 Sediment and Tuff Sampling Analytical Results

The MDA G IR data set includes sediment samples from the canyons and soil, and rock samples from 37 boreholes. Field-related (QA/QC) samples include field duplicates and trip blanks. In addition, the analytical laboratory employed specific QA/QC procedures to ensure data quality. These procedures are described in Appendix D and the analytical results, the data validation reports, and the chain-of-custody forms are provided in Appendix E. This section summarizes the analytical results for the sediment and the subsurface core samples collected at MDA G in 2005.

6.3.1 Sediment Sampling

A discussion of the analytical results for reach samples from Cañada del Buey and Pajarito Canyon sampling events is presented in Appendix K. This section summarizes the results of post-Cerro Grande fire sampling data. Inorganic chemicals detected in reach CDB-3E in Cañada del Buey above the sediment BVs were aluminum, arsenic, barium, chromium, cobalt, copper, iron, lead, magnesium, manganese, potassium, selenium, vanadium, and zinc. Cadmium was not detected; however, the DLs were greater than the BV. Fluoride, nitrate, and perchlorate were detected but have no BVs. The inorganic chemicals detected in reach PA-4 in Pajarito Canyon above sediment BVs were aluminum, arsenic, barium, cadmium, calcium, chromium, cobalt, copper, cyanide, iron, lead, magnesium, manganese, nickel, potassium, selenium, silver, vanadium, and zinc. Nitrate was detected in PA-4 sediments but has no sediment BV for comparison.

Five organic chemicals (Aroclor-1254, Aroclor-1260, bis[2-ethylhexyl]phthalate, di-n-butylphthalate, and pyrene) were detected in at least one sample from reach CDB-3E. Four of the analytes were detected in only one sample, while Aroclor-1254 was detected in two samples. Twelve organic chemicals were detected in at least one postfire sediment sample from reach PA-4.

The radionuclides americium-241, plutonium-238, and plutonium-239 were detected above BVs in postfire CDB-3E samples. Americium-241, cesium-137, plutonium-239, and plutonium-240 were detected above BVs in postfire samples.

6.3.2 Subsurface Sampling

Core samples were collected from 37 boreholes and submitted to an off-site laboratory for analysis of VOCs, dioxins/furans, inorganic chemicals (including cyanide, nitrate and perchlorate), and radionuclides, as described in Table 6.1-1. Analytical results for subsurface samples are presented in Appendix E. To determine the chemicals of potential concern (COPCs) and to evaluate the nature and extent of contamination, subsurface data for inorganic chemicals and naturally occurring radionuclides were screened against BVs for individual stratigraphic units. The fallout radionuclides and organic chemicals detected in soil and rock samples are identified as COPCs.

Inorganic Chemicals Detected in Subsurface Samples

A number of inorganic chemicals were detected above BVs in samples collected during field-sampling activities. Table 6.3-1 shows the inorganic chemicals detected above BVs in subsurface soil and rock samples from each stratigraphic unit beneath MDA G. Included in the table are detected values for chemicals for which no BV has been established. Plate 6.3-1 shows the locations and depths of the detections of inorganic chemicals above BVs and the detections of inorganic chemicals without BVs.

Inorganic chemicals detected above BVs and nondetects with DLs exceeding BVs for units within the Bandelier Tuff are discussed below. Analytes without BVs detected in tuff samples are also presented below.

Inorganic Chemicals above BVs in Unit Qbt 2

Aluminum, arsenic, barium, chromium, cobalt, iron, lead, magnesium, nickel, potassium, vanadium, and zinc were detected above BVs infrequently (less than 5%) in the 65 samples analyzed from unit Qbt 2. In addition, cyanide (total) was detected above BV in 1 of 59 samples from Qbt 2, and beryllium, calcium, and copper were detected above BVs in 6 of 65 samples. Selenium was detected above BV in 5 of 65 samples, and 55 samples had DLs above the BVs. Inorganic chemicals detected in Qbt 2 with no BVs include boron, molybdenum, nitrate, and perchlorate. Boron was detected in 8 of 63 samples, molybdenum was detected in all 63 samples, nitrate was detected in 32 of 61 samples, and perchlorate was detected in 6 of 65 samples.

Inorganic Chemicals above BVs in Unit Qbt 1v

Barium, beryllium, and copper were detected at concentrations exceeding BVs in 1 of 12 samples analyzed from unit Qbt 1v (includes samples collected from Qbt 1v[u] and Qbt 1v[c]). Arsenic and selenium were detected above BVs in 4 of 12 samples. Cadmium, selenium, and thallium were reported as nondetects in several samples; however, the DLs for these metals are above their respective BVs. Molybdenum was detected in all 10 samples from unit Qbt 1v; however, no BV has been established.

Inorganic Chemicals above BVs in Unit Qbt 1g

Aluminum, arsenic, beryllium, calcium, iron, manganese, and nickel were detected at concentrations above BV in 2 of 10 samples analyzed from unit Qbt 1g. Barium was detected above BV in 4 of 10 samples from unit Qbt 1g. Arsenic, cadmium, and selenium were reported as nondetects in several samples; however, the DLs for these metals are above their respective BVs. Boron was detected in 5 samples, molybdenum was detected in all 10 samples, and perchlorate was detected in 1 sample, but these inorganic chemicals do not have BVs established.

Inorganic Chemicals above BVs in Unit Qct

Beryllium, calcium, lead, selenium, and zinc were detected at concentrations exceeding BVs in less than 4 of the 14 samples analyzed. Manganese and copper were detected above BVs in 8 of 14 samples. Arsenic, barium, and nickel were detected above BVs in 11 of 14 samples. Chromium, iron, and vanadium were detected above BVs in 12 of 14 samples. Aluminum was detected above BV in 13 of 14 samples. Magnesium was detected above BV in all 14 samples. Arsenic, cadmium, and selenium were reported as nondetects in several samples, but the DLs for these inorganic chemicals are above their respective BVs. Boron and nitrate were detected above BVs in 11 and 3 of 14 samples, respectively, from unit Qct. Boron and nitrate do not have BVs established.

Inorganic Chemicals above BVs in Unit Qbo

Aluminum, arsenic, calcium, chromium, copper, iron, nickel, and vanadium were detected at concentrations exceeding BVs in 1 to 4 of 25 samples from unit Qbo. Cyanide (total) was detected above its BV in 1 of 24 samples from Qbo. The concentrations of barium and magnesium exceeded BVs in 12 and 14 of 25 samples, respectively. Arsenic, cadmium, and selenium were reported as nondetects in several samples, but the DLs for these inorganic chemicals exceeded their respective BVs. Boron, perchlorate, and nitrate, were detected in 1, 2, and 3 samples, respectively. Molybdenum was detected in all the samples analyzed from Qbo. Boron, nitrate, perchlorate, and molybdenum do not have BVs established for unit Qbo.

Inorganic Chemicals above BVs in Unit Qbog

There are no established BVs for unit Qbog. Because Qbog is recognized as part of the Otowi Member of the Bandelier Tuff (Broxton and Reneau 1995, 49726), inorganic chemicals detected in unit Qbog are screened against the BVs for unit Qbo. Aluminum, cadmium, copper, iron, manganese, potassium, selenium, and vanadium were detected above BVs in 1 or 2 of 6 samples analyzed from unit Qbog. Arsenic, barium, calcium, chromium, iron, magnesium, and nickel were detected above BVs in 3 or 4 samples from Qbog. Antimony, arsenic, cadmium, and selenium were reported as nondetects in several samples; however, the DLs for these metals are above their respective Qbo BVs. Boron was detected in one sample, and molybdenum was detected in all six samples analyzed from Qbog. BVs have not been established for boron and molybdenum for unit Qbo.

Inorganic Chemicals above BVs in Soil

The results from samples collected from fractures and paleosols were compared to soil BVs. Beryllium, iron, selenium, and zinc were detected above BVs in one of six soil samples. Cobalt, copper, and nickel were detected above BVs in two or three of six soil samples. Cadmium and magnesium were detected above BVs in four of six soil samples. Calcium was detected above its BV in all six soil samples. Two sample results were reported as nondetects for selenium, but the DLs were above BV. Boron, molybdenum, and nitrate were detected in several soil samples; however, BVs have not been established for these chemicals.

Inorganic Chemicals above BVs in Unit Tcb

Chlorides were detected in all samples from Tcb. BVs have not been established for unit Tcb.

Organic Chemicals Detected in Subsurface Samples beneath MDA G

One sample from each borehole was collected for analysis of dioxins/furans at a depth that corresponds with the base of the closest waste disposal unit. Detected dioxin and furan congeners are presented in Table 6.3-2. Plate 6.3-2 shows the locations and depths of organic chemicals detected. Dioxin and furans were detected at parts per trillion concentrations in samples collected from eight boreholes drilled beneath MDA G. At least one dioxin or furan congener was detected in BHs 4 (54-24363), 11 (54-24371), BH 14 (54-24374), 21 (54-24381), 25 (54-24385), 28 (54-24388), 30 (54-24390), and 31 (54-24391). Octachlorodibenzodioxin[1,2,3,4,6,7,8,9-] was the most frequently detected congener (seven samples), with a maximum concentration of 0.00000897 mg/kg in BH 11 (54-24371) at 40–45 ft bgs.

No VOCs or explosive compounds were detected in core samples at MDA G.

Radionuclides Detected in Subsurface Samples beneath MDA G

Radionuclides detected above BVs, as well as detections of radionuclides without BVs, are presented in Table 6.3-3. Plate 6.3-3 shows the locations and depths of radionuclides detected above BVs and detections of radionuclides without BVs.

Radionuclides above BVs in Unit Qbt 2

Thorium-228, thorium-230, thorium 232, uranium-234, uranium-235, and uranium-238 were detected above BVs in 2 to 9 of 65 samples from unit Qbt 2. Amercium-241, plutonium-238, plutonium-239, and strontium-90, which do not have BVs for unit Qbt 2, were detected in up to 11 of 65 samples.

Radionuclides above BVs in Unit Qbt 1v

Thorium-238, thorium-230, thorium-232, uranium-235, and uranium-238 were detected at concentrations above BVs in 1 to 3 of 12 samples analyzed from unit Qbt 1v (including samples collected from Qbt 1v[u] and Qbt 1v[c]). Strontium-90 was detected in one sample and has no BV for unit Qbt 1v.

Radionuclides above BVs in Unit Qbt 1g

Thorium-230, uranium-234, uranium-235, and uranium-238 were detected at concentrations above BVs in 1 to 6 of 10 samples analyzed from unit Qbt 1g. Plutonium-239 was detected in one sample and has no BV for unit Qbt 1g.

Radionuclides above BVs in Unit Qct

Uranium-235 was detected at a concentration above BV in one of 14 samples analyzed from unit Qct. Americium-241, plutonium-239, and strontium-90 were detected in 1 or 2 of 14 samples from unit Qct; there are no BVs for these radionuclides.

Radionuclides above BVs in Unit Qbo

Uranium-235 and uranium-238 were detected at concentrations exceeding BVs in 1 and 3 of 25 samples, respectively, from unit Qbo. Plutonium-238 and strontium-90 were detected in 1 of 25 samples analyzed from unit Qbo. Americium-241 and plutonium-239 were detected in 4 of 25 samples. These radionuclides do not have BVs for unit Qbo.

Radionuclides above BVs in Unit Qbog

There are no established BVs for unit Qbog. Because Qbog is recognized as part of the Otowi Member of the Bandelier Tuff (Broxton and Reneau 1995, 49726), the radionuclides detected in unit Qbog are screened against BVs established for Qbo. Thorium-230, uranium-234, uranium-235, and uranium-238 were detected at concentrations above Qbo BVs in two or three of the six samples from unit Qbog. Plutonium-239 was detected in one of six samples and has no BV for unit Qbo.

Radionuclides above BVs in Soil

The naturally occurring radionuclide results from samples collected from fractures and paleosols were compared to soil BVs. Americium-241, plutonium-238, and plutonium-239 were detected in one of six such samples from MDA G. The soil BVs for the radionuclides are only for surface soil samples (0–6 in.) and were not used for comparison to the subsurface soil samples.

6.3.3 Results of Moisture Analyses

Sixty-two samples for laboratory analyses of moisture content and matric potential were collected at approximately 5-ft intervals to a depth of 595 ft from BH 54-25423. Three moisture and matric potential samples were collected at 5-ft intervals from 595.5 ft to 699.5 ft bgs in BH 15-3 (54-25105). The results of these analyses are presented in Table 6.3-4. Gravimetric moisture content results ranged from 0.2% to 27.2%, with all samples except the 27.2% result at or below 11.3% moisture by weight. The moisture content in Qbt 2 ranged from 2.1% to 6.4%, with a mean of 3.86%. Moisture content in Qbt 1v ranged from 5.3% to 10%, with a mean of 7.7%. Moisture content in Qbt 1g ranged from 4.0% to 10.8%, with a mean of 7.0%. Median values for all units were within 1.9% of the mean values. One sample, collected in BH 15-2 (54-25423) from the Guaje Pumice Bed overlying the basalt, showed a moisture content of 27.2%. One sample, collected from the basalt at a depth of 545.0 ft to 545.3 ft in BH 15-2 (54-25423), showed a moisture content of 11.3%. Matric potential measurements ranged from –0.6 bars to –335.0 bars, indicating that none of the samples submitted were saturated (negative matric potential readings are indicative of unsaturated conditions).

6.4 Subsurface Vapor Sampling

In each borehole, vapor samples for VOCs and tritium were collected at the base depth of the nearest adjacent disposal unit and at TD of the borehole. In addition to SUMMA canisters for VOC analyses and silica gel samples for tritium analysis, field-screening data were collected using a CES Landtec GEM 2000.

6.5 Subsurface Vapor Sampling Field-Screening Results

Following borehole completion, pore-gas samples were collected and analyzed in the field using a downhole straddle-packer system to isolate the desired sampling interval and a Landtec to monitor methane, carbon dioxide, and oxygen. Each sampling interval was purged before sampling until the measurements of carbon dioxide and oxygen were stable and representative of subsurface conditions. Field-screening results are presented in Table 6.5-1.

6.6 Subsurface Vapor Sampling Analytical Results

Pore-gas samples were sent to an off-site analytical laboratory for analysis of VOCs and tritium. Sample results from 38 boreholes (including deep BH 15-3 [54-25105]) installed during the investigation reported concentrations of multiple VOCs (Table 6.6-1) and tritium (Table 6.6-2).

Volatile organic compounds were detected in 38 boreholes at MDA G. In total, 30 VOCs were detected in some or all the pore-gas samples beneath MDA G. Table 6.6-1 lists the VOCs detected in pore gas by borehole. The primary VOC detected in 75 of 76 samples was TCA. Other VOCs detected included trichloroethene (TCE), tetrachloroethene (PCE), and trichloro-1,2,2-trifluoroethane[1,1,2-] (Freon-113). The concentrations of TCA ranged from 41 $\mu g/m^3$ to 709,000 $\mu g/m^3$. The highest VOC concentrations were detected in boreholes in the eastern portion of the site, in the vicinity of Pits 1, 2, 3, 4 and 5 and the nearby shaft field. The highest concentration of TCA was 709,000 $\mu g/m^3$collected from BH 54-24378 in the eastern portion of MDA G, near the disposal shafts, at a depth of 136 ft. Two additional areas of higher VOC concentrations occurred in the central portion of MDA G, near Pits 8, 9, 10, 12, 13, 15, 16, and 19, and in the western portion of the site, near Pits 29, 32, 33, 35 and 36. Plate 6.6-1 shows the VOCs detected in the subsurface vapor samples.

An analysis of the VOCs detected in pore-gas samples (Table 6.6-1) indicates that VOC contamination in the eastern, central, and western portions of the site may be the result of releases from different sources of VOCs from disposal units in these areas. The highest levels of TCA in the central and western portions of MDA G were detected in samples collected from BH 30 (54-24390) and BH 34 (54-24394), respectively. Although TCA is still the dominant contaminant in these areas, the relatively higher concentrations of other VOCs, including TCE and PCE, in these samples indicate releases from different sources. However, the levels of VOCs in the subsurface vapor in these portions of MDA G are an order of magnitude less than in the eastern portion.

Tritium samples collected from all 38 boreholes detected variable concentrations of tritium (Table 6.6-2). The concentrations ranged from 479 pCi/L (BH 24 [54-24384] at 65–67 ft bgs) to 6,960,000 pCi/L (BH 26 [54-24386] at 35–37 ft bgs). Plate 6.6-2 shows tritium in vapor samples collected beneath MDA G. The highest tritium readings were beneath the eastern and south-central portions of the facility. Tritium concentrations generally decrease with distance and depth from these two portions of MDA G. Tritium was detected at 5150 pCi/L in borehole BH 15-3 (54-25105) in a pore-gas sample from the Puye Formation, at a depth of 485–700 ft.

6.7 Preliminary Data for BH-1 (Location 54-24360)

Drilling for BH 1 (54-24360) began on August 16, 2005, and the surface casing set to a depth of 14 ft within unit 2 of the Tshirege Member. The overlying crushed tuff cover of Pits 1 and 3 was 9 ft thick. The following day, the borehole was advanced from 14 ft bgs to the target depth of 200 ft bgs. One analytical sample and field duplicate sample were collected at a depth corresponding with the base of the nearby pits (60 ft to 65 ft bgs) for the full analytical suite (TAL metals, boron, molybdenum, cyanide, nitrates, perchlorate, dioxins, furans, VOCs, and radionuclides [isotopic uranium, isotopic plutonium, americium-241, strontium-90, technetium-99, and those analyzed by gamma spectroscopy]). Additional samples were collected at 135 ft to 138 ft within the Cerro Toledo interval and at 195 ft to 200 ft bgs (TD) and analyzed for TAL metals, boron, molybdenum, cyanide, nitrates, perchlorate, and radionuclides (isotopic uranium, isotopic plutonium, americium-241, strontium-90, technetium-99, and those analyzed by gamma spectroscopy). Following completion of drilling on August 17, 2005, the borehole was completed with a flush mount wellhead. A summary of subsurface core samples collected from BH 1 (54-24360) is presented in Table 6.7-1.

Following the completion of drilling, pore-gas samples for tritium and VOCs were collected to evaluate the nature and extent of the VOC vapor plume and tritium in pore gas beneath MDA G. Pore-gas sampling was conducted in accordance with procedures described in Section 4.6. A summary of pore-gas samples is presented in Table 6.7-2.

Although the analytical data from BH 1 (54-24360) have not been validated, preliminary pore-gas data are presented in Tables 6.7-3 and 6.7-4. The preliminary core data for organic chemicals, inorganic chemicals, and radionuclides are presented in Tables 6.7-5 through 6.7-7. The preliminary results appear to be consistent with data for other boreholes sampled at MDA G. Once these data have been validated, the final results will be transmitted to NMED, along with a discussion of the impact, if any, on conclusions regarding the nature and extent of contamination at MDA G and the proposed monitoring program.

7.0 CONCLUSIONS

The MDA G field investigation was designed to provide data to complete an assessment of the nature and extent of contamination as a result of historical waste disposal activities at MDA G. These data complement data collected during 1994–1995 as part of the Phase I RFI and the quarterly pore-gas monitoring conducted from 1997 to the present.

7.1 Summary of RFI Investigation

The data collected during the Phase I RFI consisted of comparisons of site data with BVs in environmental media, an evaluation of correlations among environmental measurements, and an evaluation of spatial plots of contaminant concentrations in surface and subsurface environmental media. The following RFI COPCs were identified:

- Americium-241, cesium-137, cobalt-60, europium-152, plutonium-238, plutonium-239, strontium-90, thorium-230, tritium, uranium-234, uranium-235, and uranium-238 were detected in subsurface core beneath the pits, trenches, and shafts.
- Antimony, arsenic, cadmium, cyanide, molybdenum, selenium, silver, thallium, and vanadium had detected concentrations and/or DLs above background levels in subsurface core beneath the pits, trenches, and shafts.
- Twenty-two organic chemicals were detected in subsurface core beneath the pits, trenches, and shafts: one PCB, three pesticides, nine SVOCs, and nine VOC
- Tritium was detected in surface flux samples and pore gas.
- VOCs were detected in pore-gas samples collected from monitoring boreholes, surface flux, and ambient-air samples.
- Methoxychlor was detected in channel sediments.
- Americium-241, cesium-137, cobalt-60, plutonium-238, plutonium-239, and tritium were detected above BVs in channel sediments. Cobalt, mercury, selenium, and silver were not detected above BVs in sediment samples; however, the DLs for some samples were elevated above BVs. Barium, cadmium, chromium, and iron were detected above BVs in channel sediments.

7.2 Summary of Quarterly Pore-Gas Monitoring

Ongoing quarterly pore-gas monitoring conducted since 1997 indicates that the maximum vapor concentrations are located in the eastern portion of MDA G and are limited at depth by the Cerros del Rio basalt layer. The dominant subsurface vapor contaminant is TCA. A comparison of the results of the pore-gas samples collected during the 2005 field investigation with past quarterly pore-gas monitoring results indicate that the existing monitoring network is satisfactory for monitoring subsurface VOCs and tritium contamination. Several additional monitoring points were identified near potential source areas. Boreholes proposed for additional monitoring as part of the network are identified in Appendix I.

7.3 Results of the MDA G Work Plan Investigation

During the 2005 field investigation, 39 boreholes were drilled to collect soil, rock, and pore-gas samples to determine the nature and extent of contamination at MDA G. A number of organic and inorganic chemicals were detected at trace levels in soil and rock samples collected beneath the former disposal units. The findings were generally consistent with the Phase I RFI results. The only organic chemicals detected in core samples were trace levels of several dioxin and furan congeners.

Concentrations of inorganic chemicals detected beneath MDA G were indicative of natural variability within the various stratigraphic layers. All inorganic chemicals detected above BVs in the units adjacent to the base of the disposal pits, trenches, and shafts were generally less than five times the BV. In addition, all inorganic chemicals detected at levels greater than BVs were in samples from intervals containing clay-filled fractures. All detections within the fractures were less than the soil BV, a more representative metric for comparison.

A number of naturally occurring radionuclides and anthropogenic radionuclides were detected or detected above BVs in soil and rock samples from beneath MDA G. Naturally occurring radionuclides were detected at concentrations within the natural variability of these chemicals in the subsurface. All but three uranium and thorium isotope detects within Qbt2 (the unit adjacent the base of the disposal pits and trenches) were at concentrations less than two times the BV. Uranium-234, uranium-235, and uranium 238 each were detected once at 2.8, 3.4, and 2.6 times its BV, respectively. For uranium and thorium isotopes detected above BVs near the base of the disposal shafts (units Qbt 1v and Qbt 1g), all maximum values were less than two times BVs, with most values within 20% of the BV.

Anthropogenic radionuclides detected in subsurface samples were americium-241, plutonium-238, plutonium-239, and strontium-90. The detections of these anthropogenic radionuclides generally occurred sporadically across the site, with americium-241 detected in 10 of 38 boreholes, plutonium-238 in 3 of 38 boreholes, plutonium-239 in 8 of 38 boreholes, and strontium-90 in 6 of 38 boreholes. Plutonium-239 was detected in multiple samples from four boreholes at low levels ranging from 0.1 pCi/g to 0.3 pCi/g: BH 14 (location 54-24374 between Trenches B and C), BH 4 (an angled borehole extending beneath Pits 8, 9, and 10 at location 54-24363), BH 26 (location 54-24386 between Pits 5 and 6), and BH 37 (location 54-24397 at the southern edge of trenches B and C).

The results of quarterly monitoring show VOCs and tritium concentrations to be stable over time and do not indicate that the plume is expanding.

The analytical results from the pore-gas samples collected from 38 boreholes drilled in 2005 confirmed the presence of tritium and VOCs (consisting primarily of chlorinated hydrocarbons) in the vadose zone beneath MDA G. Data collected during the Phase I RFI, quarterly monitoring, and the 2005 investigation indicate that the highest VOC concentrations are beneath the eastern portion of the site, in the vicinity of the shaft field east of Pits 2 and 4.

Sampling results indicated that TCA is the dominant contaminant in pore gas beneath MDA G. The highest concentration of TCA was detected in BH 18 (location 54-24378). TCA concentrations in nearby locations at BHs 28 (54-24388), 19 (54-24379), 26 (54-24386), and 25 (54-24385) were also elevated compared to the rest of the site, indicating the greatest release of TCA is at the east end of MDA G. In addition, results from BH 18 (54-24378), BH 19 (54-24379), and BH 26 (54-24386) show an increase in TCA with depth. Two additional areas of elevated VOCs in pore gas were encountered in the central and western portions of MDA G. The highest levels of TCA in the central and western portions of MDA G were detected in samples collected from BH 30 (54-24390) and BH 34 (54-24394), respectively. Although TCA is still the dominant contaminant in these areas, the relatively higher concentrations of other VOCs, including TCE, Freon-113, and PCE, in these samples indicate releases from different sources. The levels of VOCs in the subsurface vapor in these portions of MDA G are an order of magnitude less than levels in the eastern portion.

No TCA was detected in the pore-gas sample collected at a depth interval of 485 ft to 700 ft from BH 15-3 (54-25105) in a Cerros del Rio basalt layer. An analysis of the chemicals detected in pore-gas samples indicates that the VOC contamination in the eastern, central, and western portions of MDA G may be the result of different sources of VOCs from the disposal units in these areas.

Tritium was detected in pore-gas samples in 35 of 38 boreholes, not including BH 1 (54-24360) for which the data are preliminary. The results from the 2005 field investigation confirm the presence of elevated tritium levels in the south-central portion of MDA G. The maximum tritium concentrations were detected in samples from locations BH 26 (54-24386) and BH 18 (54-24378), located in the eastern portion. Pore-gas monitoring results also confirmed the presence of high concentrations of tritium in the south-central portion of MDA G, beneath Trenches A, B, C and D. These findings appear to represent separate releases, because tritium concentrations decrease with distance and depth from these two portions of MDA G.

Perched groundwater was not encountered beneath MDA G during drilling. Subsurface samples were collected from BHs 15-2 (54-24523) and BHs (54-25105) to evaluate moisture properties and to determine the presence or absence of perched groundwater zones beneath MDA G. Detailed lithological logging of core did not identify visibly saturated zones to a depth of 700 ft. Sixty-two samples were submitted to an off-site contract laboratory for moisture content and matric potential analyses. The results of gravimetric moisture analyses showed moisture levels ranging from 0.2% to 27.2% moisture by weight. Only one sample, from BH 15-2 (54-24523), had a moisture level of 27.2%; all other remaining boreholes had moisture levels of 11.2% or less. Laboratory matric potential readings confirmed that all samples collected beneath MDA G contained moisture levels below saturation. Camera logging conducted in this borehole from approximately 480 ft to 700 ft bgs showed no signs of a perched zone within the Cerros del Rio basalts.

7.4 Summary of Risk Assessment Results

The present-day risk assessments for MDA G concluded that surface and subsurface contamination at the site does not pose a potential unacceptable risk to human health from exposure to ambient air or from inorganic, organic, or radionuclide COPCs in the surface.

Results of the human health risk assessment indicated that present-day noncarcinogenic and carcinogenic risks (0.07 and 1×10^{-8}, respectively) for an industrial site worker were less than NMED's target levels of an HI of 1.0 and cancer risk of 10^{-5} (NMED 2004, 85615). Potential dose for an industrial site worker at MDA G is approximately 1.5 mrem/yr, which is below the DOE's target dose of 15 mrem/yr (DOE 2000, 67489). The equivalent risk for the dose is 2×10^{-5} based on a comparison to EPA radiation preliminary remediation goals (PRGs) for an industrial outdoor worker (http://epa-prgs.ornl.gov/cgi-bin/epa-prgs). In addition, the tritium in ambient air indicates there is no potential unacceptable present day dose to site workers.

Contamination in channel sediment does not pose a potential risk to ecological receptors. Methoxychlor[4,4'-] was detected in 14 sediment samples and had an HQ less than 0.3. Americium-241, cesium-137, cobalt-60, plutonium-238, plutonium-239, and tritium were detected in multiple sediment samples but had HQs less than 0.3. Inorganic chemicals of potential ecological concern (COPECs) were either not detected in channel sediment or had detected concentrations similar to BVs. Potential exposure to the inorganic COPECs is similar to background.

The HI (0.09) from the inhalation ecological screening level comparison to pore-gas VOCs indicates no potential present-day risk to burrowing animals exists.

Based on the results of the Phase I RFI and the 2005 investigation sampling, no additional data are needed to characterize the nature and extent of contaminant releases beneath MDA G.

8.0 RECOMMENDATIONS

The objectives of the approved work plan activities were to

- complete the characterization of nature and extent of contaminant releases at MDA G,
- evaluate the potential ecological and human health risks posed by exposure to COPCs under present-day conditions, and
- recommend a path forward to reduce uncertainties associated with contaminant behavior and ensure that existing COPCs do not pose an unacceptable risk/dose to human and ecological receptors.

Data gathered during the Phase I RFI, data obtained from ongoing quarterly pore-gas monitoring, and data collected during the 2005 investigation under the approved work plan have characterized the nature and extent of contamination in surface and subsurface media at MDA G. The results from the human health and ecological assessments, presented in Appendix G, indicate that the site poses no potential present-day risk/dose to human health and the environment.

Therefore, based on the results of the field investigations, recommended actions are as follows:

- Complete a CME to ensure that future releases from the site pose no unacceptable risks to human and ecological receptors
- Monitor the subsurface vapor plume in accordance with a long-term monitoring plan (Appendix I) as approved by NMED

9.0 REFERENCES AND MAP DATA SOURCES

9.1 References

The following list includes all references cited in this document. Parenthetical information following each reference provides the author, publication date, and the ER identification (ID) number. This information also is included in the citations in the text. ER ID numbers are assigned by the Los Alamos National Laboratory's ENV-ERS Program to track records associated with the Program. These numbers can be used to locate copies of the actual documents at the ENV-ERS Program's Records Processing Facility and, where applicable, with the ENV-ERS Program's reference library titled "Reference Set for Material Disposal Areas, Technical Area 54."

Copies of the reference library are maintained at the NMED Hazardous Waste Bureau; the DOE Los Alamos Site Office; and EPA, Region 6. This library is a living collection of documents that was developed to ensure that the administrative authority has all the necessary material to review the decisions and actions proposed in this document. However, documents previously submitted to the administrative authority are not included.

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9.2 Map Data Sources

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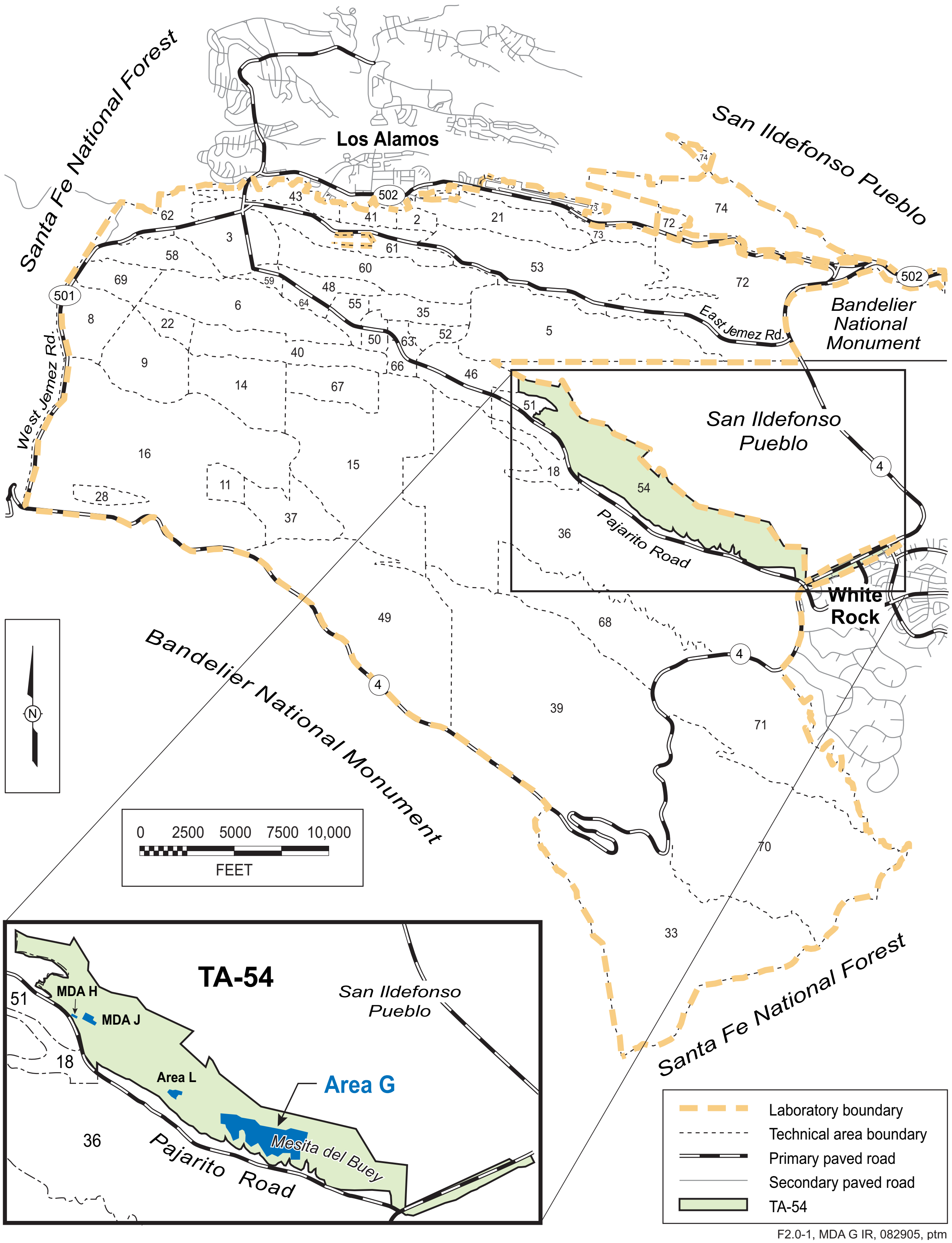

Figure 2.0-1. Location of Area G in TA-54 with respect to Laboratory technical areas and surrounding land holdings

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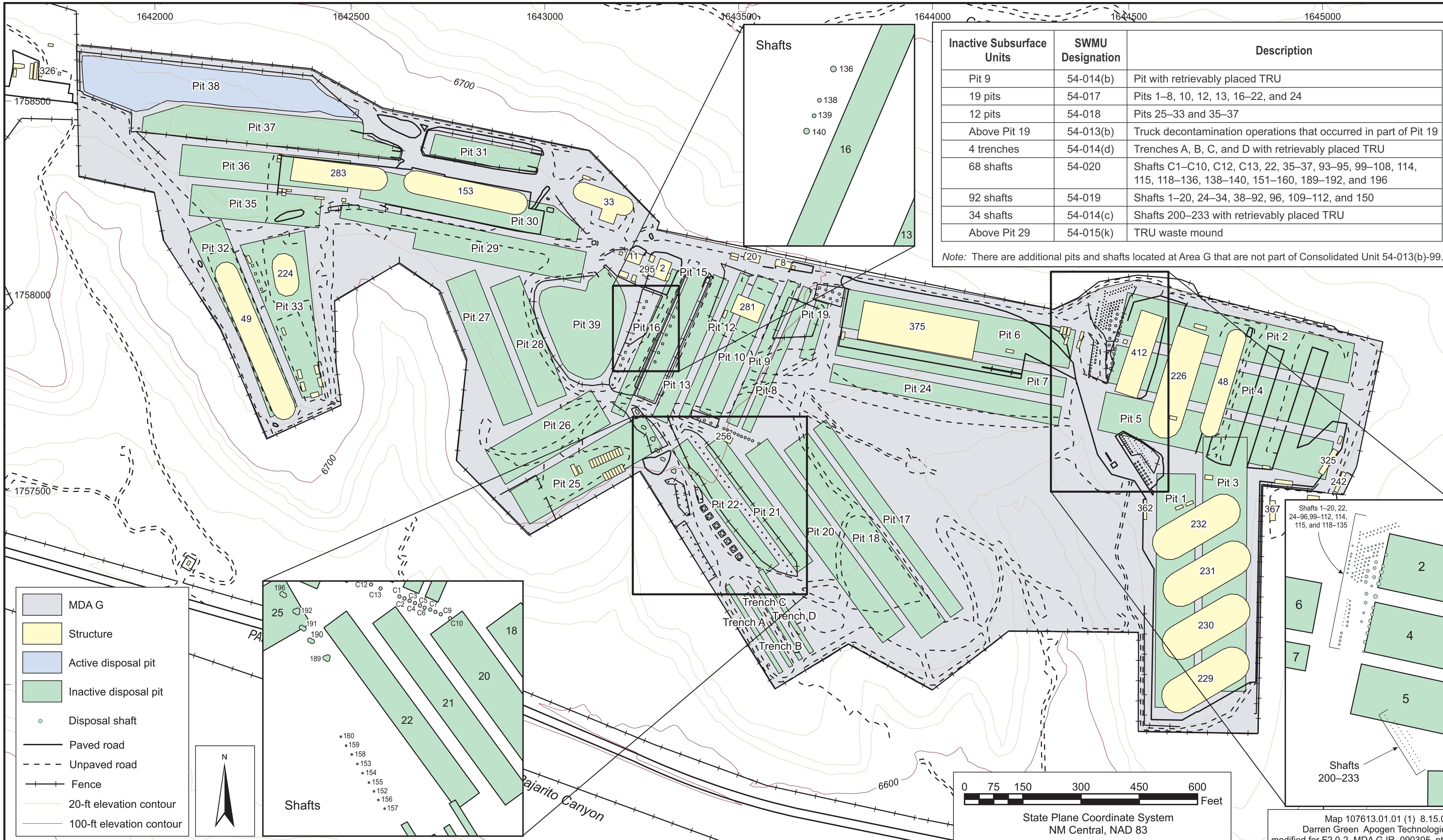

Figure 2.0-2. MDA G waste disposal units

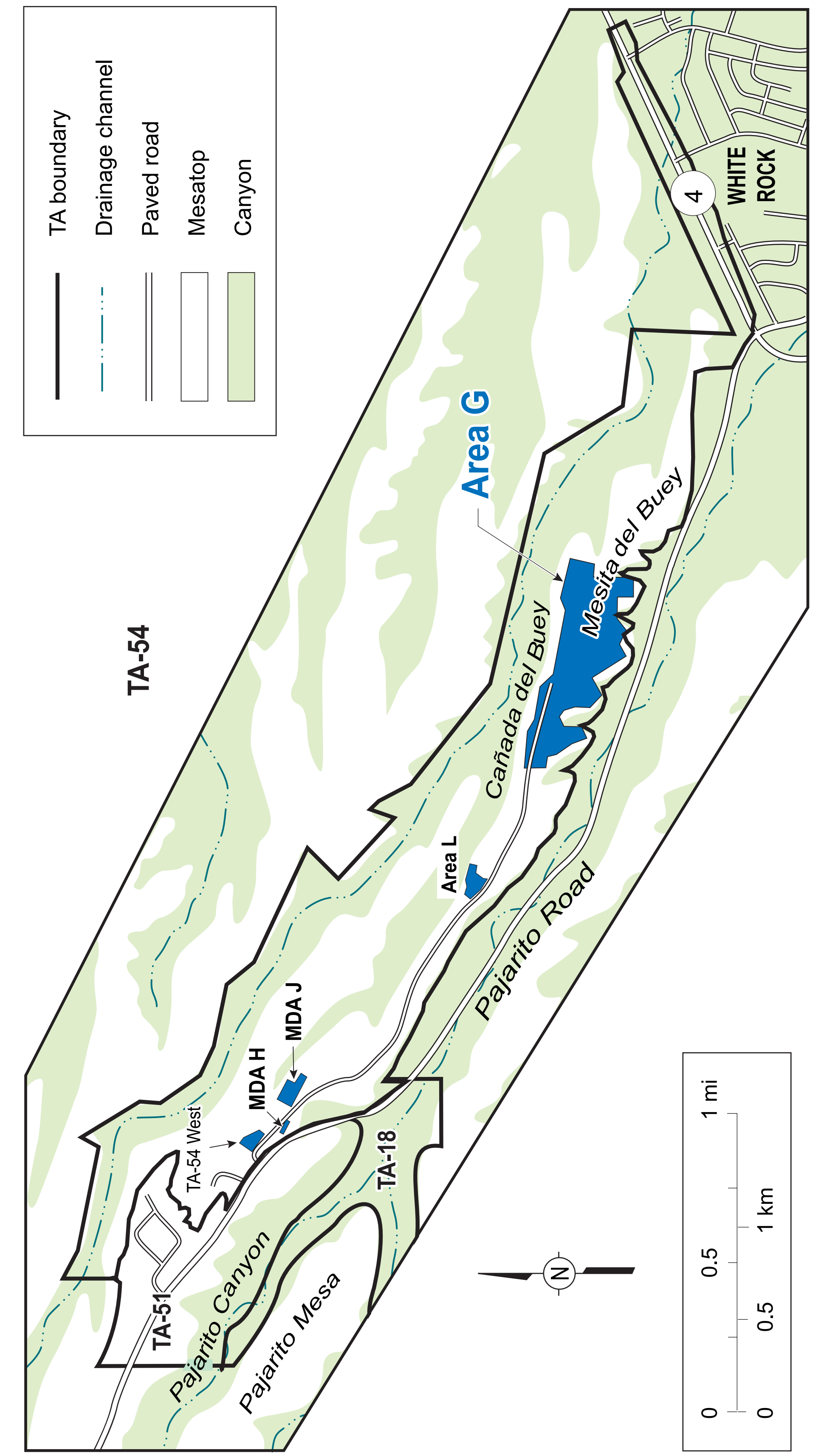

Figure 2.1-1. Location of Area G in TA-54

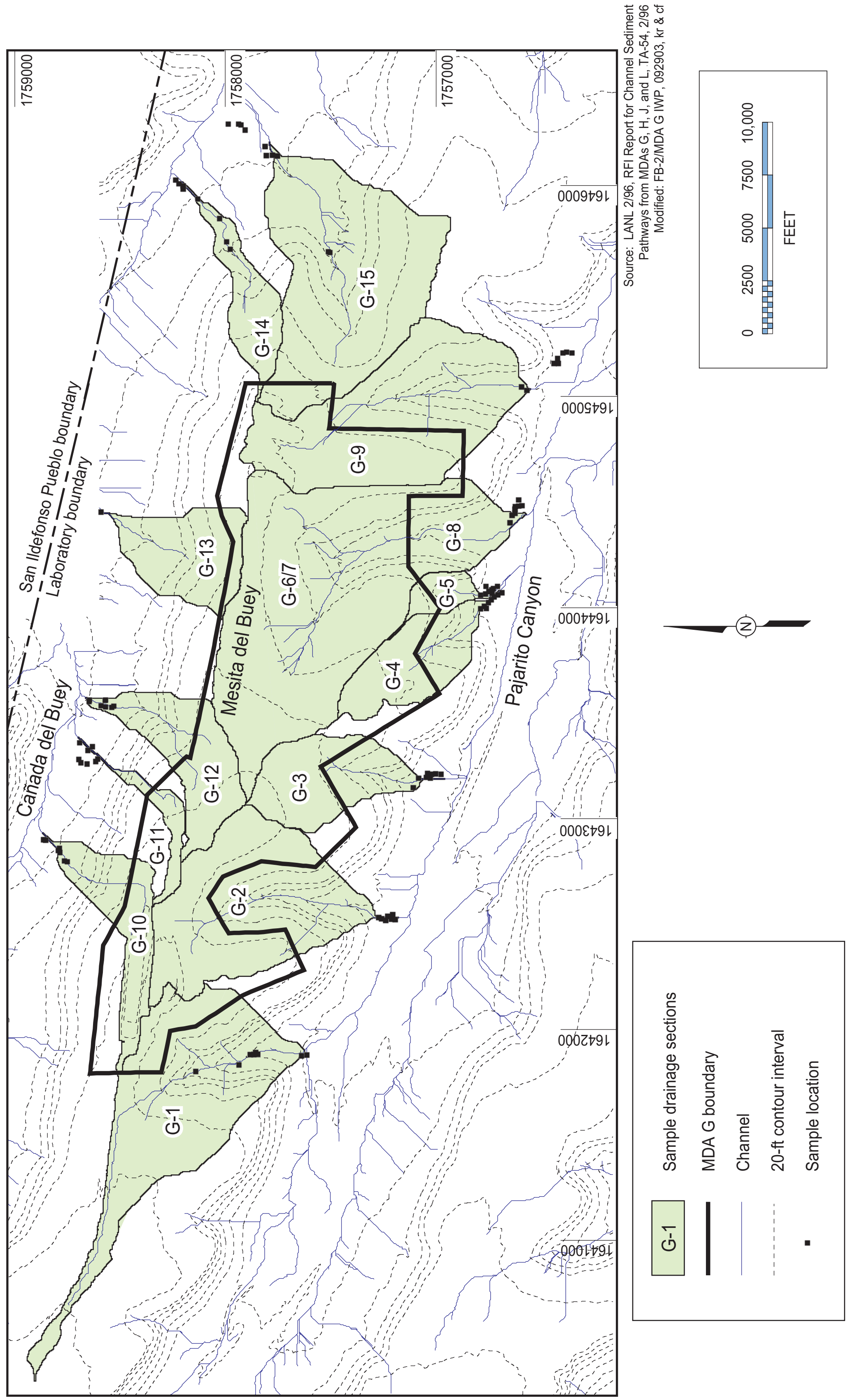

Figure 2.2-1. Locations and designations of Mesita del Buey drainage sections

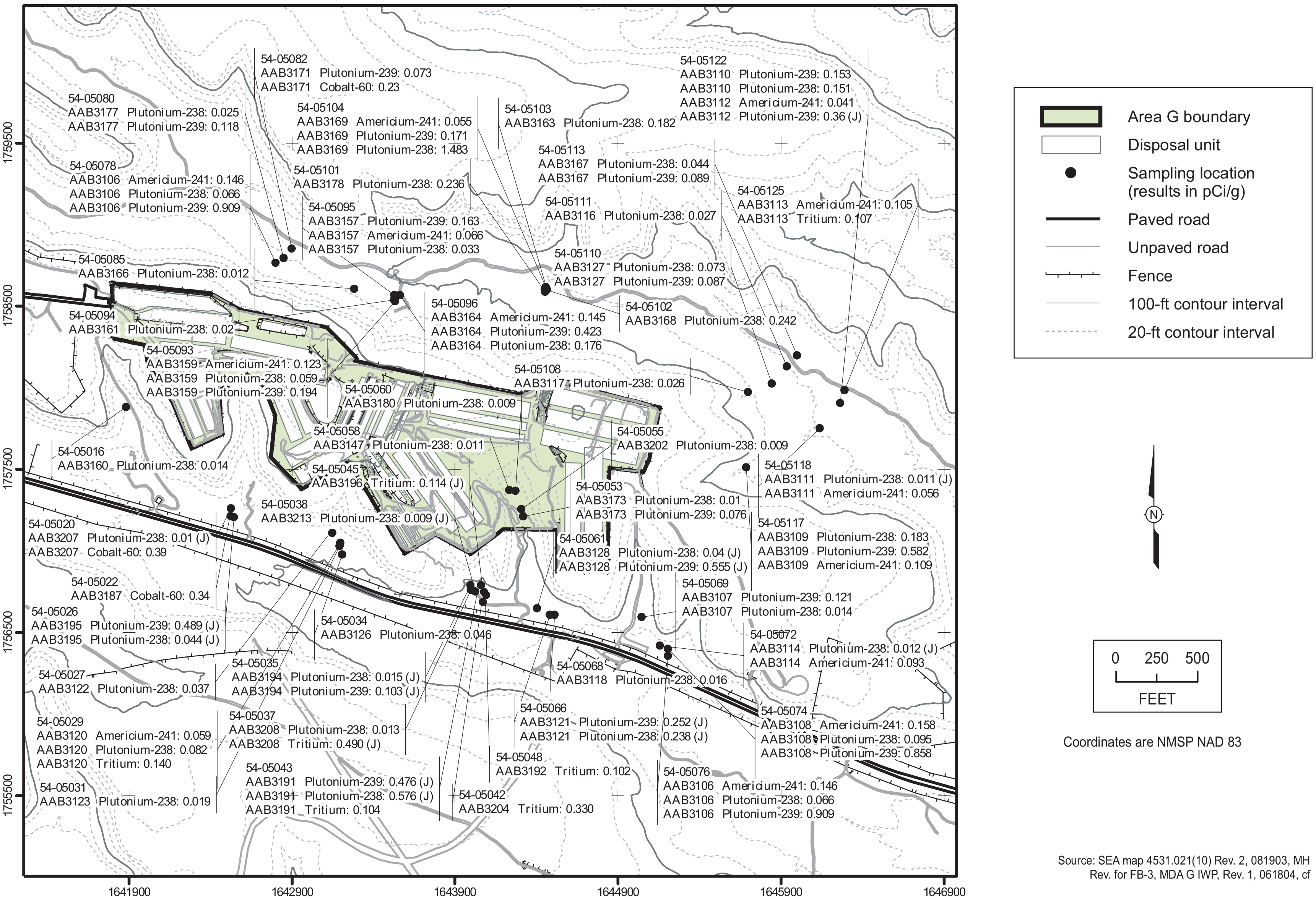

Figure 2.2-2. Radionuclides detected above background in MDA G channel sediments

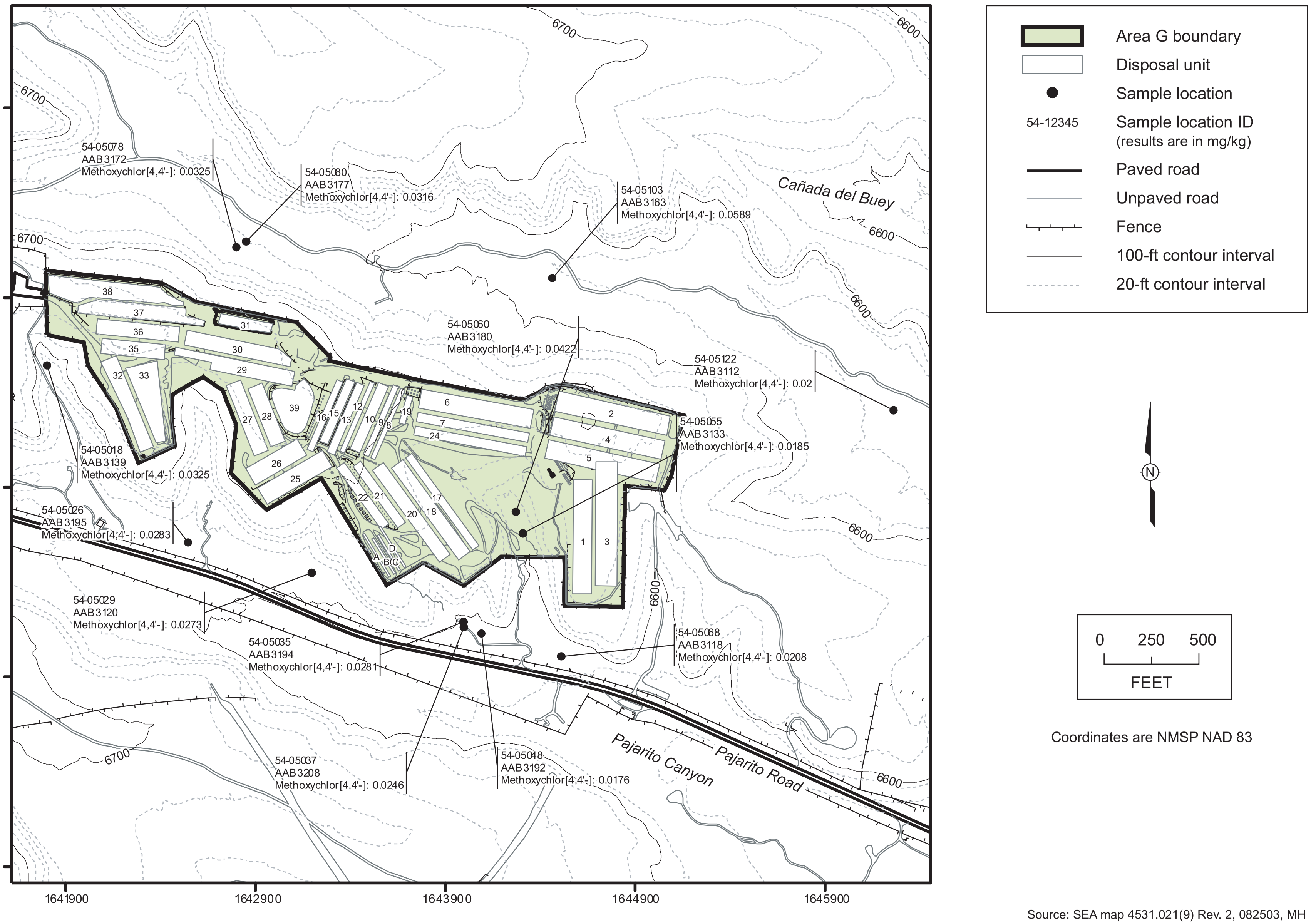

Figure 2.2-3. Organic chemicals detected in channel sediments at Area G

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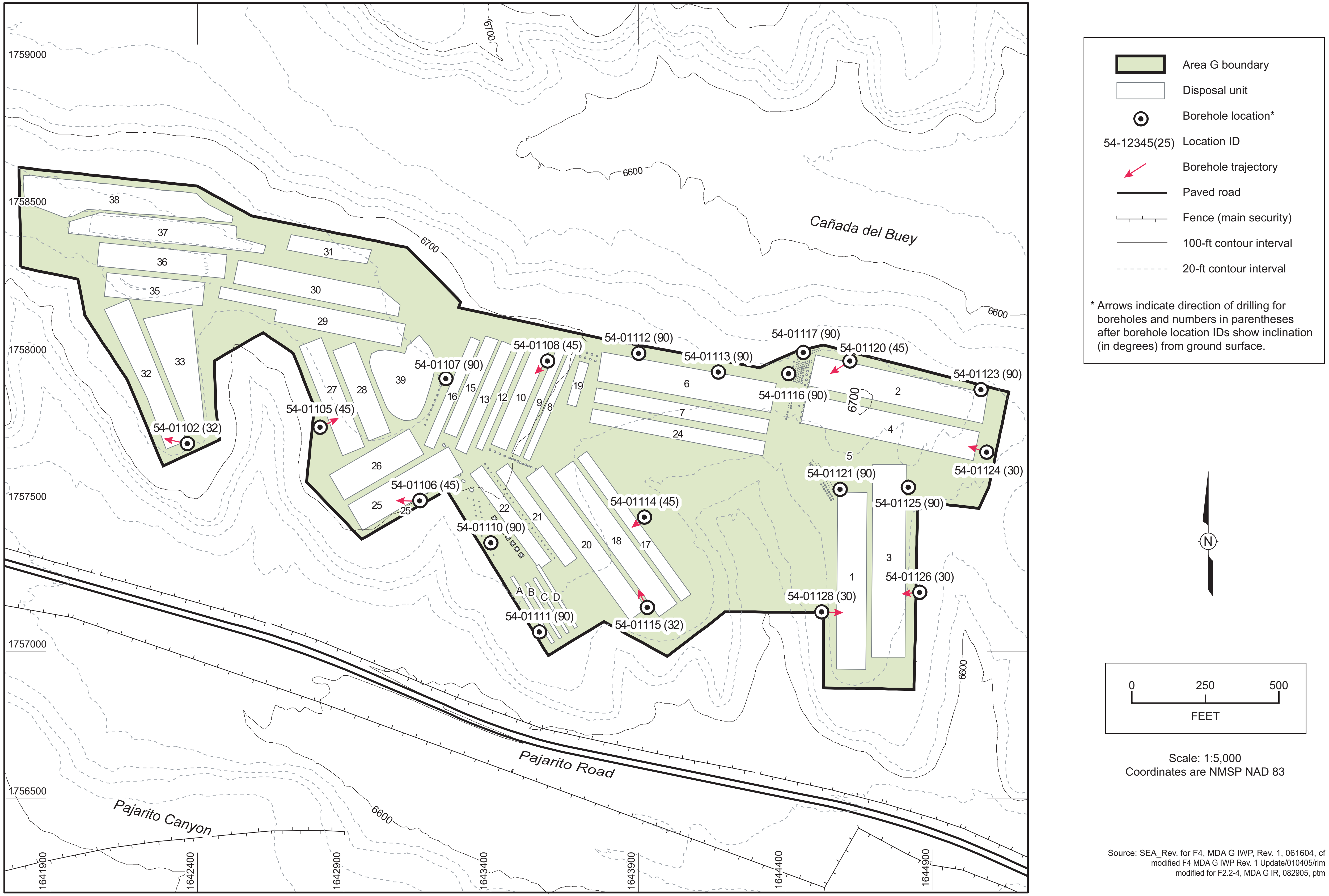

Figure 2.2-4. Locations of MDA G Phase I RFI boreholes

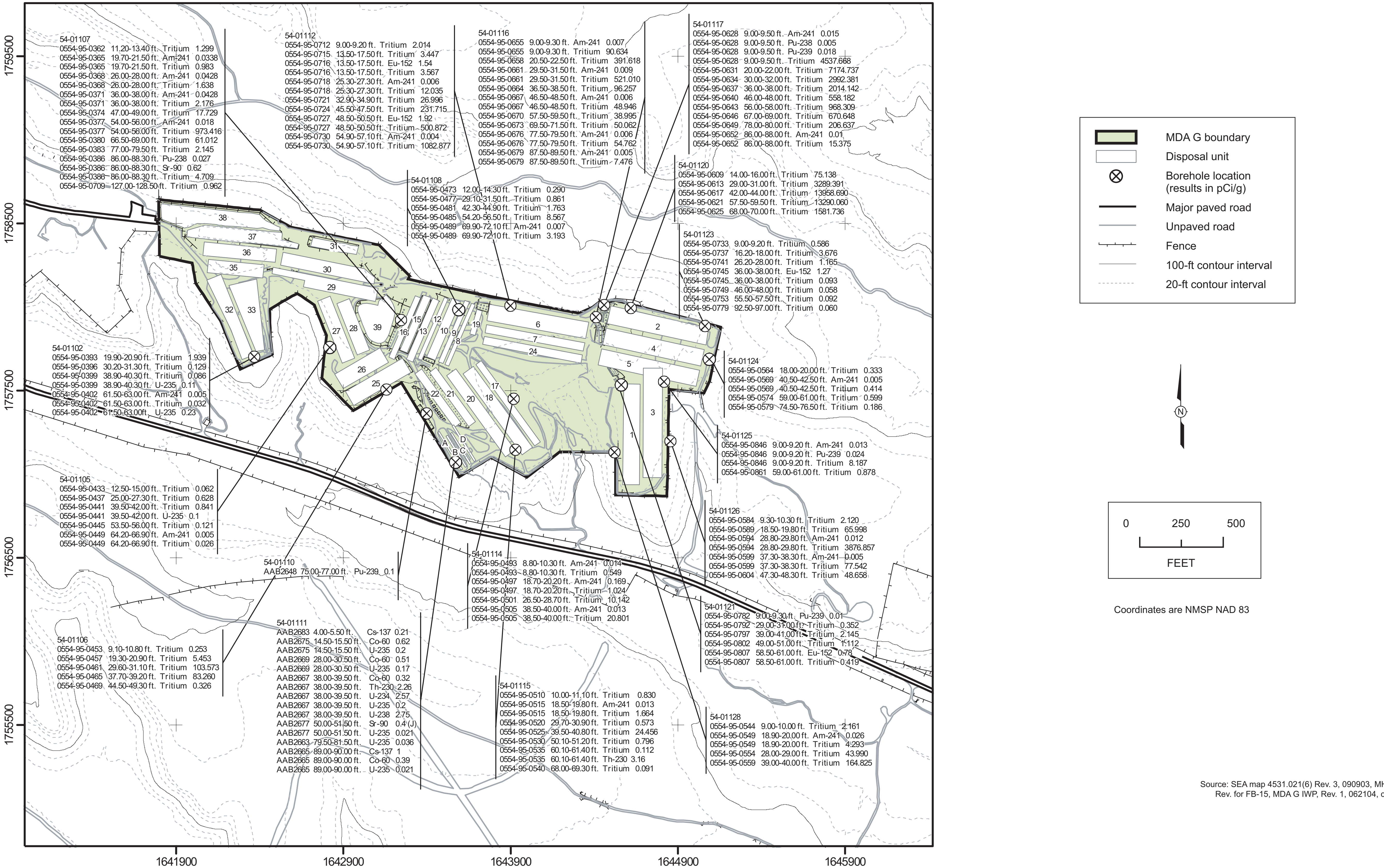

Figure 2.2-5. Radionuclides detected above background in MDA G subsurface tuff

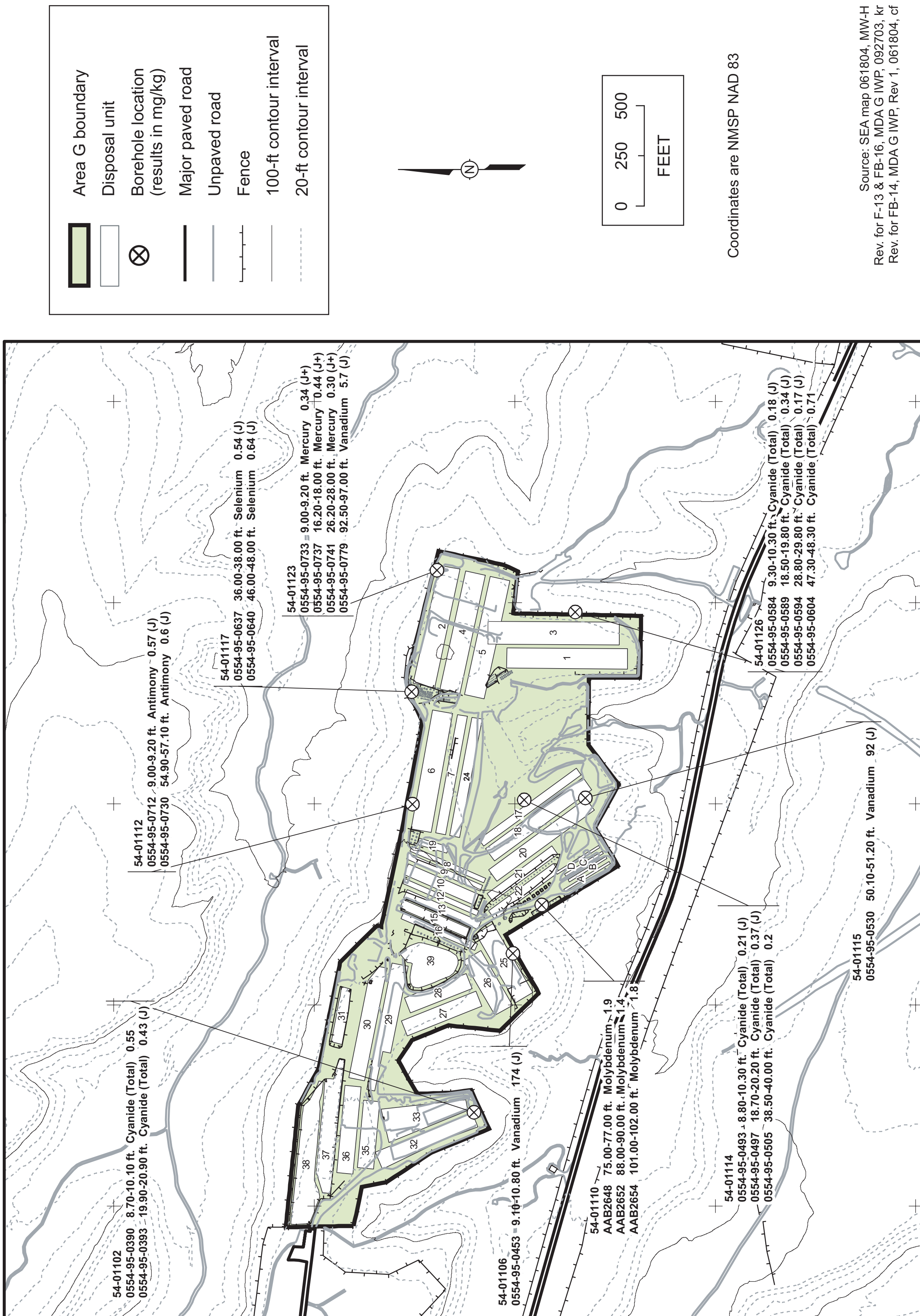

Figure 2.2-6. Inorganic chemicals detected in MDA G subsurface tuff

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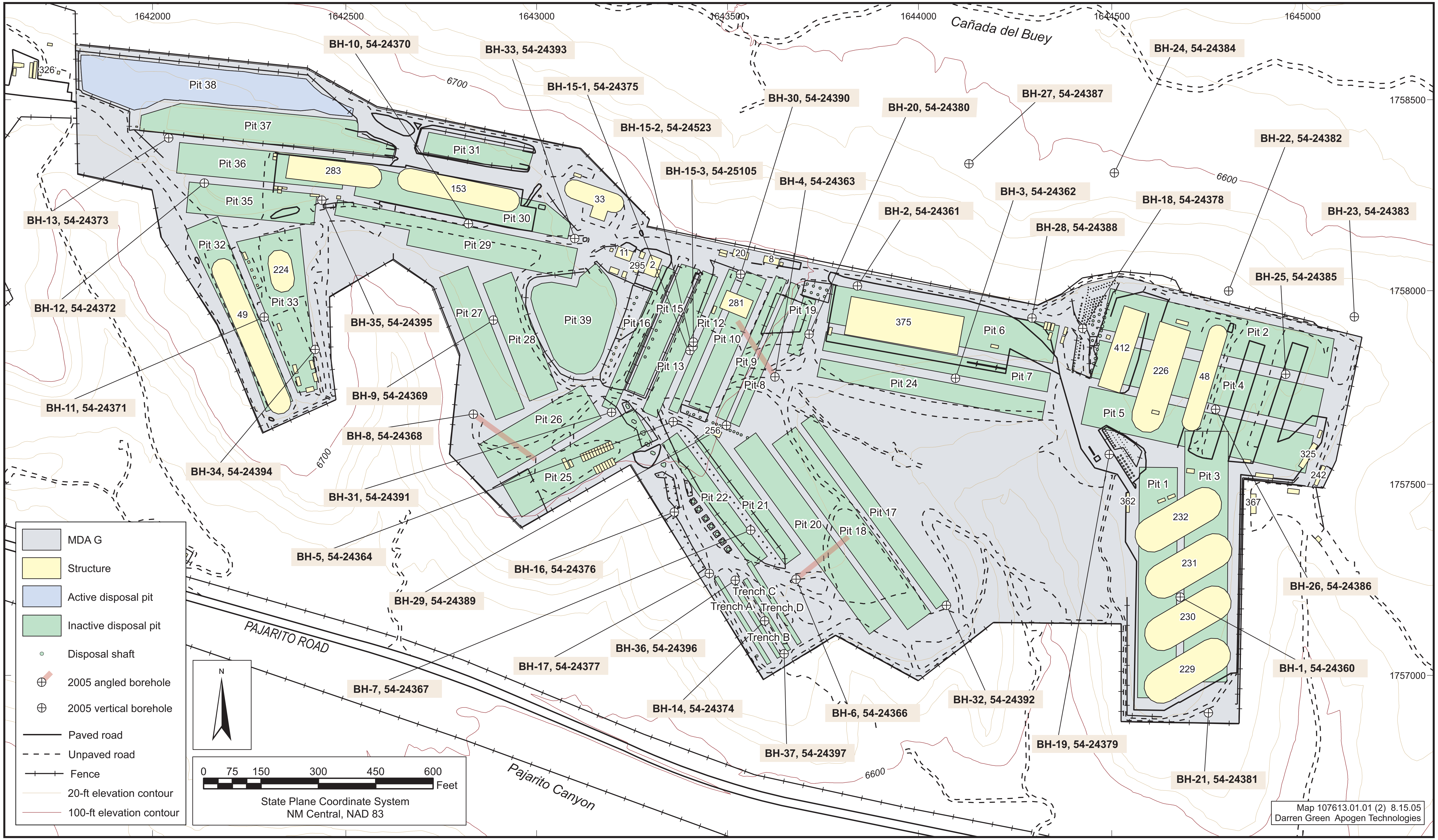

Figure 3.3-1. Locations of boreholes drilled during the MDA G investigation in 2005

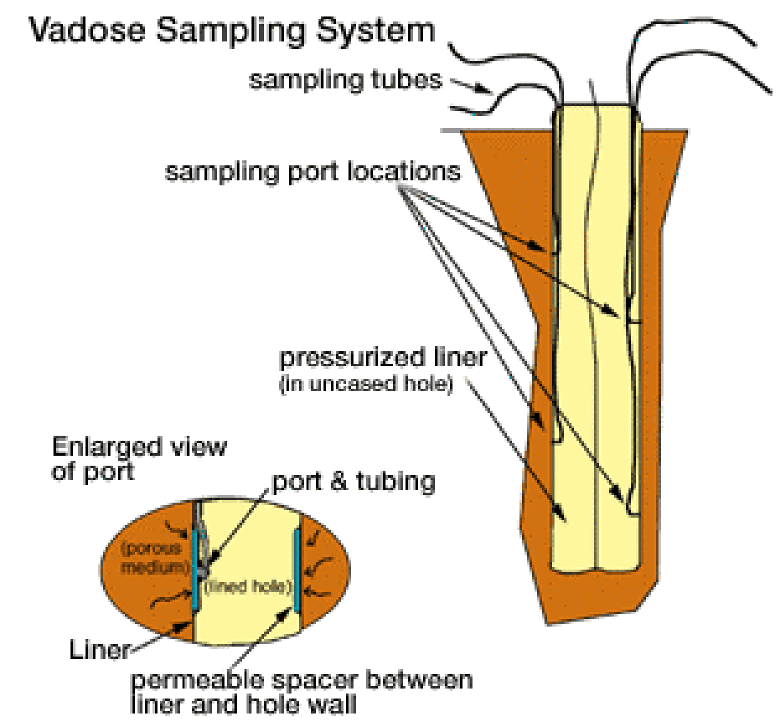

Figure 3.3-2. FLUTe™ membrane liner system for vadose zone pore gas sampling

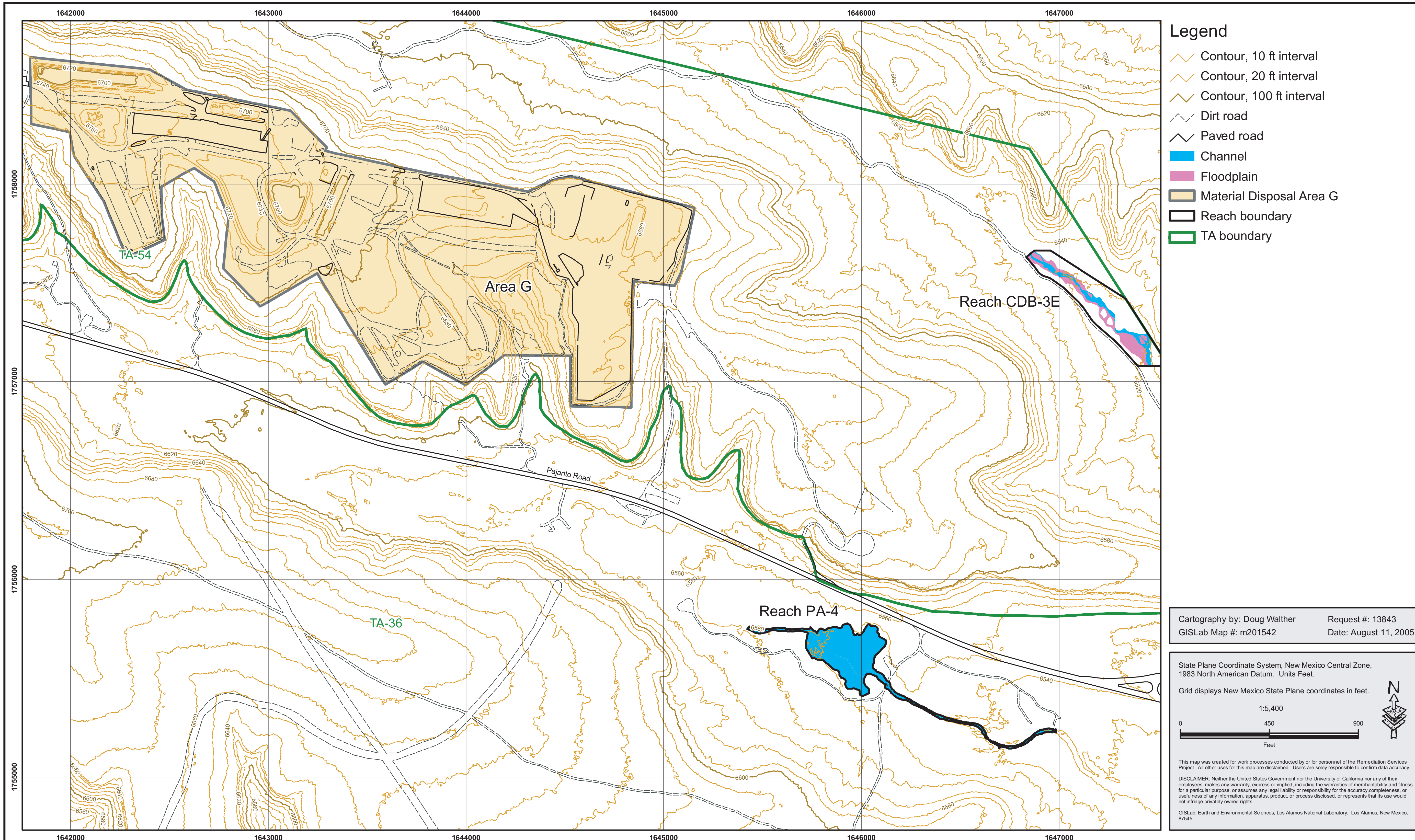

Figure 3.5-1. Locations of reaches CDB-3E and P-A4 in relation to MDA G

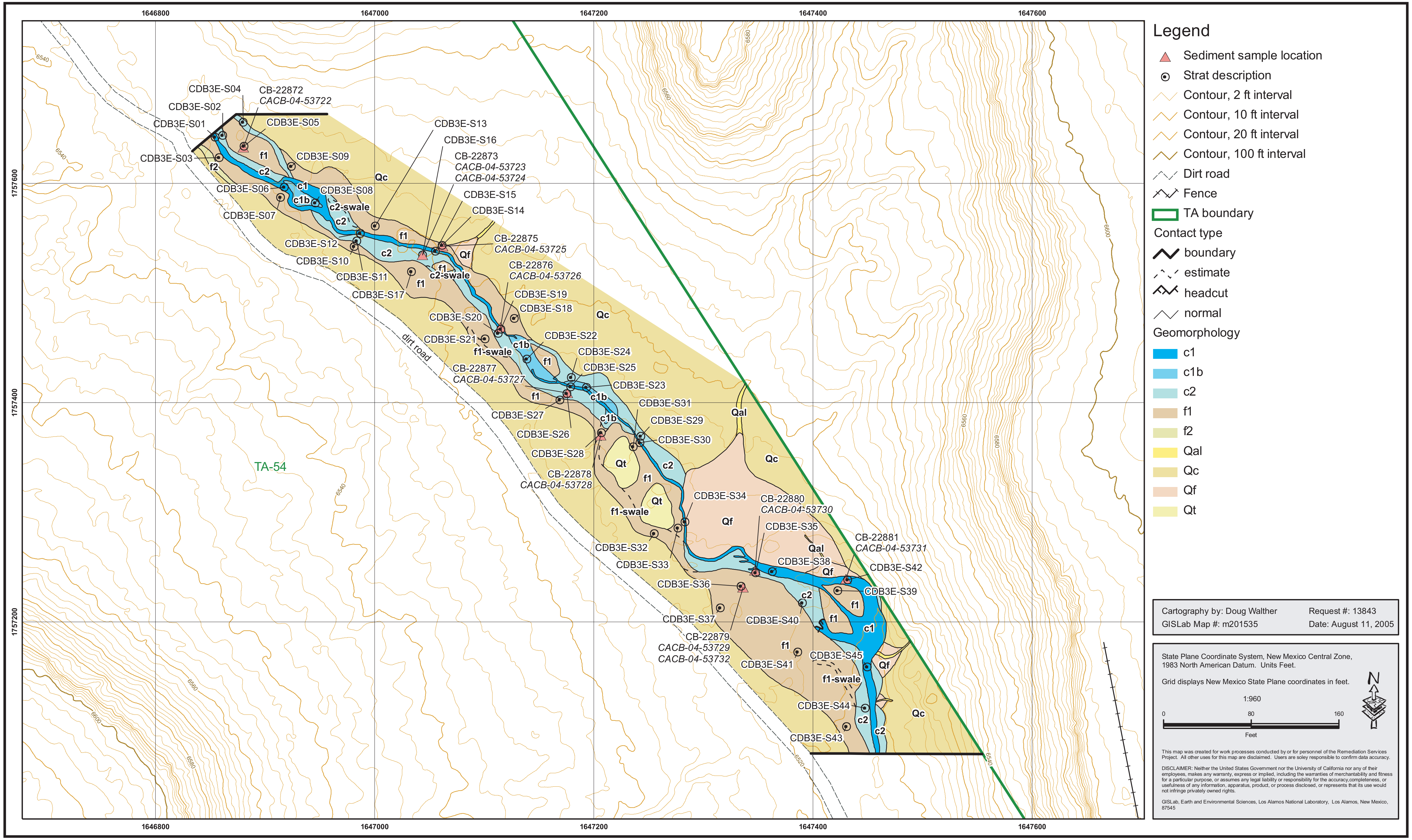

Figure 3.5-2. Cañada del Buey reach CDB-3E geomorphology and sampling locations

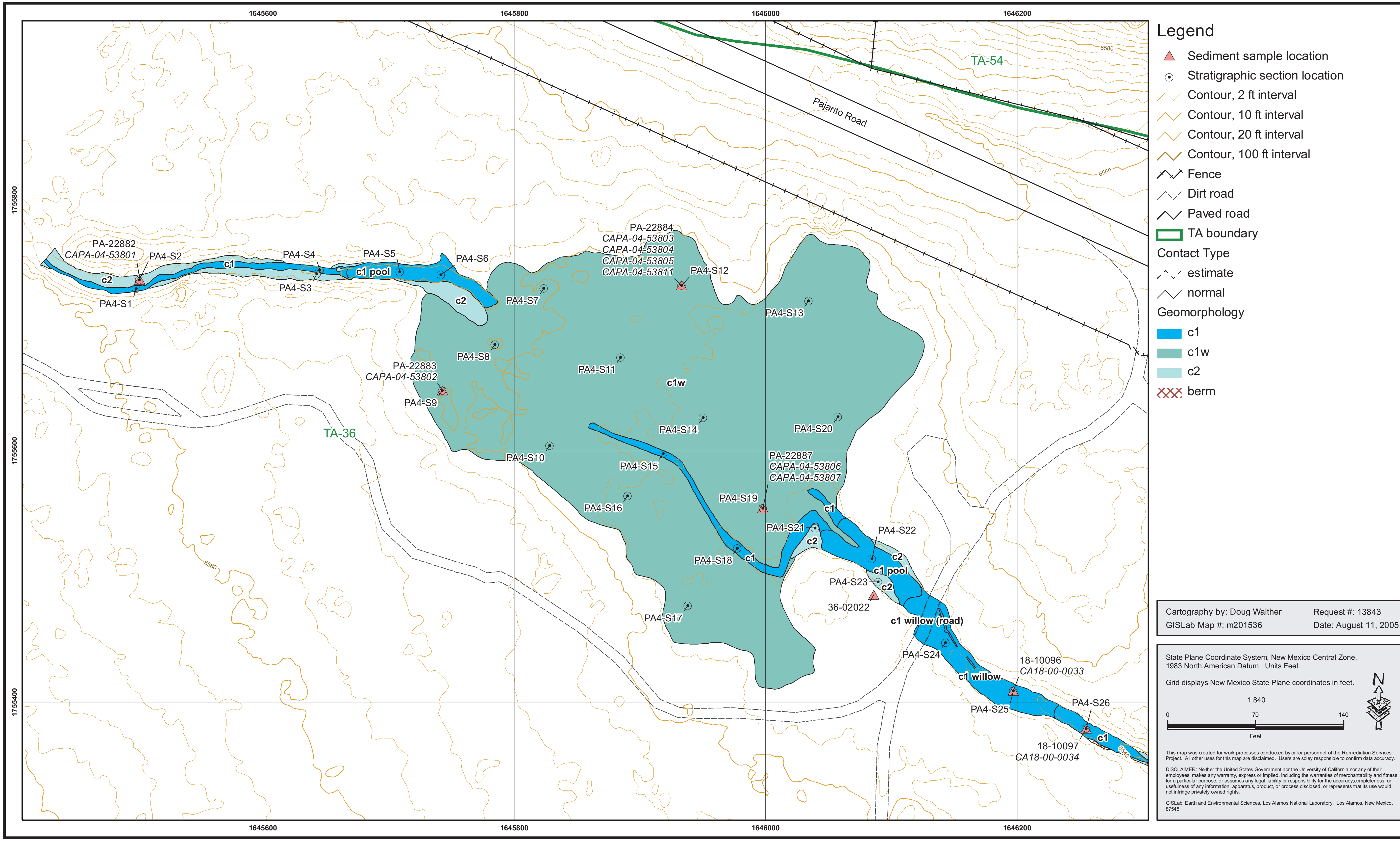

Figure 3.5-3a. Pajarito Canyon upper reach PA-4 geomorphology and sampling locations

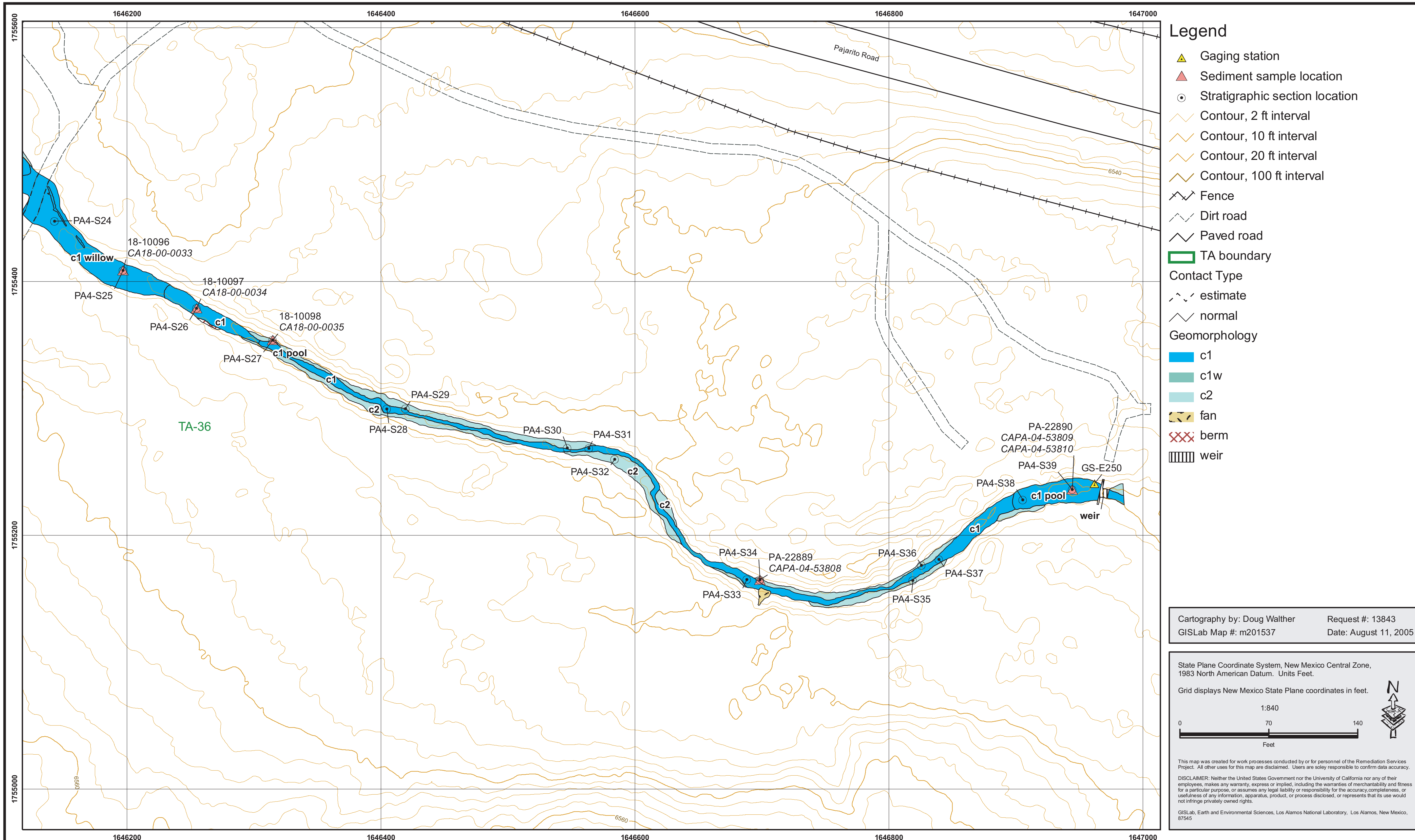

Figure 3.5-3b. Pajarito Canyon lower reach PA-4 geomorphology and sampling locations

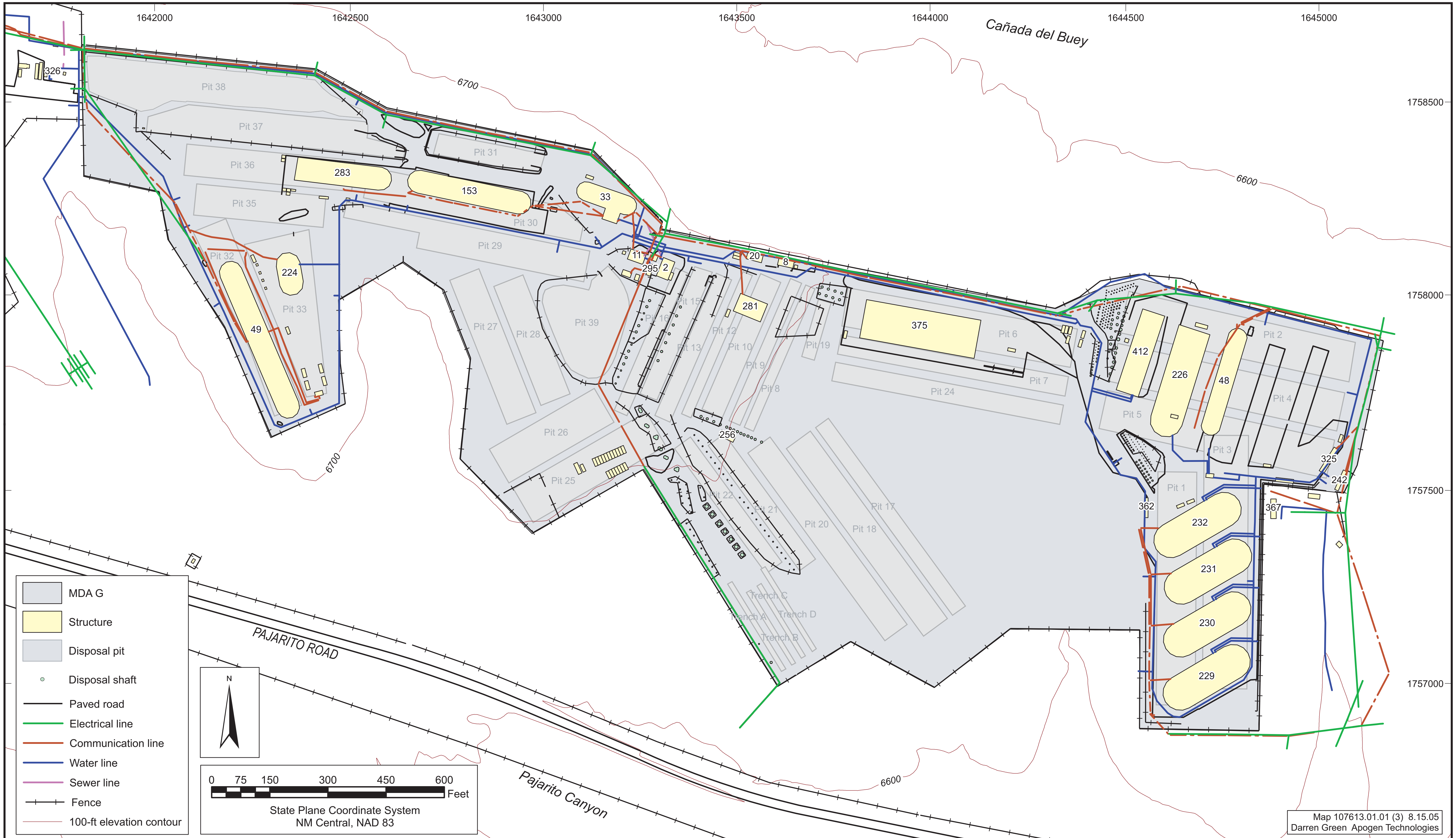

Figure 4.4-1. Utilities and subsurface structures at MDA G

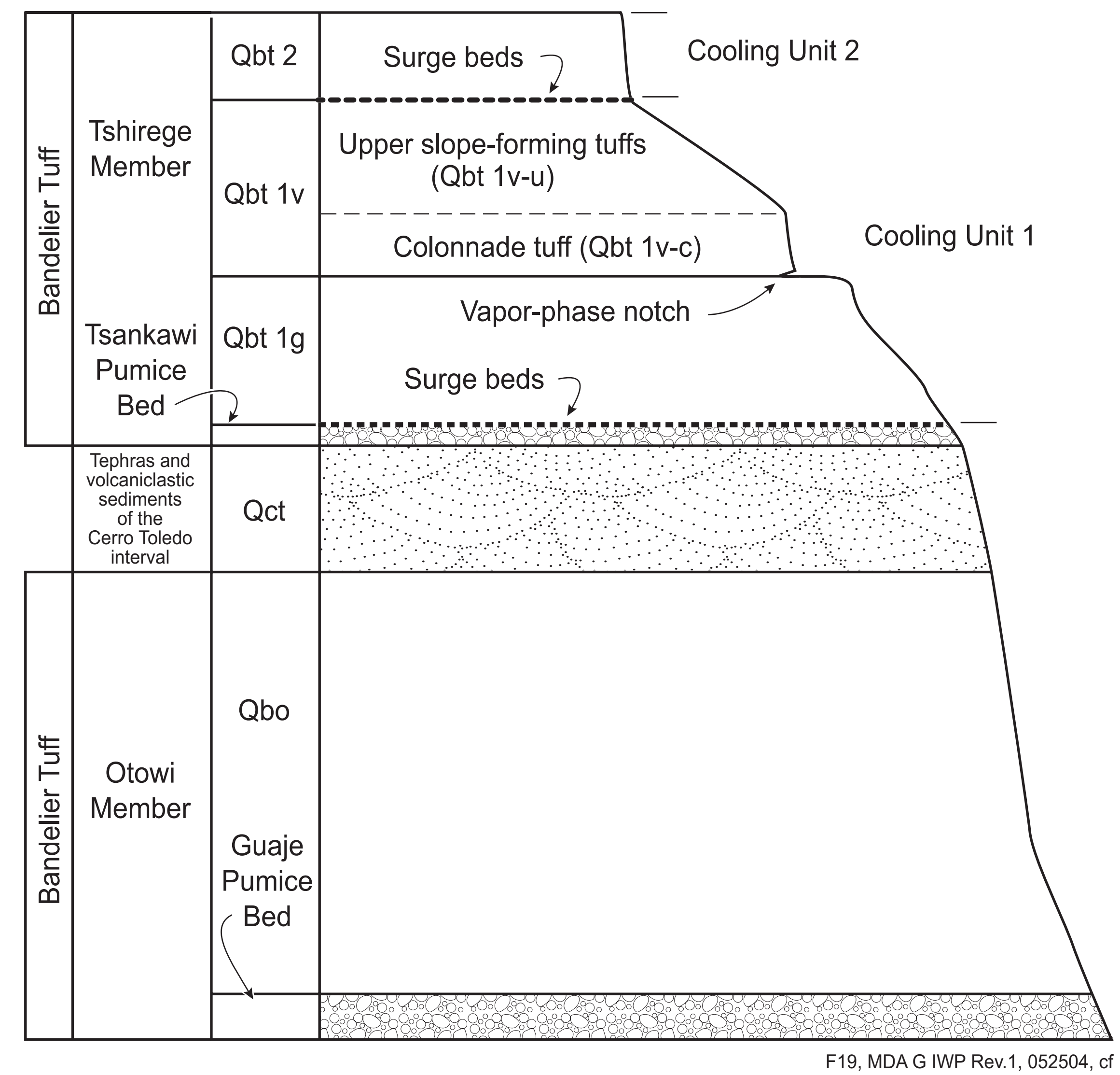

Figure 4.4-2. Generalized stratigraphy of Bandelier Tuff at TA-54

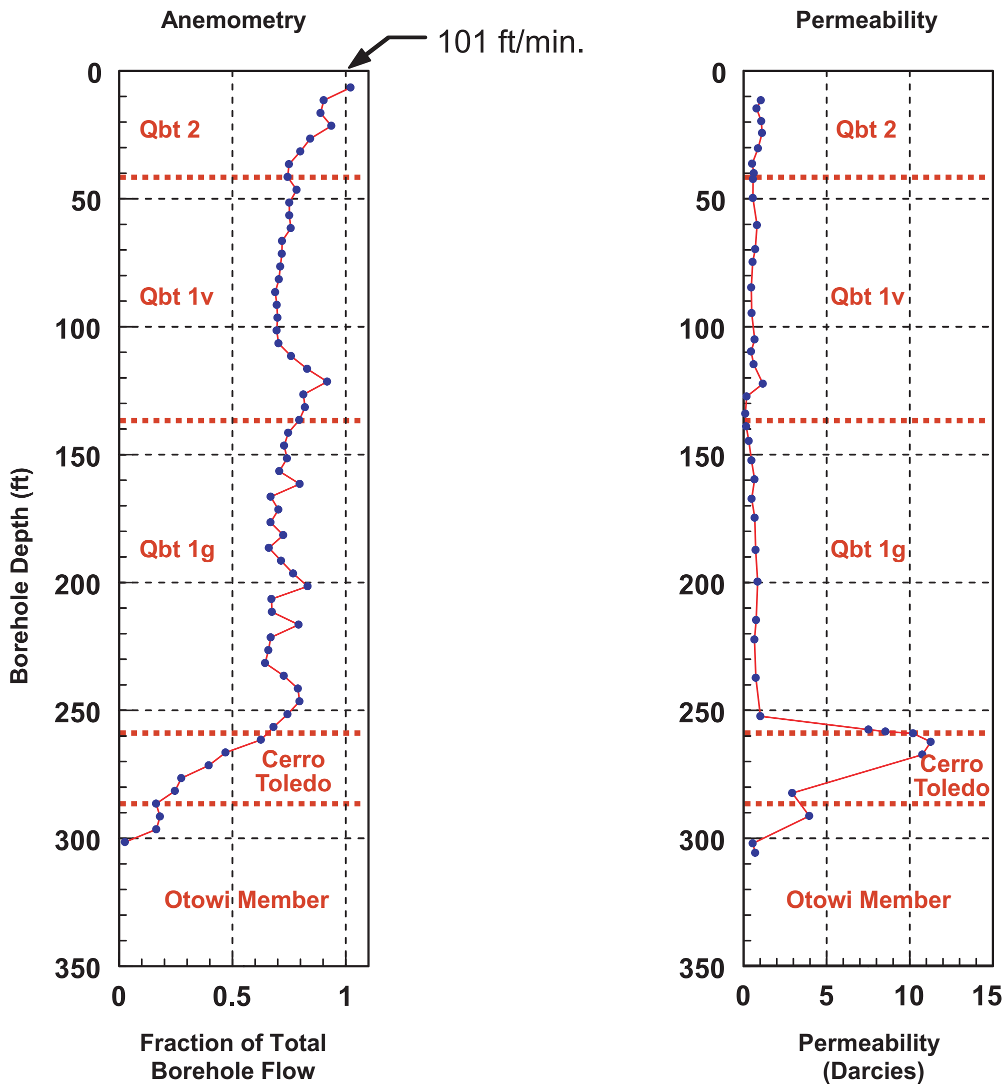

Figure 4.6-1. Borehole 54-01018 anemometry and permeability results

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Table 2.1-1
MDA G Disposal Unit Information for Pits

Pit No.	Operational Period	Dimensions (length x width x depth)	Field Meas. Pit Vol. (yd^3)	Vol. of Waste in Pit (yd^3)	Waste Description
1	Jan. 1959–April 1961	616 ft x 113 ft x 20 ft	37,080	5,529	Wing tanks from Kirtland AFB, Dry boxes, "normal trash." Pit used to burn combustibles
2	April 1961–July 1963	618 ft x 104 ft x 26 ft	42,911	6,407	Classified Bendix waste, 55-gal. drums, property numbers, D-38, hot dirt
3	June 1963–March 1966	655 ft x 115 ft x 33 ft	56,759	9,473	Misc. material, lumber, pipe, 55-gal. drums, D&D, D-38, Bendix classified waste, soil from TA-10 - Bayo Canyon
4	Jan. 1966–Dec. 1967	600 ft x 110 ft x 34 ft	44,950	8,212	D&D, graphite, wooden boxes, D-38, 55-gal. drums, classified Bendix waste, property numbers. Burning trench along south wall of pit
5	Jan. 1967–March 1974	600 ft x 100 ft x 29 ft	41,258	6,624	Scrap material, D&D, graphite hoppers, sludge drums (possibly aqueous solution from TA-50), property numbers
6	Jan. 1970–Aug. 1972	600 ft x 113 ft x 26 ft	43,933	6,696	Misc. scrap, wood, D&D. Covered with topsoil from TA-1 with up to 20 pCi/g Pu contamination
7	March 1974–Oct. 1975	600 ft x 50 ft x 30 ft	17,101	4,343	Low-level TRU waste. Replaced Pit 17 for LL TRU in 1974. Covered with topsoil from TA-1 with up to 20 pCi/g Pu contamination
8	Sept. 1971–May 1974	400 ft x 25 ft x 25 ft	6,528	2,311	55 gal. drums of sludge from H-7 and nonretrievable TRU waste also drums from TA-50 (aqueous and nonretrievable TRU)
9	Nov. 1974–Nov. 1979	400 ft x 30 ft x 20 ft	9,027	na*	Drums and fiberglassed crates containing retrievable TRU wastes (>10 nCi/g Pu-239 or U-233 or >100 nCi/g Pu-238) bottom of pit is paved
10	May 1979–March 1980	380 ft x 57 ft x 27 ft	15,549	4,016	Building debris, lab wastes, sludge drums (from TA-50 dewatering, possibly aqueous)
12	Sept. 1971–Dec. 1975	400 ft x 25 ft x 25 ft	7,303	2,363	Nonretrievable TRU waste. Originally contained retrievable TRU, but was transferred to Pit 9 (30 55-gal. drums)
13	Nov. 1976–Sept. 1977	400 ft x 42 ft x 28 ft	12,107	1,931	Uranium, mixed fission products, mixed activation products. Uranium fission products and induced activity wastes
16	Sept. 1971–Aug. 1975	400 ft x 25 ft x 25 ft	8,081	2,235	Crates and drums containing uranium contaminated wastes

Table 2.1-1 (continued)

Pit No.	Operational Period	Dimensions (length x width x depth)	Field Meas. Pit Vol. (yd³)	Vol. of Waste in Pit (yd³)	Waste Description
17	Aug. 1972–March 1974	600 ft x 46 ft x 24 ft	17,399	4,962	Low-level Pu TRU <10 mCi/g. Misc. scrap wastes, crates, filter plenums
18	Feb. 1978–Aug. 1979	600 ft x 75 ft x 40 ft	46,685	12,358	Contaminated dirt, lab wastes, noncompactible waste, D&D, drums
19	Nov. 1975–Aug. 1979	153 ft x 30 ft x 18 ft	1,371	na	Asbestos and carcinogens, plastic layer placed in bottom
20	Nov. 1975–Oct. 1977	600 ft x 71 ft x 36 ft	37,454	14,899	Lab waste, oil, sludge drums, trash, contaminated dirt
21	Aug. 1972–Dec. 1974	402 ft x 56 ft x 26 ft	13,328	3,607	U, classified material, boxes, drums, scrap metal
22	Sept. 1976–March 1978	413 ft x 56 ft x 33 ft	17,690	3,744	Filter plenum, sludge drums (possibly aqueous from TA-50), lab waste, graphite fuel rods, contaminated dirt
24	July 1975–Nov. 1976	600 ft x 58 ft x 30 ft	23,388	7,327	Graphite, lab wastes, 22 truck loads of soil. Uranium, tritium, mixed fission products, and mixed activation products
25	Jan. 1980–May 1981	395 ft x 103 ft x 39 ft	47,000	6,530	Reactor control rods, D&D, scrap drums, lab wastes, test drums, PCB-contaminated waste forms
26	Feb. 1984–Feb. 1985	310 ft x 100 ft x 36 ft	22,209	4,312	Building debris, TRU culverts, asbestos, alpha box soil, lumber, PCBs
27	May 1981–July 1982	400 ft x 80 ft x 46 ft	26,946	7,441	Lab waste, contaminated soil and pipe, D&D, PCBs, and unknown chemical waste
28	Dec. 1981–April 1983	330 ft x 83 ft x 40 ft	21,381	4,422	Ba nitrate, PCB soil, lab waste, property numbers, transformers, clay pipes, building debris, uranium graphite
29	Oct. 1984–Oct. 1986	658 ft x 80 ft x 50 ft	45,795	9,784	TRU cement paste (recoverable), D&D soil, glove boxes, plywood boxes (4'x4'x8'), asbestos, PCBs, and unknown chemical waste
30	Oct. 1988–June 1990	568 ft x 39 ft x 35 ft	42,843	13,464	Asbestos, PCBs, and unknown chemical waste
31	June 1990–March 2003	280 ft x 52 ft x 25 ft	na	2,702	Asbestos, mixed fission products, and mixed activation products. Currently operational
32	Nov. 1985–Aug. 1987	518 ft x 74 ft x 51 ft	36,364	5,367	PCB asphalt, transformers, contaminated soil, glove boxes, 4'x4'x8' plywood boxes, capacitors, building debris
33	Nov. 1982–July 1984	425 ft x 115 ft x 40 ft	59,930	7,776	Be in stainless steel, lab waste, building debris, asbestos, noncompactible trash, PCBs, and unknown chemical waste

Table 2.1-1 (continued)

Pit No.	Operational Period	Dimensions (length x width x depth)	Field Meas. Pit Vol. (yd^3)	Vol. of Waste in Pit (yd^3)	Waste Description
35	June 1987–Feb. 1988	363 ft x 83 ft x 40 ft	20,957	3,361	CP. Trash, 4'x4'x8' plywood boxes, asbestos, lab waste, PCBs, and unknown chemical waste
36	Jan. 1988–Dec. 1988	435 ft x 83 ft x 43 ft	28,057	4,491	4'x4'x8' plywood boxes, compactable N.N. trash, rubble, building waste, beryllium, and PCB soil (<200 ppm)
37	April 1990–April 1997	731 ft x 83 ft x 61 ft	57,213	24,299	UHTREX reactor vessel and stack, asbestos, PCBs, and unknown chemical waste

*na = No information available.

Table 2.1-2
MDA G Disposal Unit Information for Trenches

Trench No.	Operational Period	Dimensions (length x width x depth)	Waste Description
A	1974	262.5 ft x 12.75 ft x 8 ft	Heat source Pu-238 (80% Pu-238, 16% Pu-239, 3% Pu-239, 1% other) in casks from (1) radiolytic heating, (2) radiolytic gas formation, and (3) radiation emitting from waste. Average of 18 g Pu-238 per cask, with max 40 g Pu-238.
B	1974–1976	218.75 ft x 12.75 ft x 8 ft	
C	na*	218.75 ft x 12.75 ft x 10 ft (est.)	
D	na	250 ft x 12.75 ft x 10 ft (est.)	

*na = No information available.

Table 2.1-3
MDA G Disposal Unit Information for Shafts

Shaft No.	Operational Period	Diameter/ Depth (ft)	Lining	Shaft Volume (ft^3)	Waste Volume (ft^3)	Waste Description
1	1966–1967	2/25	N[a]	78.4	63	Cell trash, irradiated metal, animal tissue
2	1966–1967	2/25	N	78.4	42	DU[b] chips, animal tissue, irradiated Pu cell waste
3	1966–1967	2/25	N	78.4	35	Pu-contaminated Na and metal, neutron generators
4	1967–1968	2/25	N	78.4	44	U-contaminated metal, U-238 samples, DU
5	1967–1968	2/25	N	78.4	29	DU, tritium-contaminated materials, U-238 contaminated metal
6	1967–1968	2/25	N	78.4	21	Tritium-contaminated materials, U-235
7	1967–1968	2/25	N	78.4	52	Animal tissue, PTC waste, tritium DU
8	1968–1969	2/25	N	78.4	na[c]	Pu cell waste, animal tissue, end boxes
9	1968–1969	2/25	N	78.4	70	Hot cell waste, Pu cell waste, EBR-II waste, fuel elements
10	1969	2/25	N	78.4	54	Animal tissue, Pu-239 waste, U-contaminated chemicals
11	1967–1969	3/25	N	176.5	72	Pee Wee waste & trash, U-235 cell waste, graphite
12	1966–1970	3/25	N	176.5	83	Cell waste, rover waste, tritium
13	1966–1970	3/25	N	176.5	122	Animal tissue, EBR hardware, reactor parts
14	1966–1969	1/25	CMP[d]	19.7	na	U-235 vermiculite, neutralized solution HCL+U-235
15	1969–1970	1/25	CMP	19.7	8	Tritium in H_3PO_4, hot cell waste
16	1969	1/25	CMP	19.7	4	Tritium
17	1970–1974	1/25	CMP	19.7	1	Tritium pump, U-235 in Na
18	1970–1973	1/25	CMP	19.7	13	Neutralized NA, Cs-137 + Ba-140
19	1971–1974	1/25	CMP	19.7	3	Pu-239 solution, reacted Pu-239
20	1974–1975	1/25	CMP	19.7	8	Sorbed Pu-239 solution
22	1980–1993	1/25	CMP	19.7	7	Radioactive sources
24	1969–1970	2/25	N	78.4	44	Animal tissue, DU, unloaded fuel elements
25	1969–1971	2/25	N	78.4	45	DU, U-238 residue, U-238 contaminated metal
26	1969–1970	2/25	N	78.4	56	Hot cell trash, fuel elements, DU-contaminated metal
27	1970	2/25	N	78.4	13	Irradiated material, DU-contaminated material
28	1970	2/25	N	78.4	14	LA notebooks, U-235 residues
29	1970–1971	2/25	N	78.4	24	Thermocouple waste, U-235 residue
30	1970–1971	2/25	N	78.4	11	Animal tissue, Pu-239 hot cell waste
31	1970–1971	2/25	N	78.4	47	DU
32	1970–1971	2/25	N	78.4	33	LAMPRE-II lines and valves, animal tissue, irradiated stainless steel

Table 2.1-3 (continued)

Shaft No.	Operational Period	Diameter/ Depth (ft)	Lining	Shaft Volume (ft^3)	Waste Volume (ft^3)	Waste Description
33	1970–1971	2/25	N	78.4	15	Pu-239 hot cell waste
34	1970–1972	6/60	N	1709.2	932	U-contaminated oil
35	1971–1985	3/40	N	282.9	125	Hot cell wastes, animal tissues, herbicide containers, fission products
36	1970–1985	3/40	N	282.9	198	Hot cell wastes, spalation products
37	1970–1985	3/40	N	282.9	198	Animal and chemical wastes
38	1970–1974	3/40	N	282.9	69	Rover reactor parts, LAMPRE-II tank
39	1970–1973	6/60	N	1709.2	537	Tritium contaminated equipment
40	1971	2/25	N	78.4	28	Animal tissue
41	1971–1972	2/25	N	78.4	71	Animal tissue, graphite
42	1972	2/25	N	78.4	56	Animal tissue, U-contaminated metal
43	1971–1972	2/25	N	78.4	43	U-contaminated metal, DU
44	1971–1972	2/25	N	78.4	61	Animal tissue, Pu-239-contaminated vermiculite, DU with graphite
45	1971–1972	2/25	N	78.4	70	Pu-contaminated steel, U-235 residues
46	1972	2/25	N	78.4	38	Animal tissue, Pu-239-contaminated steel
47	1972	2/25	N	78.4	32	Animal tissue, contaminated metal, fuel waste (no vol.)
48	1972	2/25	N	78.4	19	Hot cell trash, fuel waste (no vol.)
49	1972	2/25	N	78.4	21	Animal tissue
50	1974–1976	6/60	N	1709.2	581	Tritium (1,110 Ci)
51	1975	2/25	N	78.4	52	Hot cell waste
52	1975–1976	2/25	N	78.4	6	Pu, U, mixed fission products, mixed activation products, hot cell wastes
53	1975–1976	2/25	N	78.4	3	Mixed fission products, cell wastes, Pu-239, U-235
54	1976	2/25	N	78.4	6	Mixed fission products, cell trash
55	1976–1977	2/25	N	78.4	20	Hot cell trash
56	1977	2/25	N	78.4	11	Cell waste, contaminated parts from Size Reduction Lab
57	1977	2/25	N	78.4	8	Hot cell waste
58	1972–1973	3/25	N	176.5	88	Hot cell waste, DU
59	1973–1974	6/60	N	1709.2	120	Tritium contaminated steel, tools, and waste
60	1972–1974	3/25	N	176.5	128	Oil contaminated with U-235, Pu-239
61	1973–1974	3/25	N	176.5	143	Be waste, U-238 contaminated metal, animal tissue
62	1976	3/25	N	176.5	141	Animal tissue, Pu-238, P-32
63	1976	3/25	N	176.5	28	DU, residues
64	1976–1977	3/25	N	176.5	32	Animal wastes, U-235
65	1976–1977	3/25	N	176.5	123	Classified U wastes, targets, animal tissue

Table 2.1-3 (continued)

Shaft No.	Operational Period	Diameter/ Depth (ft)	Lining	Shaft Volume (ft^3)	Waste Volume (ft^3)	Waste Description
66	1976–1979	3/25	N	176.5	25	Animal tissue
67	1977	2/25	N	78.4	48	Targets, cell trash
68	1977	2/25	N	78.4	23	Cell trash, classified notebooks
69	1977	2/25	N	78.4	20	AC parts from recovery
70	1975–1976	6/60	N	1709.2	917	Contaminated oil
71	1978	2/25	N	78.4	31	No description
72	1972–1973	2/25	N	78.4	61	Irradiated stainless steel, hot cell waste trash
73	1973	2/25	N	78.4	43	Hot cell trash
74	1973	2/25	N	78.4	69	Pu-239 waste
75	1973	2/25	N	78.4	61	Pu-238 waste, cell trash
76	1973–1974	2/25	N	78.4	75	Hot cell trash
77	1973–1974	2/25	N	78.4	33	Hot cell trash, Pu-239 hot cell trash
78	1974–1975	2/25	N	78.4	46	Cell wastes, reactor wastes, irradiated box ends
79	1974–1975	2/25	N	78.4	46	Hot cell waste, irradiated metal
80	1975–1976	2/25	N	78.4	25	Sodalime, Ta-182 chips, animal tissue
81	1976	2/25	N	78.4	na	Animal tissue (12 boxes)
82	1978	3/25	N	176.5	1	Trash, chemical wastes
83	1978	3/25	N	176.5	44	Animal tissue, DU
84	1978	3/25	N	176.5	17.3	Trash from Size Reduction Lab, cell trash
85	1978	3/25	N	176.5	12	Neutralized Na Dowanol, cell trash
86	1977	3/25	N	176.5	22	Spalation products, classified materials
87	1977	2/25	N	78.4	23	Cell wastes
88	1977	2/25	N	78.4	18	Cell wastes
89	1977–1978	2/25	N	78.4	12	Animal tissue (5 boxes), cell waste
90	1978	2/25	N	78.4	25	DU, hot cell trash
91	1977–1978	3/50	N	353.4	54	Spalation products, animal waste, cell trash, trash cans
92	1977–1978	3/50	N	353.4	60	Spalation products, uranyl-nitrate in HNO_3
93	1978–1984	3/50	N	353.4	139	Spalation products, fuel elements, cell waste, animal tissues
94	1978–1984	3/50	N	353.4	29	Hot cell waste, DU, control rods
95	1984	3/50	N	353.4	142	Cell wastes, animal tissues
96	1977–1979	6/50	N	1413.6	438	U-contaminated oil, nibbium, zirconium, chlorides, aluminum shell
99	1983–1984	3/60	N	424.1	189	Hot cell wastes, animal tissue, machine parts
100	1983	3/60	N	424.1	3	Hot cell waste, target and stinger
101	1980–1981	3/60	N	424.1	75	Spalation products, hot cell waste
102	1982–1983	3/60	N	424.1	184	No description

Table 2.1-3 (continued)

Shaft No.	Operational Period	Diameter/ Depth (ft)	Lining	Shaft Volume (ft^3)	Waste Volume (ft^3)	Waste Description
103	1981–1982	3/60	N	424.1	118	Hot cell waste, spent fuel elements
104	1982	3/60	N	424.1	10	U chips, scrap metal
105	1982–1983	3/60	N	424.1	2	Animal tissue
106	1980–1981	3/60	N	424.1	69	Spalation products, hot cell waste
107	1978–1981	3/60	N	424.1	27	Hot trash, animal tissue, chemical waste
108	1980–1982	3/60	N	424.1	230	Spalation products, solvent, animal tissue
109	1980	2/60	N	188.5	83	Spalation products, trash cans
110	1979	3/60	N	424.1	128	Spalation products, animal tissue, mixed combustible trash
111	1979–1980	2/60	N	188.5	134	Cell waste, spalation products, niobium and tantalum perchloride
112	1978–1979	3/60	N	424.1	149	Classified pieces, animal waste, cell waste, spalation products
114	1979–1982	6/60	N	1696.5	981	Shielding blocks, graphite design assembly
115	1979–1982	6/60	N	1696.5	539	Hot trash, tritium scrap
118	1983–1984	8/62	N	3267.3	461	Vials
119	1983	8/62	N	3116.5	549	DU chips, hydrocarbons, HF leach solids
120	1983–1984	8/63	N	3116.6	531	Shielding blocks, graphite design assembly
121	1984–1985	4/60	N	753.9	245	Animal tissue, cell trash
122	1984–1985	4/60	N	753.9	258	Hot cell waste, waste cans
123	1984	6/60	N	1696.5	516	DU chips and turnings, firing residue
124	1984–1991	6/65	N	1837.7	491	Vials, organics
125	1984	6/65	N	1837.7	597	DU chips and turnings
126	1985–1987	6/65	N	1837.7	781	Meson and hot cell waste
127	1985	6/65	N	1837.7	484	DU chips and turnings, U3 08 oil and wax
128	1985–1986	6/65	N	1837.7	417	Animal tissue, mustargem
129	1986	3/65	N	459.4	136	Mixed spalation products
130	1986–1987	6/65	N	1837.7	1110	DU chips, metal trash
131	1987–1995	6/65	N	1837.7	438	Activated shielding
132	1987–1993	6/65	N	1837.7	634	Classified material
133	1986–1987	4/65	N	816.8	96	Spalation products, hot cell waste
134	1986	3/65	N	459.4	239	Animal tissue
135	1986–1987	3/65	N	459.4	219	Animal tissue
136	1986–1995	6/65	N	1837.7	50	Low-level tritium
138	1987–1989	4/60	N	753.9	191	Animal tissue
139	1987–1988	4/60	N	753.9	308	Hot cell waste
140	1987–1991	6/61	N	1724.7	869	Animal tissue
150	1976–1979	6/60	CMPAC[e]	1696.5	86	Low-level tritium

Table 2.1-3 (continued)

Shaft No.	Operational Period	Diameter/ Depth (ft)	Lining	Shaft Volume (ft³)	Waste Volume (ft³)	Waste Description
151	1979–1986	3/60	CMPAC	424.1	131	Low-level tritium
152	1980–1983	3/60	CMPAC	424.1	147	Tritium scrap, tubing, hardware
153	1983–1984	3/60	CMPAC	424.1	12	Contaminated pump, property numbers
154	1984–1986	3/65	CMPAC	459.4	135	High-level tritium, molecular sieves
155	1988–1989	3/65	CMPAC	459.4	137	High-level tritium
156	1986–1987	3/45	CMPAC	318.2	59	Dry box trash, molecular sieves
157	1987–1988	3/45	CMPAC	318.2	88	Tritium
158	1989–1998	2/45	CMPAC	141.2	78	High-level tritium
159	1989	2/45	CMPAC	141.2	12	High-level tritium
160	1990–1993	2/45	CMPAC	141.2	89	High-level tritium
189	1987–1988	8/65	N	3267.3	1743	LAMPF activated shielding (triple shaft)
190	1983–1984	8/65	N	3267.3	1077	Scrap metal
191	1984–1986	8/65	N	3267.3	1470	LAMPF scrap metal, graphite target (double shaft)
192	1987–1989	8/65	N	3267.3	1537	LAMPF scrap metal (triple shaft)
196	1989–1993	6/53	N	2997.5	2050	LAMPF inerts
200	1980–1981	1/18	SPI[f]	56.5	44	Hot cell wastes
201	1978–1979	1/18	SPI	56.5	39	Hot cell wastes
202	1980	1/18	SPI	56.5	43	Hot cell wastes
203	1980	1/18	SPI	56.5	43	Hot cell wastes
204	1978–1979	1/18	SPI	56.5	38	Hot cell wastes, fuel cans
205	1980	1/18	SPI	56.5	45	Hot cell wastes, trash, fuel cans
206	1980–1981	1/18	SPI	56.5	67	Cell trash and fuel sample
207	1981	1/18	SPI	56.5	48	Cell trash, fuel cells
208	1981	1/18	SPI	56.5	48	Hot cell trash, waste
209	1981	1/18	SPI	56.5	48	Hot cell paint, trash
210	1981	1/18	SPI	56.5	48	Hot cell trash
211	1981	1/18	SPI	56.5	48	Hot cell trash
212	1980	1/18	SPI	56.5	75	LAMPF fuel vessel
213	1981	1/18	SPI	56.5	30	Hot cell wastes, trash
214	1982	1/18	SPI	56.5	30	Hot cell wastes
215	1982	1/18	SPI	56.5	30	Hot cell trash
216	1982	1/18	SPI	56.5	30	Hot cell wastes
217	1982	1/18	SPI	56.5	30	Hot cell wastes
218	1982	1/18	SPI	56.5	30	Hot cell wastes
219	1983	1/18	SPI	56.5	30	Hot cell wastes
220	1983	1/18	SPI	56.5	30	Hot cell wastes
221	1983	1/18	SPI	56.5	30	Hot cell wastes

Table 2.1-3 (continued)

Shaft No.	Operational Period	Diameter/ Depth (ft)	Lining	Shaft Volume (ft^3)	Waste Volume (ft^3)	Waste Description
222	1983	1/18	SPI	56.5	30	Hot cell wastes
223	1983	1/18	SPI	56.5	30	Hot cell wastes
224	1985	1/18	SPI	56.5	4	Hot cell wastes
225	1984	1/18	SPI	56.5	4	Hot cell wastes
226	1984	1/18	SPI	56.5	4	Hot cell wastes
227	1984	1/18	SPI	56.5	4	Hot cell wastes
228	1987	1/18	SPI	56.5	1	Hot cell wastes
229	1984	1/18	SPI	56.5	5	Hot cell wastes
230	1984	1/18	SPI	56.5	4	Hot cell wastes
231	1985	1/18	SPI	56.5	4	Hot cell wastes
232	1987	1/18	SPI	56.5	1	Hot cell wastes
233	na	1/18	SPI	56.5	na	Hot cell wastes
C1	na	6/60	N	1696.5	221	PCBs (no liquids)
C2	na	6/60	N	1696.5	357	PCBs (no liquids)
C3	na	6/60	N	1696.5	339	PCBs (no liquids)
C4	na	6/60	N	1696.5	385	PCBs (no liquids)
C5	na	6/60	N	1696.5	258	PCBs (no liquids)
C6	na	6/60	N	1696.5	449	PCBs (no liquids)
C7	na	6/60	N	1696.5	512	PCBs (no liquids)
C8	na	6/60	N	1696.5	498	PCBs (no liquids)
C9	na	6/60	N	1696.5	406	PCBs (no liquids)
C10	1984–1985	6/60	N	1696.5	534	PCBs (no liquids)
C12	1986–1990	6/65	N	1696.5	588	PCBs (no liquids)
C13	1987–1995	6/65	N	1696.5	1060	PCBs (no liquids)

[a] N = No.

[b] DU = Depleted uranium.

[c] na = No information available.

[d] CMP = Corrugated metal pipe.

[e] CMPAC = Corrugated metal pipe asphalt coated.

[f] SPI = Steel pipe insert.

Table 2.2-1
Radionuclides Detected above BVs in MDA G Phase I RFI Channel Sediment Samples

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Cobalt-60	Plutonium-238	Plutonium-239	Tritium
Sediment Background Value				**0.04**	**0.9**	**na**[a]	**0.006**	**0.068**	**0.093**
Industrial SAL (pCi/g)				**180**	**23**	**5.1**	**240**	**210**	**440000**
AAB3143	54-05015	0–0.5	Sediment	—[b]	—	—	—	—	—
AAB3160	54-05016	0–0.5	Sediment	—	—	—	0.014	—	—
AAB3150	54-05017	0–0.5	Sediment	—	—	—	—	—	—
AAB3139	54-05018	0–0.5	Sediment	—	0.99	—	—	—	—
AAB3190	54-05019	0–0.5	Sediment	—	—	—	—	—	—
AAB3207	54-05020	0–0.5	Sediment	—	—	0.39	0.01 (J)	—	—
AAB3187	54-05022	0–0.5	Sediment	—	—	0.34	—	—	—
AAB3195	54-05026	0–0.5	Sediment	—	—	—	0.044 (J)	0.489 (J)	—
AAB3122	54-05027	0–0.5	Sediment	—	—	—	0.037	—	—
AAB3120	54-05029	0–0.5	Sediment	0.059	—	—	0.082	—	0.1402735
AAB3123	54-05031	0–0.5	Sediment	—	—	—	0.019	—	—
AAB3126	54-05034	0–0.5	Sediment	—	—	—	0.046	—	—
AAB3194	54-05035	0–0.83	Sediment	—	—	—	0.015 (J)	0.103 (J)	—
AAB3208	54-05037	0–0.83	Sediment	—	—	—	0.013	—	0.4900508 (J)
AAB3213	54-05038	0–0.83	Sediment	—	—	—	0.009 (J)	—	—
AAB3204	54-05042	0–0.83	Sediment	—	—	—	—	—	0.3298158
AAB3191	54-05043	0–0.83	Sediment	—	—	—	0.576 (J)	0.476 (J)	0.1041099
AAB3196	54-05045	0–0.83	Sediment	—	—	—	—	—	0.1135484 (J)
AAB3192	54-05048	0–0.83	Sediment	—	—	—	—	—	0.1020202
AAB3132	54-05050	0–0.5	Sediment	—	—	—	—	—	—
AAB3173	54-05053	0–0.5	Sediment	—	—	—	0.01	0.076	—
AAB3133	54-05055	0–0.83	Sediment	—	—	—	—	—	—
AAB3202	54-05055	0–0.83	Sediment	—	—	—	0.009	—	—
AAB3147	54-05058	0–0.5	Sediment	—	—	—	0.011	—	—
AAB3180	54-05060	0–0.5	Sediment	—	—	—	0.009	—	—
AAB3128	54-05061	0–0.5	Sediment	—	—	—	0.04 (J)	0.555 (J)	—
AAB3124	54-05063	0–0.5	Sediment	—	—	—	—	—	—
AAB3121	54-05066	0–0.5	Sediment	—	—	—	0.238 (J)	0.252 (J)	—
AAB3118	54-05068	0–0.5	Sediment	—	—	—	0.016	—	—
AAB3107	54-05069	0–0.5	Sediment	—	—	—	0.014	0.121	—
AAB3114	54-05072	0–0.5	Sediment	0.093	—	—	0.012 (J)	—	—
AAB3108	54-05074	0–0.7	Sediment	0.158	—	—	0.095	0.858	—
AAB3106	54-05076	0–0.5	Sediment	0.146	—	—	0.066	0.909	—
AAB3170	54-05077	0–0.5	Sediment	—	—	—	—	—	—

Table 2.2-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Cobalt-60	Plutonium-238	Plutonium-239	Tritium
Sediment Background Value				**0.04**	**0.9**	**na**[a]	**0.006**	**0.068**	**0.093**
Industrial SAL (pCi/g)				**180**	**23**	**5.1**	**240**	**210**	**440000**
AAB3172	54-05078	0–0.25	Sediment	—	—	—	—	—	—
AAB3177	54-05080	0–0.33	Sediment	—	—	—	0.025	0.118	—
AAB3171	54-05082	0–0.5	Sediment	—	1.24	0.23	—	0.073	—
AAB3158	54-05085	0–0.5	Sediment	—	—	—	—	—	—
AAB3166	54-05085	0–0.5	Sediment	—	—	—	0.012	—	—
AAB3155	54-05086	0–0.5	Sediment	—	—	—	—	—	—
AAB3156	54-05088	0–0.33	Sediment	—	—	—	—	—	—
AAB3154	54-05090	0–0.5	Sediment	—	—	—	—	—	—
AAB3159	54-05093	0–0.7	Sediment	0.123	—	—	0.059	0.194	—
AAB3161	54-05094	0–0.5	Sediment	—	—	—	0.02	—	—
AAB3157	54-05095	0–0.7	Sediment	0.066	—	—	0.033	0.163	—
AAB3164	54-05096	0–0.5	Sediment	0.145	—	—	0.176	0.423	—
AAB3178	54-05101	0–0.5	Sediment	—	—	—	0.236	—	—
AAB3168	54-05102	0–0.42	Sediment	—	—	—	0.242	—	—
AAB3163	54-05103	0–0.42	Sediment	—	—	—	0.182	—	—
AAB3169	54-05104	0–0.42	Sediment	0.055	—	—	1.483	0.171	—
AAB3117	54-05108	0–0.5	Sediment	—	—	—	0.026	—	—
AAB3127	54-05110	0–0.4	Sediment	—	—	—	0.073	0.087	—
AAB3116	54-05111	0–0.3	Sediment	—	—	—	0.027	—	—
AAB3167	54-05113	0–0.5	Sediment	—	1.12	—	0.044	0.089	—
AAB3109	54-05117	0–0.5	Sediment	0.109	—	—	0.183	0.582	—
AAB3111	54-05118	0–0.5	Sediment	0.056	—	—	0.011 (J)	—	—
AAB3110	54-05122	0–0.5	Sediment	—	—	—	0.151	0.153	—
AAB3112	54-05122	0–0.5	Sediment	0.041	—	—	—	0.36 (J)	—
AAB3113	54-05125	0–0.5	Sediment	0.105	1.3	—	—	—	0.1069729

Note: All values in pCi/g. See Appendix A for data qualifier definitions.

[a] na = No BV available.

[b] — = Not detected above BV.

Table 2.2-2
Inorganic Chemicals above BVs in MDA G Phase I RFI Channel Sediment Samples

Sample ID	Location ID	Depth (ft)	Media	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Iron	Magnesium	Mercury	Molybdenum	Selenium	Silver
Sediment Background Value				**127**	**1.31**	**na**[a]	**0.4**	**4420**	**10.5**	**4.73**	**13800**	**2370**	**0.1**	**na**	**0.3**	**1**
Industrial Soil Screening Level (mg/kg)				**78300**	**2250**	**61600**	**1130**[b]	[c]	**5000**	**20500**	**100000**	[c]	**340**	**5680**	**5680**	**5680**
AAB3143	54-05015	0–0.5	Sediment	—[d]	—	1.6 (U)	—	—	—	—	—	—	—	5.2 (U)	—	—
AAB3160	54-05016	0–0.5	Sediment	—	—	1.6 (U)	—	—	—	—	—	—	—	5.2 (U)	—	—
AAB3150	54-05017	0–0.5	Sediment	—	—	1.6 (U)	0.61 (U)	—	—	—	—	—	—	5.3 (U)	—	—
AAB3139	54-05018	0–0.5	Sediment	—	—	1.8 (U)	0.49 (U)	—	—	—	—	—	—	5.7 (U)	—	—
AAB3190	54-05019	0–0.5	Sediment	—	—	—	—	—	—	—	—	—	—	—	0.6 (U)	2 (U)
AAB3207	54-05020	0–0.5	Sediment	—	—	—	—	—	—	—	—	—	—	—	0.6 (U)	2 (U)
AAB3187	54-05022	0–0.5	Sediment	—	—	—	0.46 (U)	—	—	—	—	—	—	—	0.6 (U)	2 (U)
AAB3195	54-05026	0–0.5	Sediment	—	—	—	—	—	—	—	—	—	—	—	0.61 (U)	2 (U)
AAB3122	54-05027	0–0.5	Sediment	—	—	1.6 (U)	—	—	—	—	—	—	—	5.2 (U)	—	—
AAB3120	54-05029	0–0.5	Sediment	—	—	1.6 (U)	0.63 (U)	—	—	—	—	—	—	5.3 (U)	—	1.5 (U)
AAB3123	54-05031	0–0.5	Sediment	—	—	1.6 (U)	—	—	—	—	—	—	—	5.2 (U)	—	—
AAB3126	54-05034	0–0.5	Sediment	—	—	1.6 (U)	0.41 (U)	—	—	—	—	—	—	5.3 (U)	—	1.4 (U)
AAB3194	54-05035	0–0.83	Sediment	—	—	—	—	6370	—	—	—	—	—	—	0.6 (U)	2 (U)
AAB3208	54-05037	0–0.83	Sediment	—	—	—	0.41 (U)	—	—	—	—	—	—	—	0.61 (U)	2 (U)
AAB3213	54-05038	0–0.83	Sediment	—	—	—	—	—	—	—	—	—	—	—	0.61 (U)	2 (U)
AAB3204	54-05042	0–0.83	Sediment	—	71 (U)	—	—	—	—	—	—	—	—	—	0.6 (U)	2 (U)
AAB3191	54-05043	0–0.83	Sediment	—	—	—	—	—	—	—	—	—	—	—	0.61 (U)	2 (U)
AAB3196	54-05045	0–0.83	Sediment	—	—	—	—	—	—	—	—	—	—	—	0.6 (U)	2 (U)
AAB3192	54-05048	0–0.83	Sediment	—	—	—	0.41 (U)	—	—	—	—	—	—	—	0.61 (U)	2 (U)
AAB3132	54-05050	0–0.5	Sediment	—	—	—	0.56 (U)	—	—	—	—	—	—	—	0.6 (U)	2 (U)
AAB3173	54-05053	0–0.5	Sediment	—	—	1.6 (U)	—	—	—	—	—	—	—	5.2 (U)	—	—
AAB3133	54-05055	0–0.83	Sediment	—	—	1.6 (U)	—	—	—	—	—	—	—	5.2 (U)	—	—
AAB3202	54-05055	0–0.83	Sediment	—	—	1.6 (U)	—	—	—	—	—	—	—	5.3 (U)	—	—

Table 2.2-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Iron	Magnesium	Mercury	Molybdenum	Selenium	Silver
Sediment Background Value				**127**	**1.31**	**na**[a]	**0.4**	**4420**	**10.5**	**4.73**	**13800**	**2370**	**0.1**	**na**	**0.3**	**1**
Industrial Soil Screening Level (mg/kg)				**78300**	**2250**	**61600**	**1130**[b]	[c]	**5000**	**20500**	**100000**	[c]	**340**	**5680**	**5680**	**5680**
AAB3147	54-05058	0–0.5	Sediment	—	—	1.6 (U)	0.53 (U)	—	—	—	—	—	—	5.2 (U)	—	—
AAB3180	54-05060	0–0.5	Sediment	—	—	1.6 (U)	—	—	—	—	—	—	—	5.3 (U)	—	—
AAB3128	54-05061	0–0.5	Sediment	—	—	—	—	—	—	—	—	—	—	—	0.6 (U)	2 (U)
AAB3124	54-05063	0–0.5	Sediment	—	—	—	0.47 (U)	—	—	—	—	—	—	—	0.6 (U)	2 (U)
AAB3121	54-05066	0–0.5	Sediment	—	—	—	0.57 (U)	—	—	—	—	—	—	—	0.61 (U)	2 (U)
AAB3118	54-05068	0–0.5	Sediment	—	—	—	—	—	—	—	—	—	—	—	0.61 (U)	2 (U)
AAB3107	54-05069	0–0.5	Sediment	—	—	—	—	—	—	—	—	—	—	—	0.6 (U)	2 (U)
AAB3114	54-05072	0–0.5	Sediment	—	—	—	—	—	—	—	—	—	—	—	0.61 (U)	2 (U)
AAB3108	54-05074	0–0.7	Sediment	—	—	—	0.48 (U)	—	—	—	—	—	—	—	0.61 (U)	2 (U)
AAB3106	54-05076	0–0.5	Sediment	—	—	—	0.41 (U)	—	—	—	—	—	—	—	0.61 (U)	2 (U)
AAB3170	54-05077	0–0.5	Sediment	—	—	1.6 (U)	—	—	—	—	—	—	—	5.2 (U)	—	—
AAB3172	54-05078	0–0.25	Sediment	—	—	1.6 (U)	0.58 (U)	—	—	—	—	—	0.2 (U)	5.2 (U)	—	—
AAB3177	54-05080	0–0.33	Sediment	—	—	1.6 (U)	0.81 (U)	—	—	—	—	—	—	5.2 (U)	—	—
AAB3171	54-05082	0–0.5	Sediment	—	—	1.6 (U)	0.55 (U)	—	—	—	—	—	—	5.3 (U)	—	—
AAB3158	54-05085	0–0.5	Sediment	—	—	1.6 (U)	—	—	—	—	—	—	—	5.3 (U)	—	—
AAB3166	54-05085	0–0.5	Sediment	—	—	1.6 (U)	0.69 (U)	—	—	—	—	—	—	5.2 (U)	—	—
AAB3155	54-05086	0–0.5	Sediment	—	—	1.6 (U)	0.58 (U)	—	—	—	—	—	—	5.3 (U)	—	—
AAB3156	54-05088	0–0.33	Sediment	—	—	1.6 (U)	—	—	—	—	—	—	—	5.2 (U)	—	—
AAB3154	54-05090	0–0.5	Sediment	—	—	1.6 (U)	—	—	—	—	—	—	—	5.3 (U)	—	—
AAB3159	54-05093	0–0.7	Sediment	—	—	1.6 (U)	—	—	17.9 (J)	—	—	—	—	5.3 (U)	—	—
AAB3161	54-05094	0–0.5	Sediment	—	—	1.6 (U)	0.61 (U)	—	—	—	—	—	—	5.2 (U)	—	—
AAB3157	54-05095	0–0.7	Sediment	—	—	1.6 (U)	0.52 (U)	—	—	—	—	—	—	5.2 (U)	—	—
AAB3164	54-05096	0–0.5	Sediment	—	—	1.6 (U)	0.88 (U)	—	—	—	—	—	—	5.3 (U)	—	—
AAB3178	54-05101	0–0.5	Sediment	—	—	1.6 (U)	0.67 (U)	—	—	—	—	—	—	5.2 (U)	—	—
AAB3168	54-05102	0–0.42	Sediment	—	—	1.6 (U)	0.55 (U)	—	—	—	—	—	—	5.2 (U)	—	—

Table 2.2-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Iron	Magnesium	Mercury	Molybdenum	Selenium	Silver
Sediment Background Value				**127**	**1.31**	**na**[a]	**0.4**	**4420**	**10.5**	**4.73**	**13800**	**2370**	**0.1**	**na**	**0.3**	**1**
Industrial Soil Screening Level (mg/kg)				**78300**	**2250**	**61600**	**1130**[b]	[c]	**5000**	**20500**	**100000**	[c]	**340**	**5680**	**5680**	**5680**
AAB3163	54-05103	0–0.42	Sediment	—	—	1.6 (U)	0.53 (U)	—	—	—	—	—	—	5.3 (U)	—	—
AAB3169	54-05104	0–0.42	Sediment	—	—	1.6 (U)	0.52 (U)	—	—	—	—	—	—	5.2 (U)	—	—
AAB3117	54-05108	0–0.5	Sediment	—	—	1.6 (U)	0.69 (U)	—	—	—	—	—	—	5.3 (U)	—	—
AAB3127	54-05110	0–0.4	Sediment	—	—	1.6 (U)	0.63 (U)	—	—	—	—	—	—	5.3 (U)	—	—
AAB3116	54-05111	0–0.3	Sediment	—	—	1.6 (U)	1.2	—	—	—	—	—	—	5.2 (U)	—	—
AAB3167	54-05113	0–0.5	Sediment	—	—	1.6 (U)	0.55 (U)	—	—	—	—	—	—	5.2 (U)	—	—
AAB3109	54-05117	0–0.5	Sediment	—	—	—	—	—	—	—	39000	—	—	—	0.6 (U)	2 (U)
AAB3111	54-05118	0–0.5	Sediment	—	—	—	0.65 (U)	—	—	—	—	—	—	—	0.61 (U)	2 (U)
AAB3110	54-05122	0–0.5	Sediment	141	—	—	0.52 (U)	—	—	5.6 (U)	—	—	—	—	0.62 (U)	2.1 (U)
AAB3112	54-05122	0–0.5	Sediment	144	—	—	0.65 (U)	—	—	5.1 (U)	—	—	—	—	0.62 (U)	2.1 (U)
AAB3113	54-05125	0–0.5	Sediment	180	—	—	1 (U)	—	—	5.5 (U)	—	2660	—	—	0.64 (U)	2.1 (U)

Note: All values in mg/kg. See Appendix A for data qualifier definitions.

[a] na = No BV available.

[b] Industrial SSL for cadmium calculated incorrectly in NMED 2004 85615, SSL recalculated using NMED parameters.

[c] Essential nutrient.

[d] — = Not detected above BV.

Table 2.2-3
Radionuclides Detected or Detected above BVs in MDA G Phase I RFI Subsurface Core Samples

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Cobalt-60	Europium-152	Plutonium-238	Plutonium-239
Qbt 2,3,4 Background Value				**na**[a]	**na**	**na**	**na**	**na**	**na**
Qbt 1v Background Value				**na**	**na**	**na**	**na**	**na**	**na**
Qbt 1g, Qct, Qbo Background Value				**na**	**na**	**na**	**na**	**na**	**na**
Industrial SAL (pCi/g)				**180**	**23**	**5.1**	**11**	**240**	**210**
0554-95-0393	54-01102	19.9–20.9	Qbt 2	—[b]	—	—	—	—	—
0554-95-0396	54-01102	30.2–31.3	Qbt 2	—	—	—	—	—	—
0554-95-0399	54-01102	38.9–40.3	Qbt 2	—	—	—	—	—	—
0554-95-0402	54-01102	61.5–63	Qbt 1v	0.005	—	—	—	—	—
0554-95-0433	54-01105	8.8–10.6	Qbt 2	—	—	—	—	—	—
0554-95-0437	54-01105	17.7–19.3	Qbt 2	—	—	—	—	—	—
0554-95-0441	54-01105	27.9–29.7	Qbt 2	—	—	—	—	—	—
0554-95-0445	54-01105	37.8–39.6	Qbt 2	—	—	—	—	—	—
0554-95-0449	54-01105	45.4–47.3	Qbt 2	0.005	—	—	—	—	—
0554-95-0453	54-01106	9.1–10.8	Qbt 2	—	—	—	—	—	—
0554-95-0457	54-01106	19.3–20.9	Qbt 2	—	—	—	—	—	—
0554-95-0461	54-01106	29.6–31.1	Qbt 2	—	—	—	—	—	—
0554-95-0465	54-01106	37.7–39.2	Qbt 2	—	—	—	—	—	—
0554-95-0469	54-01106	44.5–49.3	Qbt 1v	—	—	—	—	—	—
0554-95-0362	54-01107	11.2–13.4	Qbt 2	—	—	—	—	—	—
0554-95-0365	54-01107	19.7–21.5	Qbt 2	0.0338	—	—	—	—	—
0554-95-0368	54-01107	26–28	Qbt 2	0.0428	—	—	—	—	—
0554-95-0371	54-01107	36–38	Qbt 2	0.0428	—	—	—	—	—
0554-95-0374	54-01107	47–49	Qbt 2	—	—	—	—	—	—
0554-95-0377	54-01107	54–56	Qbt 2	0.018	—	—	—	—	—
0554-95-0380	54-01107	66.5–69	Qbt 1v	—	—	—	—	—	—
0554-95-0383	54-01107	77–79.5	Qbt 1v	—	—	—	—	—	—
0554-95-0386	54-01107	86–88.3	Qbt 1v	—	—	—	—	0.027	—
0554-95-0709	54-01107	127–128.5	Qbt 1g	—	—	—	—	—	—
0554-95-0473	54-01108	8.5–10.1	Qbt 2	—	—	—	—	—	—
0554-95-0477	54-01108	20.6–22.3	Qbt 2	—	—	—	—	—	—
0554-95-0481	54-01108	29.9–31.7	Qbt 2	—	—	—	—	—	—
0554-95-0485	54-01108	38.3–40	Qbt 2	—	—	—	—	—	—
0554-95-0489	54-01108	49.4–51	Qbt 1v	0.007	—	—	—	—	—
AAB2648	54-01110	75–77	Qbt 1v	—	—	—	—	—	0.1
AAB2683	54-01111	4–5.5	Qbt 2	—	0.21	—	—	—	—
AAB2675	54-01111	14.5–15.5	Qbt 2	—	—	0.62	—	—	—
AAB2685	54-01111	18.5–21	Qbt 2	—	—	—	—	—	—
AAB2669	54-01111	28–30.5	Qbt 2	—	—	0.51	—	—	—
AAB2667	54-01111	38–39.5	Qbt 2	—	—	0.32	—	—	—
AAB2677	54-01111	50–51.5	Qbt 1v	—	—	—	—	—	—

Table 2.2-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Cobalt-60	Europium-152	Plutonium-238	Plutonium-239
Qbt 2,3,4 Background Value				**na**[a]	**na**	**na**	**na**	**na**	**na**
Qbt 1v Background Value				**na**	**na**	**na**	**na**	**na**	**na**
Qbt 1g, Qct, Qbo Background Value				**na**	**na**	**na**	**na**	**na**	**na**
Industrial SAL (pCi/g)				**180**	**23**	**5.1**	**11**	**240**	**210**
AAB2679	54-01111	60–61.5	Qbt 1v	—	—	—	—	—	—
AAB2671	54-01111	70.5–72.5	Qbt 1v	—	—	—	—	—	—
AAB2661	54-01111	79.5–81.5	Qbt 1v	—	—	—	—	—	—
AAB2663	54-01111	79.5–81.5	Qbt 1v	—	—	—	—	—	—
AAB2665	54-01111	89–90	Qbt 1g	—	1	0.39	—	—	—
0554-95-0712	54-01112	9–9.2	Qbt 2	—	—	—	—	—	—
0554-95-0715	54-01112	13.5–17.5	Qbt 2	—	—	—	—	—	—
0554-95-0716	54-01112	13.5–17.5	Qbt 2	—	—	—	1.54	—	—
0554-95-0718	54-01112	25.3–27.3	Qbt 2	0.006	—	—	—	—	—
0554-95-0721	54-01112	32.9–34.9	Qbt 2	—	—	—	—	—	—
0554-95-0724	54-01112	45.5–47.5	Qbt 1v	—	—	—	—	—	—
0554-95-0727	54-01112	48.5–50.5	Qbt 1v	—	—	—	1.92	—	—
0554-95-0730	54-01112	54.9–57.1	Qbt 1v	0.004	—	—	—	—	—
0554-95-0493	54-01114	8.8–10.3	Qbt 2	0.014	—	—	—	—	—
0554-95-0497	54-01114	18.7–20.2	Qbt 2	0.169	—	—	—	—	—
0554-95-0501	54-01114	26.5–28.7	Qbt 2	—	—	—	—	—	—
0554-95-0505	54-01114	38.5–40	Qbt 1v	0.013	—	—	—	—	—
0554-95-0510	54-01115	10–11.1	Qbt 2	—	—	—	—	—	—
0554-95-0515	54-01115	18.5–19.8	Qbt 2	0.013	—	—	—	—	—
0554-95-0520	54-01115	29.7–30.9	Qbt 2	—	—	—	—	—	—
0554-95-0525	54-01115	39.5–40.8	Qbt 1v	—	—	—	—	—	—
0554-95-0530	54-01115	50.1–51.2	Qbt 1v	—	—	—	—	—	—
0554-95-0535	54-01115	60.1–61.4	Qbt 1v	—	—	—	—	—	—
0554-95-0540	54-01115	68.0–69.3	Qbt 1v	—	—	—	—	—	—
0554-95-0655	54-01116	9–9.3	Qbt 2	0.007	—	—	—	—	—
0554-95-0658	54-01116	20.5–22.5	Qbt 2	—	—	—	—	—	—
0554-95-0661	54-01116	29.5–31.5	Qbt 2	0.009	—	—	—	—	—
0554-95-0664	54-01116	36.5–38.5	Qbt 2	—	—	—	—	—	—
0554-95-0667	54-01116	46.5–48.5	Qbt 1v	0.006	—	—	—	—	—
0554-95-0670	54-01116	57.5–59.5	Qbt 1v	—	—	—	—	—	—
0554-95-0673	54-01116	69.5–71.5	Qbt 1v	—	—	—	—	—	—
0554-95-0676	54-01116	77.5–79.5	Qbt 1v	0.006	—	—	—	—	—
0554-95-0679	54-01116	87.5–89.5	Qbt 1g	0.005	—	—	—	—	—
0554-95-0628	54-01117	9–9.5	Qbt 2	0.015	—	—	—	0.005	0.018
0554-95-0631	54-01117	20–22	Qbt 2	—	—	—	—	—	—
0554-95-0634	54-01117	30–32	Qbt 2	—	—	—	—	—	—
0554-95-0637	54-01117	36–38	Qbt 1v	—	—	—	—	—	—
0554-95-0640	54-01117	46–48	Qbt 1v	—	—	—	—	—	—
0554-95-0643	54-01117	56–58	Qbt 1v	—	—	—	—	—	—

Table 2.2-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Cobalt-60	Europium-152	Plutonium-238	Plutonium-239
Qbt 2,3,4 Background Value				**na**[a]	**na**	**na**	**na**	**na**	**na**
Qbt 1v Background Value				**na**	**na**	**na**	**na**	**na**	**na**
Qbt 1g, Qct, Qbo Background Value				**na**	**na**	**na**	**na**	**na**	**na**
Industrial SAL (pCi/g)				**180**	**23**	**5.1**	**11**	**240**	**210**
0554-95-0646	54-01117	67–69	Qbt 1v	—	—	—	—	—	—
0554-95-0649	54-01117	78–80	Qbt 1v	—	—	—	—	—	—
0554-95-0652	54-01117	86–88	Qbt 1g	0.01	—	—	—	—	—
0554-95-0609	54-01120	9.9–11.3	Qbt 2	—	—	—	—	—	—
0554-95-0613	54-01120	20.5–21.9	Qbt 2	—	—	—	—	—	—
0554-95-0617	54-01120	29.7–31.1	Qbt 2	—	—	—	—	—	—
0554-95-0621	54-01120	40.7–42.1	Qbt 1v	—	—	—	—	—	—
0554-95-0625	54-01120	48.1–49.5	Qbt 1v	—	—	—	—	—	—
0554-95-0782	54-01121	9–9.3	Qbt 2	—	—	—	—	—	0.01
0554-95-0792	54-01121	29–31	Qbt 1v	—	—	—	—	—	—
0554-95-0797	54-01121	39–41	Qbt 1v	—	—	—	—	—	—
0554-95-0802	54-01121	49–51	Qbt 1v	—	—	—	—	—	—
0554-95-0807	54-01121	58.5–61	Qbt 1v	—	—	—	0.78	—	—
0554-95-0733	54-01123	9–9.2	Qbt 2	—	—	—	—	—	—
0554-95-0737	54-01123	16.2–18	Qbt 2	—	—	—	—	—	—
0554-95-0741	54-01123	26.2–28	Qbt 2	—	—	—	—	—	—
0554-95-0745	54-01123	36–38	Qbt 1v	—	—	—	1.27	—	—
0554-95-0749	54-01123	46–48	Qbt 1v	—	—	—	—	—	—
0554-95-0753	54-01123	55.5–57.5	Qbt 1v	—	—	—	—	—	—
0554-95-0779	54-01123	92.5–97	Qbt 1v	—	—	—	—	—	—
0554-95-0564	54-01124	9–10	Qbt 2	—	—	—	—	—	—
0554-95-0569	54-01124	20.3–21.3	Qbt 2	0.005	—	—	—	—	—
0554-95-0574	54-01124	29.5–30.5	Qbt 1v	—	—	—	—	—	—
0554-95-0579	54-01124	37.3–38.3	Qbt 1v	—	—	—	—	—	—
0554-95-0846	54-01125	9–9.2	Qbt 2	0.013	—	—	—	—	0.024
0554-95-0861	54-01125	59–61	Qbt 1v	—	—	—	—	—	—
0554-95-0584	54-01126	9.3–10.3	Qbt 2	—	—	—	—	—	—
0554-95-0589	54-01126	18.5–19.8	Qbt 2	—	—	—	—	—	—
0554-95-0594	54-01126	28.8–29.8	Qbt 1v	0.012	—	—	—	—	—
0554-95-0599	54-01126	37.3–38.3	Qbt 1v	0.005	—	—	—	—	—
0554-95-0604	54-01126	47.3–48.3	Qbt 1v	—	—	—	—	—	—
0554-95-0544	54-01128	9–10	Qbt 2	—	—	—	—	—	—
0554-95-0549	54-01128	18.9–20	Qbt 2	0.026	—	—	—	—	—
0554-95-0554	54-01128	28–29	Qbt 1v	—	—	—	—	—	—
0554-95-0559	54-01128	39–40	Qbt 1v	—	—	—	—	—	—

Table 2.2-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Strontium-90	Thorium-230	Tritium	Uranium-234	Uranium-235	Uranium-238
Qbt 2,3,4 Background Value				**na**	**1.98**	**na**	**1.98**	**0.09**	**1.93**
Qbt 1v Background Value				**na**	**3.12**	**na**	**3.12**	**0.14**	**3.05**
Qbt 1g, Qct, Qbo Background Value				**na**	**4**	**na**	**4**	**0.18**	**3.9**
Industrial SAL (pCi/g)				**1900**	**5**	**440000**	**1500**	**83**	**430**
0554-95-0393	54-01102	19.9–20.9	Qbt 2	—	—	1.938743	—	—	—
0554-95-0396	54-01102	30.2–31.3	Qbt 2	—	—	0.1294589	—	—	—
0554-95-0399	54-01102	38.9–40.3	Qbt 2	—	—	8.606438E-02	—	0.11	—
0554-95-0402	54-01102	61.5–63	Qbt 1v	—	—	3.236603E-02	—	0.23	—
0554-95-0433	54-01105	8.8–10.6	Qbt 2	—	—	6.203144E-02	—	—	—
0554-95-0437	54-01105	17.7–19.3	Qbt 2	—	—	0.628291	—	—	—
0554-95-0441	54-01105	27.9–29.7	Qbt 2	—	—	0.8405954	—	0.1	—
0554-95-0445	54-01105	37.8–39.6	Qbt 2	—	—	0.1209776	—	—	—
0554-95-0449	54-01105	45.4–47.3	Qbt 2	—	—	2.558376E-02	—	—	—
0554-95-0453	54-01106	9.1–10.8	Qbt 2	—	—	0.253097	—	—	—
0554-95-0457	54-01106	19.3–20.9	Qbt 2	—	—	5.452775	—	—	—
0554-95-0461	54-01106	29.6–31.1	Qbt 2	—	—	103.5729	—	—	—
0554-95-0465	54-01106	37.7–39.2	Qbt 2	—	—	83.26047	—	—	—
0554-95-0469	54-01106	44.5–49.3	Qbt 1v	—	—	0.325773	—	—	—
0554-95-0362	54-01107	11.2–13.4	Qbt 2	—	—	1.298701	—	—	—
0554-95-0365	54-01107	19.7–21.5	Qbt 2	—	—	0.9832879	—	—	—
0554-95-0368	54-01107	26–28	Qbt 2	—	—	1.637998	—	—	—
0554-95-0371	54-01107	36–38	Qbt 2	—	—	2.175816	—	—	—
0554-95-0374	54-01107	47–49	Qbt 2	—	—	17.72893	—	—	—
0554-95-0377	54-01107	54–56	Qbt 2	—	—	973.416	—	—	—
0554-95-0380	54-01107	66.5–69	Qbt 1v	—	—	61.01235	—	—	—
0554-95-0383	54-01107	77–79.5	Qbt 1v	—	—	2.145473	—	—	—
0554-95-0386	54-01107	86–88.3	Qbt 1v	0.62	—	4.709307	—	—	—
0554-95-0709	54-01107	127–128.5	Qbt 1g	—	—	0.962199	—	—	—
0554-95-0473	54-01108	8.5–10.1	Qbt 2	—	—	0.2901379	—	—	—
0554-95-0477	54-01108	20.6–22.3	Qbt 2	—	—	0.8613467	—	—	—
0554-95-0481	54-01108	29.9–31.7	Qbt 2	—	—	1.763495	—	—	—
0554-95-0485	54-01108	38.3–40	Qbt 2	—	—	8.566834	—	—	—
0554-95-0489	54-01108	49.4–51	Qbt 1v	—	—	3.192516	—	—	—
AAB2648	54-01110	75–77	Qbt 1v	—	—	—	—	—	—
AAB2683	54-01111	4–5.5	Qbt 2	—	—	—	—	—	—
AAB2675	54-01111	14.5–15.5	Qbt 2	—	—	—	—	0.2	—
AAB2685	54-01111	18.5–21	Qbt 2	—	—	—	—	—	—
AAB2669	54-01111	28–30.5	Qbt 2	—	—	—	—	0.17	—
AAB2667	54-01111	38–39.5	Qbt 2	—	2.26	—	2.57	0.2	2.75
AAB2677	54-01111	50–51.5	Qbt 1v	0.4 (J)	—	—	—	0.21	—
AAB2679	54-01111	60–61.5	Qbt 1v	—	—	—	—	—	—
AAB2671	54-01111	70.5–72.5	Qbt 1v	—	—	—	—	—	—
AAB2661	54-01111	79.5–81.5	Qbt 1v	—	—	—	—	—	—

Table 2.2-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Strontium-90	Thorium-230	Tritium	Uranium-234	Uranium-235	Uranium-238
Qbt 2,3,4 Background Value				**na**	**1.98**	**na**	**1.98**	**0.09**	**1.93**
Qbt 1v Background Value				**na**	**3.12**	**na**	**3.12**	**0.14**	**3.05**
Qbt 1g, Qct, Qbo Background Value				**na**	**4**	**na**	**4**	**0.18**	**3.9**
Industrial SAL (pCi/g)				**1900**	**5**	**440000**	**1500**	**83**	**430**
AAB2663	54-01111	79.5–81.5	Qbt 1v	—	—	—	—	0.36	—
AAB2665	54-01111	89–90	Qbt 1g	—	—	—	—	0.21	—
0554-95-0712	54-01112	9–9.2	Qbt 2	—	—	2.013757	—	—	—
0554-95-0715	54-01112	13.5–17.5	Qbt 2	—	—	3.447367	—	—	—
0554-95-0716	54-01112	13.5–17.5	Qbt 2	—	—	3.566815	—	—	—
0554-95-0718	54-01112	25.3–27.3	Qbt 2	—	—	12.03517	—	—	—
0554-95-0721	54-01112	32.9–34.9	Qbt 2	—	—	26.99579	—	—	—
0554-95-0724	54-01112	45.5–47.5	Qbt 1v	—	—	231.7149	—	—	—
0554-95-0727	54-01112	48.5–50.5	Qbt 1v	—	—	500.8719	—	—	—
0554-95-0730	54-01112	54.9–57.1	Qbt 1v	—	—	1082.877	—	—	—
0554-95-0493	54-01114	8.8–10.3	Qbt 2	—	—	0.5493319	—	—	—
0554-95-0497	54-01114	18.7–20.2	Qbt 2	—	—	1.024093	—	—	—
0554-95-0501	54-01114	26.5–28.7	Qbt 2	—	—	10.14241	—	—	—
0554-95-0505	54-01114	38.5–40	Qbt 1v	—	—	20.80119	—	—	—
0554-95-0510	54-01115	10–11.1	Qbt 2	—	—	0.830065	—	—	—
0554-95-0515	54-01115	18.5–19.8	Qbt 2	—	—	1.663689	—	—	—
0554-95-0520	54-01115	29.7–30.9	Qbt 2	—	—	0.572884	—	—	—
0554-95-0525	54-01115	39.5–40.8	Qbt 1v	—	—	24.4561	—	—	—
0554-95-0530	54-01115	50.1–51.2	Qbt 1v	—	—	0.7955704	—	—	—
0554-95-0535	54-01115	60.1–61.4	Qbt 1v	—	3.16	0.1120686	—	—	—
0554-95-0540	54-01115	68.0–69.3	Qbt 1v	—	—	0.0914083	—	—	—
0554-95-0655	54-01116	9–9.3	Qbt 2	—	—	90.63394	—	—	—
0554-95-0658	54-01116	20.5–22.5	Qbt 2	—	—	391.6178	—	—	—
0554-95-0661	54-01116	29.5–31.5	Qbt 2	—	—	521.0103	—	—	—
0554-95-0664	54-01116	36.5–38.5	Qbt 2	—	—	96.25675	—	—	—
0554-95-0667	54-01116	46.5–48.5	Qbt 1v	—	—	48.94558	—	—	—
0554-95-0670	54-01116	57.5–59.5	Qbt 1v	—	—	38.99498	—	—	—
0554-95-0673	54-01116	69.5–71.5	Qbt 1v	—	—	50.06168	—	—	—
0554-95-0676	54-01116	77.5–79.5	Qbt 1v	—	—	54.7623	—	—	—
0554-95-0679	54-01116	87.5–89.5	Qbt 1g	—	—	7.475635	—	—	—
0554-95-0628	54-01117	9–9.5	Qbt 2	—	—	4537.668	—	—	—
0554-95-0631	54-01117	20–22	Qbt 2	—	—	7174.737	—	—	—
0554-95-0634	54-01117	30–32	Qbt 2	—	—	2992.381	—	—	—
0554-95-0637	54-01117	36–38	Qbt 1v	—	—	2014.142	—	—	—
0554-95-0640	54-01117	46–48	Qbt 1v	—	—	558.1818	—	—	—
0554-95-0643	54-01117	56–58	Qbt 1v	—	—	968.309	—	—	—
0554-95-0646	54-01117	67–69	Qbt 1v	—	—	670.6476	—	—	—
0554-95-0649	54-01117	78–80	Qbt 1v	—	—	206.6366	—	—	—
0554-95-0652	54-01117	86–88	Qbt 1g	—	—	15.37481	—	—	—

Table 2.2-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Strontium-90	Thorium-230	Tritium	Uranium-234	Uranium-235	Uranium-238
Qbt 2,3,4 Background Value				**na**	**1.98**	**na**	**1.98**	**0.09**	**1.93**
Qbt 1v Background Value				**na**	**3.12**	**na**	**3.12**	**0.14**	**3.05**
Qbt 1g, Qct, Qbo Background Value				**na**	**4**	**na**	**4**	**0.18**	**3.9**
Industrial SAL (pCi/g)				**1900**	**5**	**440000**	**1500**	**83**	**430**
0554-95-0609	54-01120	9.9–11.3	Qbt 2	—	—	75.13757	—	—	—
0554-95-0613	54-01120	20.5–21.9	Qbt 2	—	—	3289.391	—	—	—
0554-95-0617	54-01120	29.7–31.1	Qbt 2	—	—	13958.69	—	—	—
0554-95-0621	54-01120	40.7–42.1	Qbt 1v	—	—	13290.06	—	—	—
0554-95-0625	54-01120	48.1–49.5	Qbt 1v	—	—	1581.736	—	—	—
0554-95-0782	54-01121	9–9.3	Qbt 2	—	—	—	—	—	—
0554-95-0792	54-01121	29–31	Qbt 1v	—	—	0.3517428	—	—	—
0554-95-0797	54-01121	39–41	Qbt 1v	—	—	2.144709	—	—	—
0554-95-0802	54-01121	49–51	Qbt 1v	—	—	1.111591	—	—	—
0554-95-0807	54-01121	58.5–61	Qbt 1v	—	—	0.4186273	—	—	—
0554-95-0733	54-01123	9–9.2	Qbt 2	—	—	0.5863512	—	—	—
0554-95-0737	54-01123	16.2–18	Qbt 2	—	—	3.676294	—	—	—
0554-95-0741	54-01123	26.2–28	Qbt 2	—	—	1.165195	—	—	—
0554-95-0745	54-01123	36–38	Qbt 1v	—	—	0.0933876	—	—	—
0554-95-0749	54-01123	46–48	Qbt 1v	—	—	5.771662E-02	—	—	—
0554-95-0753	54-01123	55.5–57.5	Qbt 1v	—	—	0.0921519	—	—	—
0554-95-0779	54-01123	92.5–97	Qbt 1v	—	—	6.021882E-02	—	—	—
0554-95-0564	54-01124	9–10	Qbt 2	—	—	0.3332415	—	—	—
0554-95-0569	54-01124	20.3–21.3	Qbt 2	—	—	0.4135135	—	—	—
0554-95-0574	54-01124	29.5–30.5	Qbt 1v	—	—	0.5989743	—	—	—
0554-95-0579	54-01124	37.3–38.3	Qbt 1v	—	—	0.1858207	—	—	—
0554-95-0846	54-01125	9–9.2	Qbt 2	—	—	8.187273	—	—	—
0554-95-0861	54-01125	59–61	Qbt 1v	—	—	0.8776417	—	—	—
0554-95-0584	54-01126	9.3–10.3	Qbt 2	—	—	2.11982	—	—	—
0554-95-0589	54-01126	18.5–19.8	Qbt 2	—	—	65.99837	—	—	—
0554-95-0594	54-01126	28.8–29.8	Qbt 1v	—	—	3876.857	—	—	—
0554-95-0599	54-01126	37.3–38.3	Qbt 1v	—	—	77.54217	—	—	—
0554-95-0604	54-01126	47.3–48.3	Qbt 1v	—	—	48.65787	—	—	—
0554-95-0544	54-01128	9–10	Qbt 2	—	—	2.160635	—	—	—
0554-95-0549	54-01128	18.9–20	Qbt 2	—	—	4.293469	—	—	—
0554-95-0554	54-01128	28–29	Qbt 1v	—	—	43.98966	—	—	—
0554-95-0559	54-01128	39–40	Qbt 1v	—	—	164.8245	—	—	—

Note: All values in pCi/g. See Appendix A for data qualifier definitions.

[a] na = No BV available.

[b] — = Not detected above BV.

Table 2.2-4
Inorganic Chemicals above BVs in MDA G Phase I RFI Subsurface Core Samples

Sample ID	Location ID	Depth (ft)	Media	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper
Qbt 2,3,4 Background Value				**0.5**	**2.79**	**46**	**1.21**	**na**[a]	**1.63**	**2200**	**7.14**	**3.14**	**4.66**
Qbt 1v Background Value				**0.5**	**1.81**	**26.5**	**1.7**	**na**	**0.4**	**3700**	**2.24**	**1.78**	**3.26**
Qbt 1g, Qct, Qbo Background Value				**0.5**	**0.56**	**25.7**	**1.44**	**na**	**0.4**	**1900**	**2.6**	**8.89**	**3.96**
Industrial Soil Screening Level (mg/kg)				**45400**	**17.7**	**78300**	**2250**	**61600**	**1130**[b]	[c]	**5000**	**20500**	**45400**
0554-95-0390	54-01102	8.7–10.1	Qbt 2	0.53 (U)	—[d]	—	—	—	—	—	—	—	—
0554-95-0393	54-01102	19.9–20.9	Qbt 2	0.52 (U)	—	—	—	—	—	—	—	—	—
0554-95-0396	54-01102	30.2–31.3	Qbt 2	3.3 (U)	—	—	—	—	—	—	—	—	—
0554-95-0399	54-01102	38.9–40.3	Qbt 2	3.2 (U)	—	—	—	—	—	—	—	—	—
0554-95-0402	54-01102	61.5–63	Qbt 1v	3.2 (U)	—	—	—	—	—	—	—	—	—
0554-95-0433	54-01105	8.8–10.6	Qbt 2	3.3 (U)	—	—	—	—	—	—	—	—	—
0554-95-0437	54-01105	17.7–19.3	Qbt 2	3.1 (U)	—	—	—	—	—	—	—	—	—
0554-95-0441	54-01105	27.9–29.7	Qbt 2	3.3 (U)	—	—	—	—	—	—	—	—	—
0554-95-0445	54-01105	37.8–39.6	Qbt 2	3.3 (U)	—	—	—	—	—	—	—	—	—
0554-95-0449	54-01105	45.4–47.3	Qbt 2	3.2 (U)	—	—	—	—	—	—	—	—	—
0554-95-0453	54-01106	9.1–10.8	Qbt 2	—	—	—	—	—	—	—	—	—	—
0554-95-0457	54-01106	19.3–20.9	Qbt 2	—	—	—	—	—	—	—	—	—	—
0554-95-0461	54-01106	29.6–31.1	Qbt 2	—	—	—	—	—	—	—	—	—	—
0554-95-0465	54-01106	37.7–39.2	Qbt 2	—	—	—	—	—	—	—	—	—	—
0554-95-0469	54-01106	44.5–49.3	Qbt 1v	—	—	—	—	—	—	—	—	—	—
0554-95-0362	54-01107	11.2–13.4	Qbt 2	5.3 (U)	—	—	—	—	—	—	—	—	—
0554-95-0365	54-01107	19.7–21.5	Qbt 2	5.1 (U)	—	—	—	—	—	—	—	—	—
0554-95-0368	54-01107	26–28	Qbt 2	5.3 (U)	—	—	—	—	—	—	—	—	—
0554-95-0371	54-01107	36–38	Qbt 2	5.2 (U)	—	—	—	—	—	—	—	—	—
0554-95-0374	54-01107	47–49	Qbt 2	5.2 (U)	—	—	—	—	—	—	—	—	—
0554-95-0377	54-01107	54–56	Qbt 2	5.3 (U)	—	—	1.6	—	—	—	—	—	6.8 (U)
0554-95-0380	54-01107	66.5–69	Qbt 1v	5 (U)	—	—	—	—	0.63 (U)	—	—	—	—
0554-95-0383	54-01107	77–79.5	Qbt 1v	5.1 (U)	—	—	—	—	0.64 (U)	—	—	—	—
0554-95-0386	54-01107	86–88.3	Qbt 1v	5.2 (U)	—	—	—	—	0.65 (U)	—	—	—	—

Table 2.2-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper
Qbt 2,3,4 Background Value				**0.5**	**2.79**	**46**	**1.21**	**na**[a]	**1.63**	**2200**	**7.14**	**3.14**	**4.66**
Qbt 1v Background Value				**0.5**	**1.81**	**26.5**	**1.7**	**na**	**0.4**	**3700**	**2.24**	**1.78**	**3.26**
Qbt 1g, Qct, Qbo Background Value				**0.5**	**0.56**	**25.7**	**1.44**	**na**	**0.4**	**1900**	**2.6**	**8.89**	**3.96**
Industrial Soil Screening Level (mg/kg)				**45400**	**17.7**	**78300**	**2250**	**61600**	**1130**[b]	[c]	**5000**	**20500**	**45400**
0554-95-0709	54-01107	127–128.5	Qbt 1g	2.9 (UJ)	—	26.5	—	—	—	—	—	—	—
0554-95-0473	54-01108	8.5–10.1	Qbt 2	—	—	—	—	—	—	—	—	—	—
0554-95-0477	54-01108	20.6–22.3	Qbt 2	—	—	—	—	—	—	—	—	—	—
0554-95-0481	54-01108	29.9–31.7	Qbt 2	—	—	—	—	—	—	—	—	—	—
0554-95-0485	54-01108	38.3–40	Qbt 2	—	—	—	—	—	—	—	—	—	—
0554-95-0489	54-01108	49.4–51	Qbt 1v	—	—	—	—	—	—	—	—	—	—
AAB2638	54-01110	6–7.5	Qbt 2	—	—	—	—	—	—	—	—	—	—
AAB2640	54-01110	16.5–17.5	Qbt 2	—	—	—	—	—	—	—	—	—	—
AAB2634	54-01110	26–28	Qbt 2	—	—	—	—	—	—	—	—	—	—
AAB2656	54-01110	36.5–37.5	Qbt 2	—	—	—	—	—	—	—	—	—	—
AAB2642	54-01110	46–48	Qbt 2	—	—	—	—	1 (U)	—	—	—	—	—
AAB2636	54-01110	56–57	Qbt 1v	—	—	—	—	1 (U)	—	—	—	—	—
AAB2648	54-01110	75–77	Qbt 1v	—	—	—	—	1 (U)	—	—	2.6	3.3	—
AAB2652	54-01110	88–90	Qbt 1g	—	0.8	—	—	1 (U)	—	—	—	—	—
AAB2654	54-01110	101–102	Qbt 1g	—	—	—	—	1 (U)	—	—	4.2	—	—
AAB2683	54-01111	4–5.5	Qbt 2	4.3 (U)	—	—	—	—	—	2420	—	—	—
AAB2675	54-01111	14.5–15.5	Qbt 2	4.2 (U)	—	—	—	—	—	—	—	—	—
AAB2685	54-01111	18.5–21	Qbt 2	4.2 (U)	—	—	—	—	—	—	—	—	—
AAB2669	54-01111	28–30.5	Qbt 2	4.2 (U)	—	—	—	—	—	—	—	—	—
AAB2667	54-01111	38–39.5	Qbt 2	4.2 (U)	—	—	—	—	—	—	—	—	—
AAB2677	54-01111	50–51.5	Qbt 1v	—	—	—	—	—	—	—	—	—	—
AAB2679	54-01111	60–61.5	Qbt 1v	—	—	—	—	—	—	—	—	—	—
AAB2671	54-01111	70.5–72.5	Qbt 1v	—	—	—	—	—	—	—	—	—	—
AAB2661	54-01111	79.5–81.5	Qbt 1v	—	—	—	—	—	—	—	—	—	—
AAB2663	54-01111	79.5–81.5	Qbt 1v	—	2.2	—	—	—	—	—	—	—	—
AAB2665	54-01111	89–90	Qbt 1g	—	—	—	—	—	—	—	—	—	—

Table 2.2-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper
Qbt 2,3,4 Background Value				**0.5**	**2.79**	**46**	**1.21**	**na**[a]	**1.63**	**2200**	**7.14**	**3.14**	**4.66**
Qbt 1v Background Value				**0.5**	**1.81**	**26.5**	**1.7**	**na**	**0.4**	**3700**	**2.24**	**1.78**	**3.26**
Qbt 1g, Qct, Qbo Background Value				**0.5**	**0.56**	**25.7**	**1.44**	**na**	**0.4**	**1900**	**2.6**	**8.89**	**3.96**
Industrial Soil Screening Level (mg/kg)				**45400**	**17.7**	**78300**	**2250**	**61600**	**1130**[b]	[c]	**5000**	**20500**	**45400**
AAB2722	54-01111	108–110	Qbt 1g	—	—	—	—	—	—	—	—	—	—
0554-95-0712	54-01112	9–9.2	Qbt 2	0.57 (J)	—	—	—	—	—	—	—	—	5 (J)
0554-95-0715	54-01112	13.5–17.5	Qbt 2	0.51 (U)	—	—	—	—	—	—	—	—	—
0554-95-0716	54-01112	13.5–17.5	Qbt 2	0.51 (U)	—	—	—	—	—	—	—	—	—
0554-95-0718	54-01112	25.3–27.3	Qbt 2	0.51 (U)	—	—	—	—	—	—	—	—	—
0554-95-0721	54-01112	32.9–34.9	Qbt 2	0.51 (U)	—	—	—	—	—	—	—	—	—
0554-95-0724	54-01112	45.5–47.5	Qbt 1v	0.52 (U)	—	—	—	—	—	—	—	—	—
0554-95-0727	54-01112	48.5–50.5	Qbt 1v	0.52 (U)	—	—	—	—	—	—	—	—	5.9
0554-95-0730	54-01112	54.9–57.1	Qbt 1v	0.6 (J)	—	—	—	—	—	—	—	—	—
0554-95-0493	54-01114	8.8–10.3	Qbt 2	—	—	—	—	—	—	—	—	—	—
0554-95-0497	54-01114	18.7–20.2	Qbt 2	—	—	—	—	—	—	—	—	—	—
0554-95-0501	54-01114	26.5–28.7	Qbt 2	0.51 (U)	—	—	—	—	—	—	—	—	—
0554-95-0505	54-01114	38.5–40	Qbt 1v	0.51 (U)	—	—	—	—	—	—	—	—	—
0554-95-0510	54-01115	10–11.1	Qbt 2	—	—	—	—	—	—	—	—	—	—
0554-95-0515	54-01115	18.5–19.8	Qbt 2	—	—	—	—	—	—	—	—	—	—
0554-95-0520	54-01115	29.7–30.9	Qbt 2	—	—	—	—	—	—	—	—	—	—
0554-95-0525	54-01115	39.5–40.8	Qbt 1v	—	—	—	—	—	—	—	—	—	—
0554-95-0530	54-01115	50.1–51.2	Qbt 1v	—	—	—	—	—	—	—	—	—	—
0554-95-0535	54-01115	60.1–61.4	Qbt 1v	—	—	—	—	—	—	—	—	—	—
0554-95-0540	54-01115	68.0–69.3	Qbt 1v	—	—	—	—	—	—	—	—	—	—
0554-95-0655	54-01116	9–9.3	Qbt 2	9.1 (U)	—	—	—	—	—	—	—	—	—
0554-95-0658	54-01116	20.5–22.5	Qbt 2	9 (U)	—	—	—	—	—	—	—	—	—
0554-95-0661	54-01116	29.5–31.5	Qbt 2	8.8 (U)	—	—	—	—	—	—	—	—	—
0554-95-0664	54-01116	36.5–38.5	Qbt 2	8.6 (U)	—	—	—	—	—	—	—	—	—
0554-95-0667	54-01116	46.5–48.5	Qbt 1v	8.3 (U)	—	—	—	—	0.66 (U)	—	—	—	—
0554-95-0670	54-01116	57.5–59.5	Qbt 1v	8.7 (U)	—	—	—	—	0.68 (U)	—	—	—	—

Table 2.2-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper
Qbt 2,3,4 Background Value				**0.5**	**2.79**	**46**	**1.21**	**na**[a]	**1.63**	**2200**	**7.14**	**3.14**	**4.66**
Qbt 1v Background Value				**0.5**	**1.81**	**26.5**	**1.7**	**na**	**0.4**	**3700**	**2.24**	**1.78**	**3.26**
Qbt 1g, Qct, Qbo Background Value				**0.5**	**0.56**	**25.7**	**1.44**	**na**	**0.4**	**1900**	**2.6**	**8.89**	**3.96**
Industrial Soil Screening Level (mg/kg)				**45400**	**17.7**	**78300**	**2250**	**61600**	**1130**[b]	[c]	**5000**	**20500**	**45400**
0554-95-0673	54-01116	69.5–71.5	Qbt 1v	8.6 (U)	—	—	—	—	0.68 (U)	—	—	—	—
0554-95-0676	54-01116	77.5–79.5	Qbt 1v	8.6 (U)	—	—	—	—	0.68 (U)	—	—	—	—
0554-95-0679	54-01116	87.5–89.5	Qbt 1g	8.4 (U)	—	—	—	—	0.66 (U)	—	—	—	—
0554-95-0628	54-01117	9–9.5	Qbt 2	8.8 (U)	—	—	—	—	—	—	—	—	—
0554-95-0631	54-01117	20–22	Qbt 2	8.7 (U)	—	—	—	—	—	—	—	—	—
0554-95-0634	54-01117	30–32	Qbt 2	—	—	—	—	—	—	—	—	—	—
0554-95-0637	54-01117	36–38	Qbt 1v	—	—	—	—	—	—	—	—	—	—
0554-95-0640	54-01117	46–48	Qbt 1v	—	—	—	—	—	—	—	—	—	—
0554-95-0643	54-01117	56–58	Qbt 1v	—	—	—	—	—	—	—	—	—	—
0554-95-0646	54-01117	67–69	Qbt 1v	—	—	—	—	—	—	—	—	—	—
0554-95-0649	54-01117	78–80	Qbt 1v	0.51 (U)	2.2	—	—	—	—	—	—	—	—
0554-95-0652	54-01117	86–88	Qbt 1g	—	—	—	—	—	—	—	—	—	—
0554-95-0609	54-01120	9.9–11.3	Qbt 2	3.2 (UJ)	—	—	—	—	—	—	—	—	—
0554-95-0613	54-01120	20.5–21.9	Qbt 2	3.1 (UJ)	—	—	—	—	—	—	—	—	—
0554-95-0617	54-01120	29.7–31.1	Qbt 2	3.1 (UJ)	—	—	—	—	—	—	—	—	—
0554-95-0621	54-01120	40.7–42.1	Qbt 1v	3.1 (UJ)	—	—	—	—	—	—	—	—	5.8
0554-95-0625	54-01120	48.1–49.5	Qbt 1v	3.1 (UJ)	—	—	—	—	—	—	—	—	—
0554-95-0782	54-01121	9–9.3	Qbt 2	0.53 (U)	—	—	—	—	—	5580	—	—	—
0554-95-0787	54-01121	19–21	Qbt 2	0.51 (U)	—	—	—	—	—	—	—	—	—
0554-95-0792	54-01121	29–31	Qbt 1v	0.51 (U)	—	—	—	—	—	—	—	—	—
0554-95-0797	54-01121	39–41	Qbt 1v	0.51 (U)	—	—	—	—	—	—	—	—	—
0554-95-0802	54-01121	49–51	Qbt 1v	0.51 (U)	—	—	—	—	—	—	—	—	—
0554-95-0807	54-01121	58.5–61	Qbt 1v	—	—	—	—	—	—	—	—	—	—
0554-95-0733	54-01123	9–9.2	Qbt 2	—	—	—	—	—	—	—	—	—	—
0554-95-0737	54-01123	16.2–18	Qbt 2	—	—	—	—	—	—	—	—	—	—
0554-95-0741	54-01123	26.2–28	Qbt 2	—	—	—	—	—	—	—	—	—	—

Table 2.2-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper
Qbt 2,3,4 Background Value				**0.5**	**2.79**	**46**	**1.21**	**na**[a]	**1.63**	**2200**	**7.14**	**3.14**	**4.66**
Qbt 1v Background Value				**0.5**	**1.81**	**26.5**	**1.7**	**na**	**0.4**	**3700**	**2.24**	**1.78**	**3.26**
Qbt 1g, Qct, Qbo Background Value				**0.5**	**0.56**	**25.7**	**1.44**	**na**	**0.4**	**1900**	**2.6**	**8.89**	**3.96**
Industrial Soil Screening Level (mg/kg)				**45400**	**17.7**	**78300**	**2250**	**61600**	**1130**[b]	[c]	**5000**	**20500**	**45400**
0554-95-0745	54-01123	36–38	Qbt 1v	—	—	—	—	—	—	—	—	—	—
0554-95-0749	54-01123	46–48	Qbt 1v	—	—	—	—	—	—	—	—	—	—
0554-95-0753	54-01123	55.5–57.5	Qbt 1v	—	—	—	—	—	—	—	—	—	—
0554-95-0779	54-01123	92.5–97	Qbt 1v	—	—	71.6	—	—	—	—	2.3 (U)	—	—
0554-95-0564	54-01124	9–10	Qbt 2	11 (U)	—	—	—	—	—	—	—	—	—
0554-95-0569	54-01124	20.3–21.3	Qbt 2	10 (U)	—	—	—	—	—	—	—	—	—
0554-95-0574	54-01124	29.5–30.5	Qbt 1v	11 (U)	—	—	—	—	0.56 (U)	—	5.6	—	—
0554-95-0579	54-01124	37.3–38.3	Qbt 1v	10 (U)	—	—	—	—	0.51 (U)	—	—	—	—
0554-95-0846	54-01125	9–9.2	Qbt 2	11 (UJ)	—	—	—	—	—	—	—	—	8.7 (J-)
0554-95-0849	54-01125	16–18	Qbt 2	11 (UJ)	—	—	—	—	—	—	—	—	—
0554-95-0852	54-01125	26–28	Qbt 2	11 (UJ)	—	—	—	—	—	—	—	—	—
0554-95-0855	54-01125	36–38	Qbt 2	11 (UJ)	—	—	—	—	—	—	—	—	—
0554-95-0858	54-01125	46–48	Qbt 1v	11 (UJ)	—	—	—	—	0.55 (U)	—	—	—	—
0554-95-0861	54-01125	59–61	Qbt 1v	11 (UJ)	—	—	—	—	0.57 (U)	—	—	—	—
0554-95-0584	54-01126	9.3–10.3	Qbt 2	3.2 (UJ)	—	—	—	—	—	—	—	—	—
0554-95-0589	54-01126	18.5–19.8	Qbt 2	3.1 (UJ)	—	—	—	—	—	—	—	—	—
0554-95-0594	54-01126	28.8–29.8	Qbt 1v	3.2 (UJ)	—	—	—	—	—	—	—	—	—
0554-95-0599	54-01126	37.3–38.3	Qbt 1v	—	—	—	—	—	—	—	—	—	—
0554-95-0604	54-01126	47.3–48.3	Qbt 1v	—	—	—	—	—	—	—	—	—	—
0554-95-0544	54-01128	9–10	Qbt 2	10 (U)	—	—	—	—	—	—	—	—	—
0554-95-0549	54-01128	18.9–20	Qbt 2	10 (U)	—	—	—	—	—	—	—	—	—
0554-95-0554	54-01128	28–29	Qbt 1v	11 (U)	—	—	—	—	0.53 (U)	—	—	—	4.3 (J+)
0554-95-0559	54-01128	39–40	Qbt 1v	11 (U)	—	—	—	—	0.53 (U)	—	—	—	—

Table 2.2-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Magnesium	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Qbt 2,3,4 Background Value				**0.5**	**1690**	**0.1**	**na**	**6.58**	**0.3**	**1**	**1.1**	**17**	**63.5**
Qbt 1v Background Value				**0.5**	**780**	**0.1**	**na**	**2**	**0.3**	**1**	**1.24**	**4.48**	**87.6**
Qbt 1g, Qct, Qbo Background Value				**0.5**	**739**	**0.1**	**na**	**2**	**0.3**	**1**	**1.22**	**4.59**	**40**
Industrial Soil Screening Level (mg/kg)				**22700**	[b]	**340**	**5680**	**22500**	**5680**	**5680**	**74.9**	**7950**	**100000**
0554-95-0390	54-01102	8.7–10.1	Qbt 2	0.55	—	—	—	—	0.51 (U)	—	—	—	—
0554-95-0393	54-01102	19.9–20.9	Qbt 2	0.43 (J)	—	—	—	—	0.5 (U)	—	—	—	—
0554-95-0396	54-01102	30.2–31.3	Qbt 2	0.102 (U)	—	—	—	—	0.61 (UJ)	—	—	—	—
0554-95-0399	54-01102	38.9–40.3	Qbt 2	0.103 (U)	—	—	—	—	0.61 (UJ)	—	—	—	—
0554-95-0402	54-01102	61.5–63	Qbt 1v	0.101 (U)	—	—	—	—	0.6 (UJ)	—	—	—	—
0554-95-0433	54-01105	8.8–10.6	Qbt 2	0.1 (U)	—	—	—	—	0.62 (UJ)	—	—	—	—
0554-95-0437	54-01105	17.7–19.3	Qbt 2	0.102 (U)	—	—	—	—	0.59 (UJ)	—	—	—	—
0554-95-0441	54-01105	27.9–29.7	Qbt 2	0.102 (U)	—	—	—	—	0.63 (UJ)	—	—	—	—
0554-95-0445	54-01105	37.8–39.6	Qbt 2	0.101 (U)	—	—	—	—	0.62 (UJ)	—	—	—	—
0554-95-0449	54-01105	45.4–47.3	Qbt 2	0.101 (U)	—	—	—	—	0.6 (UJ)	—	—	—	—
0554-95-0453	54-01106	9.1–10.8	Qbt 2	0.15 (UJ)	—	—	—	—	0.31 (U)	—	—	174 (J)	—
0554-95-0457	54-01106	19.3–20.9	Qbt 2	0.16 (UJ)	—	—	—	—	0.31 (U)	—	—	—	—
0554-95-0461	54-01106	29.6–31.1	Qbt 2	0.15 (UJ)	—	—	—	—	0.31 (U)	—	—	—	—
0554-95-0465	54-01106	37.7–39.2	Qbt 2	0.16 (UJ)	—	—	—	—	0.31 (U)	—	—	—	—
0554-95-0469	54-01106	44.5–49.3	Qbt 1v	0.15 (UJ)	—	—	—	—	—	—	—	—	—
0554-95-0362	54-01107	11.2–13.4	Qbt 2	0.54 (U)	—	—	—	—	0.35 (U)	1.4 (U)	—	—	—
0554-95-0365	54-01107	19.7–21.5	Qbt 2	0.52 (U)	—	—	—	—	0.33 (U)	1.1 (U)	—	—	—
0554-95-0368	54-01107	26–28	Qbt 2	0.54 (U)	—	—	—	—	0.34 (U)	1.3 (U)	—	—	—
0554-95-0371	54-01107	36–38	Qbt 2	0.53 (U)	—	—	—	—	0.34 (U)	1.2 (U)	—	—	—
0554-95-0374	54-01107	47–49	Qbt 2	0.53 (U)	—	—	—	—	0.34 (U)	1.2 (U)	—	—	—
0554-95-0377	54-01107	54–56	Qbt 2	0.54 (U)	—	—	—	—	0.35 (U)	1.2 (U)	—	—	—
0554-95-0380	54-01107	66.5–69	Qbt 1v	0.51 (U)	—	—	—	—	0.33 (U)	1.1 (U)	—	—	—
0554-95-0383	54-01107	77–79.5	Qbt 1v	0.52 (U)	—	—	—	—	0.33 (U)	1.1 (U)	—	—	—
0554-95-0386	54-01107	86–88.3	Qbt 1v	0.53 (U)	—	—	—	—	0.34 (U)	1.2 (U)	—	—	—
0554-95-0709	54-01107	127–128.5	Qbt 1g	0.16 (U)	—	—	—	4.4	0.31 (U)	—	—	—	—
0554-95-0473	54-01108	8.5–10.1	Qbt 2	—	—	0.11 (U)	—	—	0.66 (U)	—	—	—	—

Table 2.2-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Magnesium	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Qbt 2,3,4 Background Value				**0.5**	**1690**	**0.1**	**na**	**6.58**	**0.3**	**1**	**1.1**	**17**	**63.5**
Qbt 1v Background Value				**0.5**	**780**	**0.1**	**na**	**2**	**0.3**	**1**	**1.24**	**4.48**	**87.6**
Qbt 1g, Qct, Qbo Background Value				**0.5**	**739**	**0.1**	**na**	**2**	**0.3**	**1**	**1.22**	**4.59**	**40**
Industrial Soil Screening Level (mg/kg)				**22700**	[b]	**340**	**5680**	**22500**	**5680**	**5680**	**74.9**	**7950**	**100000**
0554-95-0477	54-01108	20.6–22.3	Qbt 2	—	—	0.11 (U)	—	—	0.66 (U)	—	—	—	—
0554-95-0481	54-01108	29.9–31.7	Qbt 2	—	—	—	—	—	0.65 (U)	—	—	—	—
0554-95-0485	54-01108	38.3–40	Qbt 2	—	—	0.11 (U)	—	—	0.64 (U)	—	—	—	—
0554-95-0489	54-01108	49.4–51	Qbt 1v	—	—	—	—	—	0.62 (U)	—	—	—	—
AAB2638	54-01110	6–7.5	Qbt 2	—	—	—	—	—	0.6 (U)	—	—	—	—
AAB2640	54-01110	16.5–17.5	Qbt 2	—	—	—	—	—	0.61 (U)	—	—	—	—
AAB2634	54-01110	26–28	Qbt 2	—	—	—	—	—	0.6 (U)	—	—	—	—
AAB2656	54-01110	36.5–37.5	Qbt 2	—	—	—	—	—	0.58 (U)	—	—	—	—
AAB2642	54-01110	46–48	Qbt 2	0.05 (U)	—	—	0.9 (U)	—	—	—	—	—	—
AAB2636	54-01110	56–57	Qbt 1v	0.05 (U)	—	—	0.9 (U)	—	—	—	—	—	—
AAB2648	54-01110	75–77	Qbt 1v	0.05 (U)	—	—	1.9	—	—	—	—	—	—
AAB2652	54-01110	88–90	Qbt 1g	0.05 (U)	—	—	1.4	—	—	—	—	—	—
AAB2654	54-01110	101–102	Qbt 1g	0.05 (U)	—	—	1.8	—	—	—	—	—	42
AAB2683	54-01111	4–5.5	Qbt 2	—	—	—	—	—	0.52 (U)	—	—	—	—
AAB2675	54-01111	14.5–15.5	Qbt 2	—	—	—	—	—	0.5 (U)	—	—	—	—
AAB2685	54-01111	18.5–21	Qbt 2	—	—	—	—	—	0.5 (U)	—	—	—	—
AAB2669	54-01111	28–30.5	Qbt 2	—	—	—	—	—	0.5 (U)	—	—	—	—
AAB2667	54-01111	38–39.5	Qbt 2	—	—	—	—	—	0.5 (U)	—	—	—	—
AAB2677	54-01111	50–51.5	Qbt 1v	—	—	—	—	—	0.58 (U)	—	—	—	—
AAB2679	54-01111	60–61.5	Qbt 1v	—	—	—	—	—	0.58 (U)	—	—	—	—
AAB2671	54-01111	70.5–72.5	Qbt 1v	—	—	—	—	—	0.58 (U)	—	—	—	—
AAB2661	54-01111	79.5–81.5	Qbt 1v	—	—	—	—	—	0.6 (U)	—	—	—	—
AAB2663	54-01111	79.5–81.5	Qbt 1v	—	—	—	—	—	0.6 (U)	—	—	—	—
AAB2665	54-01111	89–90	Qbt 1g	—	—	—	—	—	0.58 (U)	—	—	—	—
AAB2722	54-01111	108–110	Qbt 1g	—	—	—	—	—	0.6 (UJ)	—	—	—	—
0554-95-0712	54-01112	9–9.2	Qbt 2	0.2 (U)	—	—	—	—	0.49 (U)	—	—	—	—

Table 2.2-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Magnesium	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Qbt 2,3,4 Background Value				**0.5**	**1690**	**0.1**	**na**	**6.58**	**0.3**	**1**	**1.1**	**17**	**63.5**
Qbt 1v Background Value				**0.5**	**780**	**0.1**	**na**	**2**	**0.3**	**1**	**1.24**	**4.48**	**87.6**
Qbt 1g, Qct, Qbo Background Value				**0.5**	**739**	**0.1**	**na**	**2**	**0.3**	**1**	**1.22**	**4.59**	**40**
Industrial Soil Screening Level (mg/kg)				**22700**	[b]	**340**	**5680**	**22500**	**5680**	**5680**	**74.9**	**7950**	**100000**
0554-95-0715	54-01112	13.5–17.5	Qbt 2	0.2 (U)	—	—	—	—	0.49 (U)	—	—	—	—
0554-95-0716	54-01112	13.5–17.5	Qbt 2	0.2 (U)	—	—	—	—	0.49 (U)	—	—	—	—
0554-95-0718	54-01112	25.3–27.3	Qbt 2	0.2 (U)	—	—	—	—	0.49 (U)	—	—	—	—
0554-95-0721	54-01112	32.9–34.9	Qbt 2	0.2 (U)	—	—	—	—	0.49 (U)	—	—	—	—
0554-95-0724	54-01112	45.5–47.5	Qbt 1v	0.21 (U)	—	—	—	—	0.5 (U)	—	—	—	—
0554-95-0727	54-01112	48.5–50.5	Qbt 1v	0.21 (U)	1040 (J)	—	—	2.3 (J)	0.5 (U)	—	—	—	—
0554-95-0730	54-01112	54.9–57.1	Qbt 1v	0.2 (U)	—	—	—	—	0.5 (U)	—	—	—	—
0554-95-0493	54-01114	8.8–10.3	Qbt 2	0.21 (J)	—	—	—	—	0.7 (U)	—	—	—	—
0554-95-0497	54-01114	18.7–20.2	Qbt 2	0.37 (J)	—	—	—	—	0.79 (U)	—	—	—	—
0554-95-0501	54-01114	26.5–28.7	Qbt 2	0.2 (U)	—	—	—	—	0.49 (U)	—	—	—	—
0554-95-0505	54-01114	38.5–40	Qbt 1v	0.2	—	—	—	—	0.49 (U)	—	—	—	—
0554-95-0510	54-01115	10–11.1	Qbt 2	0.108 (U)	—	—	—	—	0.66 (UJ)	—	—	—	—
0554-95-0515	54-01115	18.5–19.8	Qbt 2	0.106 (U)	—	0.11 (U)	—	—	0.64 (UJ)	—	—	—	—
0554-95-0520	54-01115	29.7–30.9	Qbt 2	0.105 (U)	—	0.11 (U)	—	—	0.65 (UJ)	—	—	—	—
0554-95-0525	54-01115	39.5–40.8	Qbt 1v	0.105 (U)	—	0.11 (U)	—	—	0.63 (UJ)	—	—	—	—
0554-95-0530	54-01115	50.1–51.2	Qbt 1v	0.103 (U)	—	—	—	—	0.64 (UJ)	—	—	92 (J)	—
0554-95-0535	54-01115	60.1–61.4	Qbt 1v	0.1 (U)	—	—	—	—	0.59 (UJ)	—	—	—	—
0554-95-0540	54-01115	68.0–69.3	Qbt 1v	0.101 (U)	—	—	—	—	0.6 (UJ)	—	—	—	—
0554-95-0655	54-01116	9–9.3	Qbt 2	0.53 (U)	—	—	—	—	0.34 (UJ)	—	—	—	—
0554-95-0658	54-01116	20.5–22.5	Qbt 2	0.52 (U)	—	—	—	—	0.34 (UJ)	—	—	—	—
0554-95-0661	54-01116	29.5–31.5	Qbt 2	0.52 (U)	—	—	—	—	0.33 (UJ)	—	—	—	—
0554-95-0664	54-01116	36.5–38.5	Qbt 2	0.5 (U)	—	—	—	—	0.31 (UJ)	—	—	—	—
0554-95-0667	54-01116	46.5–48.5	Qbt 1v	0.5 (U)	—	—	—	2.9 (U)	0.32 (UJ)	—	—	—	—
0554-95-0670	54-01116	57.5–59.5	Qbt 1v	0.5 (U)	—	—	—	3 (U)	0.32 (UJ)	—	—	—	—
0554-95-0673	54-01116	69.5–71.5	Qbt 1v	0.5 (U)	—	—	—	3 (U)	0.32 (UJ)	—	—	—	—
0554-95-0676	54-01116	77.5–79.5	Qbt 1v	0.51 (U)	—	—	—	3 (U)	0.32 (UJ)	—	—	—	—

Table 2.2-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Magnesium	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Qbt 2,3,4 Background Value				**0.5**	**1690**	**0.1**	**na**	**6.58**	**0.3**	**1**	**1.1**	**17**	**63.5**
Qbt 1v Background Value				**0.5**	**780**	**0.1**	**na**	**2**	**0.3**	**1**	**1.24**	**4.48**	**87.6**
Qbt 1g, Qct, Qbo Background Value				**0.5**	**739**	**0.1**	**na**	**2**	**0.3**	**1**	**1.22**	**4.59**	**40**
Industrial Soil Screening Level (mg/kg)				**22700**	[b]	**340**	**5680**	**22500**	**5680**	**5680**	**74.9**	**7950**	**100000**
0554-95-0679	54-01116	87.5–89.5	Qbt 1g	0.5 (U)	—	—	—	2.9 (U)	0.32 (UJ)	—	—	—	—
0554-95-0628	54-01117	9–9.5	Qbt 2	0.51 (U)	—	—	—	—	0.33 (UJ)	—	—	—	—
0554-95-0631	54-01117	20–22	Qbt 2	0.51 (U)	—	—	—	—	0.33 (UJ)	—	—	—	—
0554-95-0634	54-01117	30–32	Qbt 2	0.19 (U)	—	—	—	—	0.47 (U)	—	—	—	—
0554-95-0637	54-01117	36–38	Qbt 1v	0.19 (U)	—	—	—	—	0.54 (J)	—	—	—	—
0554-95-0640	54-01117	46–48	Qbt 1v	0.19 (U)	—	—	—	—	0.64 (J)	—	—	—	—
0554-95-0643	54-01117	56–58	Qbt 1v	0.19 (U)	—	—	—	—	0.46 (U)	—	—	—	—
0554-95-0646	54-01117	67–69	Qbt 1v	0.97 (U)	—	—	—	—	0.47 (U)	—	—	—	—
0554-95-0649	54-01117	78–80	Qbt 1v	0.2 (U)	—	—	—	—	0.49 (U)	—	—	—	—
0554-95-0652	54-01117	86–88	Qbt 1g	0.19 (U)	—	—	—	—	0.47 (U)	—	—	—	—
0554-95-0609	54-01120	9.9–11.3	Qbt 2	0.39 (U)	—	—	—	—	0.42 (U)	—	—	—	—
0554-95-0613	54-01120	20.5–21.9	Qbt 2	0.35 (U)	—	—	—	—	0.41 (U)	—	—	—	—
0554-95-0617	54-01120	29.7–31.1	Qbt 2	0.15 (U)	—	—	—	—	0.41 (U)	—	—	—	—
0554-95-0621	54-01120	40.7–42.1	Qbt 1v	0.2 (U)	—	—	—	4.9	0.41 (U)	—	—	—	—
0554-95-0625	54-01120	48.1–49.5	Qbt 1v	0.16 (U)	—	—	—	—	0.42 (U)	—	—	—	—
0554-95-0782	54-01121	9–9.3	Qbt 2	0.21 (U)	—	—	—	—	0.51 (U)	—	—	—	—
0554-95-0787	54-01121	19–21	Qbt 2	0.2 (U)	—	—	—	—	0.49 (U)	—	—	—	—
0554-95-0792	54-01121	29–31	Qbt 1v	0.2 (U)	—	—	—	—	0.49 (U)	—	—	—	—
0554-95-0797	54-01121	39–41	Qbt 1v	0.2 (U)	—	—	—	—	0.48 (U)	—	—	—	—
0554-95-0802	54-01121	49–51	Qbt 1v	0.2 (U)	—	—	—	—	0.49 (U)	—	—	—	—
0554-95-0807	54-01121	58.5–61	Qbt 1v	0.2 (U)	—	—	—	—	0.48 (U)	—	—	—	—
0554-95-0733	54-01123	9–9.2	Qbt 2	0.525 (U)	—	0.34 (J+)	0.14 (U)	—	0.61 (U)	—	—	—	—
0554-95-0737	54-01123	16.2–18	Qbt 2	0.517 (U)	—	0.44 (J+)	0.27 (U)	—	0.64 (U)	—	—	—	—
0554-95-0741	54-01123	26.2–28	Qbt 2	0.512 (U)	—	0.3 (J+)	0.38 (U)	—	0.63 (U)	—	—	—	—
0554-95-0745	54-01123	36–38	Qbt 1v	0.505 (U)	—	—	0.18 (U)	—	0.62 (U)	—	—	—	—
0554-95-0749	54-01123	46–48	Qbt 1v	0.509 (U)	—	—	0.14 (U)	—	0.62 (U)	—	—	—	—

Table 2.2-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Magnesium	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Qbt 2,3,4 Background Value				**0.5**	**1690**	**0.1**	**na**	**6.58**	**0.3**	**1**	**1.1**	**17**	**63.5**
Qbt 1v Background Value				**0.5**	**780**	**0.1**	**na**	**2**	**0.3**	**1**	**1.24**	**4.48**	**87.6**
Qbt 1g, Qct, Qbo Background Value				**0.5**	**739**	**0.1**	**na**	**2**	**0.3**	**1**	**1.22**	**4.59**	**40**
Industrial Soil Screening Level (mg/kg)				**22700**	[b]	**340**	**5680**	**22500**	**5680**	**5680**	**74.9**	**7950**	**100000**
0554-95-0753	54-01123	55.5–57.5	Qbt 1v	0.521 (U)	—	—	0.55 (U)	—	0.62 (U)	—	—	—	—
0554-95-0779	54-01123	92.5–97	Qbt 1v	0.554 (U)	1930 (J+)	0.11 (U)	0.15 (U)	—	0.65 (U)	—	—	5.7 (J)	—
0554-95-0564	54-01124	9–10	Qbt 2	0.55 (U)	—	0.11 (U)	—	—	1.1 (U)	2.2 (UJ)	—	—	—
0554-95-0569	54-01124	20.3–21.3	Qbt 2	0.52 (U)	—	—	—	—	1 (U)	2.1 (UJ)	—	—	—
0554-95-0574	54-01124	29.5–30.5	Qbt 1v	0.56 (U)	—	0.11 (U)	—	2.2 (U)	1.1 (U)	2.2 (UJ)	—	—	—
0554-95-0579	54-01124	37.3–38.3	Qbt 1v	0.51 (U)	—	—	—	—	1 (U)	2 (UJ)	—	—	—
0554-95-0846	54-01125	9–9.2	Qbt 2	0.54 (U)	—	0.11 (U)	—	—	1.1 (U)	2.2 (U)	1.4 (U)	—	—
0554-95-0849	54-01125	16–18	Qbt 2	0.56 (U)	—	0.11 (U)	—	—	1.1 (U)	2.2 (U)	1.4 (U)	—	—
0554-95-0852	54-01125	26–28	Qbt 2	0.54 (U)	—	0.11 (U)	—	—	1.1 (U)	2.2 (U)	1.4 (U)	—	—
0554-95-0855	54-01125	36–38	Qbt 2	0.54 (U)	—	0.11 (U)	—	—	1.1 (U)	2.2 (U)	1.3 (U)	—	—
0554-95-0858	54-01125	46–48	Qbt 1v	0.55 (U)	—	0.11 (U)	—	2.2 (U)	1.1 (U)	2.2 (U)	1.4 (U)	—	—
0554-95-0861	54-01125	59–61	Qbt 1v	0.57 (U)	—	0.11 (U)	—	2.3 (U)	1.1 (U)	2.3 (U)	1.4 (U)	—	—
0554-95-0584	54-01126	9.3–10.3	Qbt 2	0.18 (J)	—	—	—	—	0.43 (U)	—	—	—	—
0554-95-0589	54-01126	18.5–19.8	Qbt 2	0.34 (J)	—	—	—	—	0.41 (U)	—	—	—	—
0554-95-0594	54-01126	28.8–29.8	Qbt 1v	0.17 (J)	—	—	—	—	0.42 (U)	—	—	—	—
0554-95-0599	54-01126	37.3–38.3	Qbt 1v	0.2 (U)	—	—	—	—	0.48 (U)	—	—	—	—
0554-95-0604	54-01126	47.3–48.3	Qbt 1v	0.71	—	—	—	—	0.47 (U)	—	—	—	—
0554-95-0544	54-01128	9–10	Qbt 2	0.51 (U)	—	—	—	—	1 (U)	2 (UJ)	—	—	—
0554-95-0549	54-01128	18.9–20	Qbt 2	0.51 (U)	—	—	—	—	1 (U)	2 (UJ)	—	—	—
0554-95-0554	54-01128	28–29	Qbt 1v	0.53 (U)	—	0.11 (U)	—	2.1 (U)	1.1 (U)	2.1 (UJ)	—	—	—
0554-95-0559	54-01128	39–40	Qbt 1v	0.53 (U)	—	0.11 (U)	—	2.1 (U)	1.1 (U)	2.1 (UJ)	—	—	—

Note: All values in mg/kg. See Appendix A for data qualifier definitions.

[a] na = No BV available.

[b] Industrial SSL for cadmium calculated incorrectly in NMED 2004 85615, SSL recalculated using NMED parameters.

[c] Essential nutrient.

[d] — = Not detected above BV.

Table 3.3-1
MDA G Investigation Work Plan Drilling Summary

Borehole ID	Borehole Location	Target Depth (ft)	Drilled Depth (ft)	Length (ft)	Angle	Drill Method Used
BH 1	54-24360	200	200	200	90	HSA
BH 2	54-24361	200	170	170	90	HSA
BH 3	54-24362	200	189	189	90	HSA
BH 4	54-24363	250	176.8	250	45	HSA
BH 5	54-24364	200	200	200	90	HSA
BH 6	54-24366	300	176.8	250	45	HSA
BH 7	54-24367	200	200	200	90	HSA
BH 8	54-24368	300	201.5	285	45	HSA
BH 9	54-24369	250	250	250	90	HSA
BH 10	54-24370	225	225	225	90	HSA
BH 11	54-24371	200	200	200	90	HSA
BH 12	54-24372	250	250	250	90	HSA
BH 13	54-24373	250	250	250	90	HSA
BH 14	54-24374	200	200	200	90	HSA
BH 15	54-24375	200	200	200	90	HSA
BH 15-2	54-24523	700	556	556	90	Air-Rotary
BH 15-3	54-25105	700	700	700	90	Air-Rotary
BH 16	54-24376	200	200	200	90	HSA
BH 17	54-24377	200	200	200	90	HSA
BH 18	54-24378	200	182	182	90	HSA
BH 19	54-24379	200	200	200	90	HSA
BH 20	54-24380	200	196	196	90	HSA
BH 21	54-24381	200	200	200	90	HSA
BH 22	54-24382	200	147	147	90	HSA
BH 23	54-24383	200	147.5	147.5	90	HSA
BH 24	54-24384	200	68	68	90	HSA
BH 25	54-24385	200	177	177	90	HSA
BH 26	54-24386	200	186	186	90	HSA
BH 27	54-24387	200	81	81	90	HSA
BH 28	54-24388	200	180	180	90	HSA
BH 29	54-24389	200	200	200	90	HSA
BH 30	54-24390	200	186	186	90	HSA
BH 31	54-24391	200	200	200	90	HSA
BH 32	54-24392	200	200	200	90	HSA
BH 33	54-24393	225	206	206	90	HSA
BH 34	54-24394	200	200	200	90	HSA
BH 35	54-24395	200	200	200	90	HSA
BH 36	54-24396	200	200	200	90	HSA
BH 37	54-24397	200	200	200	90	HSA

Table 4.2-1
Fracture Sample Summary for Boreholes at MDA G

Borehole ID	Borehole Location	Sample ID	Media Code	Begin Depth (ft)	End Depth (ft)	Sample Description	Notes
BH 3	54-24362	MD54-05-57887	Qbt 2	35	40	Fracture (38–40 ft) filled with clay	Sample represents base of closest disposal unit
		MD54-05-57894					Duplicate of MD54-05-57887
BH 4	54-24363	MD54-05-57896	Qbt 2	42.8	45.2	Clay filled fracture	Did not collect a paired sample above fracture because a sample was collected at 31.8–35.4 ft
BH 9	54-24369	MD54-05-57960	Qbt 2	65	70	2–3 mm thick clay filled fracture	Sample represents base of closest disposal unit
		MD54-05-57967					Duplicate of MD54-05-57967
BH 15	54-24375	MD54-05-58014	Qbt 2	62	64	Tuff sample collected above fracture	**Paired fracture sample**
		MD54-05-58015		64	65	1–2 mm thick mud filled fracture	
BH 25	54-24385	MD54-05-58103	Qbt 2	30	35	Fracture (31.8–32.0 ft) filled with 0.1 mm clay coating	Sample represents base of closest disposal unit
		MD54-05-58110					Duplicate of MD54-05-58103
BH 26	54-24386	MD54-05-58117	Qbt 2	56	58	Tuff sample collected above fracture	**Paired fracture sample**
		MD54-05-58118		58	59	2-mm-thick silt filled fracture	
BH 30	54-24390	MD54-05-58149	Qbt 2	56	57	Fracture from 56–57 ft	Not enough material in core barrel to collect sample above the fracture
		MD54-05-58150	Qbt 1v	93	94	Tuff sample collected above fracture	**Paired fracture sample**
		MD54-05-58151		94	95	1–2 mm thick clay filled fracture	
BH 34	54-24394	MD54-05-58186	Qbt 2	50	55	Fracture (50–55 ft) filled with 3-mm-thick clay and organic material	Did not collect sample above fracture because a sample was collected at 40–45 ft
		MD54-05-58187	Qbt 1v	100	102	Tuff sample collected above fracture	**Paired fracture sample**
		MD54-05-58188		102	105	1.5–2 mm thick silt filled fracture	

Table 6.1-1
Summary of Subsurface Soil and Rock Sampling at MDA G

Borehole ID	Borehole Location	Actual Analytical Sample Depth (ft)	Matrix	Sample ID	Sample Type
BH 1	54-24360	60–65	QBT1v	MD54-05-57871	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		60–65	QBT1v	MD54-05-57878	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		135–138	QCT	MD54-05-57872	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		195–200	QBO	MD54-05-57873	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, 8330
BH 2	54-24361	30–35	QBT2	MD54-05-57879	Netals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		30–35	QBT2	MD54-05-57886	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		168–170	QBO	MD54-05-57885	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, 8330
BH 3	54-24362	35–40	QBT2	MD54-05-57887	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		35–40	QBT2	MD54-05-57894	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		187–189	ALLH	MD54-05-57893	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 4	54-24363	31.8–35.4	QBT2	MD54-05-57895	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		31.8–35.4	QBT2	MD54-05-57902	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		42.8–45.2	QBT2	MD54-05-57896	Metals+Cn+B+Mo+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		113.1–114.5	QBT1g	MD54-05-57897	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		175.3–176.8	QBOg	MD54-05-57901	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 5	54-24364	65–70	QBT1v	MD54-05-57903	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		65–70	QBT1v	MD54-05-57910	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		195–200	QBO	MD54-05-57909	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate

Table 6.1-1 (continued)

Borehole ID	Borehole Location	Actual Analytical Sample Depth (ft)	Matrix	Sample ID	Sample Type
BH 6	54-24366	99–101	QBT1g	MD54-05-57936	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		175.9–176.8	QBO	MD54-05-57942	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 7	54-24367	30–35	QBT2	MD54-05-57944	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		30–35	QBT2	MD54-05-57951	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		198–200	QBO	MD54-05-57950	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 8	54-24368	67–70	QBT1v	MD54-05-57952	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		67–70	QBT1v	MD54-05-57959	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		200.1–201.5	QBO	MD54-05-57958	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 9	54-24369	65–70	QBT2	MD54-05-57960	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		65–70	QBT2	MD54-05-57967	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		183–185	QCT	MD54-05-57966	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		248–250	QBOg	MD54-05-57961	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 10	54-24370	37–40	QBT2	MD54-05-57968	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		223–225	QBOg	MD54-05-57974	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, HE
BH 11	54-24371	40–45	QBT2	MD54-05-57981	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		40–45	QBT2	MD54-05-57988	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		198–200	QBO	MD54-05-57987	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate

Table 6.1-1 (continued)

Borehole ID	Borehole Location	Actual Analytical Sample Depth (ft)	Matrix	Sample ID	Sample Type
BH 12	54-24372	55–60	QBT2	MD54-05-57989	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		55–60	QBT2	MD54-05-57996	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		248–250	QBO	MD54-05-57995	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 13	54-24373	65–70	QBT1v	MD54-05-57997	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		65–70	QBT1v	MD54-05-58004	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		248–250	QBO	MD54-05-58003	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 14	54-24374	12–15 ft	QBT2	MD54-05-58005	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		12–15 ft	QBT2	MD54-05-58012	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		198–200	QBO	MD54-05-58011	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate,
BH 15	54-24375	30–35	QBT2	MD54-05-58013	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		30–35	QBT2	MD54-05-58020	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		62–64	QBT2	MD54-05-58014	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		64–65	QBT2	MD54-05-58015	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		195–200	QBO	MD54-05-58019	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 16	54-24376	35–40	QBT2	MD54-05-58026	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		35–40	QBT2	MD54-05-58033	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		198–200	QBO	MD54-05-58032	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate

Table 6.1-1 (continued)

Borehole ID	Borehole Location	Actual Analytical Sample Depth (ft)	Matrix	Sample ID	Sample Type
BH 17	54-24377	45–50	QBT1v	MD54-05-58034	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		45–50	QBT1v	MD54-05-58041	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		198–200	QBO	MD54-05-58040	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 18	54-24378	25–30	QBT2	MD54-05-58042	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		25–30	QBT2	MD54-05-58049	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		148.5–150	QCT	MD54-05-58043	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		180–182	QBO	MD54-05-58048	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 19	54-24379	20–25	QBT2	MD54-05-58050	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		20–25	QBT2	MD54-05-58057	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		117–119	QCT	MD54-05-58051	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		148–150	QBO	MD54-05-58052	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		198–200	QBOg	MD54-05-58056	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 20	54-24380	20–25	QBT2	MD54-05-58058	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		20–25	QBT2	MD54-05-58065	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		176–178	QCT	MD54-05-58059	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		195–196	QCT	MD54-05-58064	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate

Table 6.1-1 (continued)

Borehole ID	Borehole Location	Actual Analytical Sample Depth (ft)	Matrix	Sample ID	Sample Type
BH 21	54-24381	15–20	QBT2	MD54-05-58071	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		15–20	QBT2	MD54-05-58078	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		110–112	QBT1g	MD54-05-58072	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		148–150	QBO	MD54-05-58073	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		198–200	QBO	MD54-05-58077	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, HE
BH 22	54-24382	30–35	QBT2	MD54-05-58079	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		30–35	QBT2	MD54-05-58086	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		103–105	QCT	MD54-05-58080	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		145–147	QBO	MD54-05-58085	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 23	54-24383	20–25	QBT2	MD54-05-58087	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		20–25	QBT2	MD54-05-58094	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		145–147.5	ALLH	MD54-05-58093	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 24	54-24384	25–30	QBT2	MD54-05-58095	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		25–30	QBT2	MD54-05-58102	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		66–68	ALLH	MD54-05-58101	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 25	54-24385	30–35	QBT2	MD54-05-58103	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		30–35	QBT2	MD54-05-58110	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		110.5–112.5	QCT	MD54-05-58104	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		175.5–177	ALLH	MD54-05-58109	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate

Table 6.1-1 (continued)

Borehole ID	Borehole Location	Actual Analytical Sample Depth (ft)	Matrix	Sample ID	Sample Type
BH 26	54-24386	35–40	QBT2	MD54-05-58116	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		35–40	QBT2	MD54-05-58123	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		56–58	QBT2	MD54-05-58117	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		58–59	QBT2	MD54-05-58118	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		110–112	QCT	MD54-05-58119	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate,
		185–186	ALLH	MD54-05-58122	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 27	54-24387	5–10 ft	QBT2	MD54-05-58124	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		5–10 ft	QBT2	MD54-05-58131	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		78–81	QBOG /ALLH	MD54-05-58130	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 28	54-24388	25–30	QBT2	MD54-05-58132	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		25–30	QBT2	MD54-05-58139	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		63–64.5	QBT2	MD54-05-58133	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		132.5–134.5	QBT1g	MD54-05-58134	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		155–157	QCT	MD54-05-58135	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		177–180	QCT	MD54-05-58138	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, HE
BH 29	54-24389	20–25	QBT2	MD54-05-58140	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		20–25	QBT2	MD54-05-58147	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		173–175	QCT	MD54-05-58141	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		198–200	QBO	MD54-05-58146	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate

Table 6.1-1 (continued)

Borehole ID	Borehole Location	Actual Analytical Sample Depth (ft)	Matrix	Sample ID	Sample Type
BH 30	54-24390	30–35	QBT2	MD54-05-58148	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		30–35	QBT2	MD54-05-58155	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		56–57	QBT2	MD54-05-58149	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		93–94	QBT1v	MD54-05-58150	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		94–95	QBT1v	MD54-05-58151	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		185–186	ALLH	MD54-05-58154	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 31	54-24391	25–30	QBT2	MD54-05-58161	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		25–30	QBT2	MD54-05-58168	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		198–200	QBO	MD54-05-58167	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, HE
BH 32	54-24392	25–30	QBT2	MD54-05-58169	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		25–30	QBT2	MD54-05-58176	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		198–200	QBO	MD54-05-58175	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 33	54-24393	35–40	QBT2	MD54-05-58177	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		35–40	QBT2	MD54-05-58184	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		158–160	QCT	MD54-05-58178	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		193–194	QBO	MD54-05-58179	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		204–206	QBOg	MD54-05-58183	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate

Table 6.1-1 (continued)

Borehole ID	Borehole Location	Actual Analytical Sample Depth (ft)	Matrix	Sample ID	Sample Type
BH 34	54-24394	40–45	QBT2	MD54-05-58185	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		40–45	QBT2	MD54-05-58192	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		50–55	QBT2	MD54-05-58186	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		100–102	QBT1v	MD54-05-58187	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		102–105	QBT1v	MD54-05-58188	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		198–200	QBO	MD54-05-58191	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, HE
BH 35	54-24395	40–45	QBT2	MD54-05-58193	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		40–45	QBT2	MD54-05-58200	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		153–155	QBT1g	MD54-05-58194	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		188–190	QCT	MD54-05-58195	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		198–200	QBO	MD54-05-58199	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 36	54-24396	10–15 ft	QBT2	MD54-05-58206	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		10–15 ft	QBT2	MD54-05-58213	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		154–155	QCT	MD54-05-58207	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		198–200	QBO	MD54-05-58212	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
BH 37	54-24397	15–20	QBT2	MD54-05-58214	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
		15–20	QBT2	MD54-05-58221	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
		159–160	QCT	MD54-05-58215	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
		198–200	QBO	MD54-05-58220	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate

Table 6.3-1
Inorganic Chemicals Detected above BVs in Subsurface Samples from MDA G

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chloride	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium
Soil Background Value				**29,200**	**8.17**	**295**	**1.83**	**na[a]**	**0.4**	**6120**	**na**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**
Qbt 2,3,4 Background Value				**7340**	**2.79**	**46**	**1.21**	**na**	**1.63**	**2200**	**na**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**
Qbt 1v Background Value				**8170**	**1.81**	**26.5**	**1.7**	**na**	**0.4**	**3700**	**na**	**2.24**	**1.78**	**3.26**	**0.5**	**9900**	**18.4**	**780**
Qbt 1g, Qct, Qbo, Qbog[b] Background Value				**3560**	**0.56**	**25.7**	**1.44**	**na**	**0.4**	**1900**	**na**	**2.6**	**8.89**	**3.96**	**0.5**	**3700**	**13.5**	**739**
Tcb Background Value				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Industrial Soil Screening Levels				**100000**	**17.7**	**78300**	**2250**	**61600**	**1130[c]**	**na**	**na**	**5000[d]**	**20500**	**45400**	**22700**	**100000**	**750**	**na**
Residential Soil Screening Levels				**77800**	**3.9**	**5450**	**156**	**5500**	**74.1**	**na**	**na**	**2100[d]**	**1520**	**3130**	**1560**	**23500**	**400**	**na**
MD54-05-57879	54-24361	30.00–35.00	Qbt 2	—[e]	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-57885	54-24361	168.00–170.00	Qbo	—	—	—	—	—	0.532 (U)	—	—	—	—	—	—	—	—	—
MD54-05-57887	54-24362	35.00–40.00	Qbt 2	—	—	—	—	2.12 (J)	—	—	—	—	—	—	—	—	—	—
MD54-05-57893	54-24362	187.00–189.00	Soil	—	—	—	—	5.49 (J)	1.93	75500 (J+)	—	—	9.04	16.8	—	—	—	6680
MD54-05-57895	54-24363	31.80–35.40	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-57896	54-24363	42.80–45.20	Qbt 2	28900 (J-)	4.94	140	3.41	16.8	—	4200 (J+)	—	13.2	5.69	20.7	—	16500 (J+)	16.5	6680
MD54-05-57897	54-24363	113.10–114.50	Qbt 1g	—	1.64 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-57901	54-24363	175.30–176.80	Qbog	4140 (J+)	0.727 (J)	—	—	—	—	2460 (J+)	—	10.2	—	4.32	—	5500	—	3050
MD54-05-57903	54-24364	65.00–70.00	Qbt 1v	—	—	—	—	—	0.503 (U)	—	—	—	—	—	—	—	—	—
MD54-05-57909	54-24364	195.00–200.00	Qbo	—	—	35	—	—	0.528 (U)	—	—	—	—	—	—	—	—	—
MD54-05-57936	54-24366	99.00–101.80	Qbt 1g	—	1.53 (U)	—	—	—	0.51 (U)	—	—	—	—	—	—	—	—	—
MD54-05-57942	54-24366	175.40–176.80	Qbo	—	1.58 (U)	26.3	—	—	0.526 (U)	—	—	—	—	—	—	—	—	—
MD54-05-57944	54-24367	30.00–35.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-57950	54-24367	198.00–200.00	Qbo	—	1.53 (U)	44.3	—	—	0.51 (U)	—	—	—	—	—	2.38 (J)	—	—	861
MD54-05-57952	54-24368	67.00–70.00	Qbt 1v	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-57958	54-24368	200.10–201.50	Qbo	—	1.58 (U)	—	—	—	0.526 (U)	—	—	—	—	—	—	—	—	1070 (J+)
MD54-05-57960	54-24369	65.00–70.00	Qbt 2	9530	—	—	3.27 (J)	4.14 (J)	—	2840	—	—	—	9.27	—	—	—	2460
MD54-05-57961	54-24369	183.00–185.00	Qct	4790	1.62 (U)	—	—	1.76 (J)	—	—	—	—	—	—	—	—	32.6	877
MD54-05-57966	54-24369	248.00–250.00	Qbog	—	—	26.3	—	—	0.533 (J)	—	—	—	—	—	—	—	—	—
MD54-05-57968	54-24370	37.00–40.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-57974	54-24370	223.00–225.00	Qbog	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-57981	54-24371	40.00–45.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-57987	54-24371	198.00–200.00	Qbo	—	1.55 (U)	—	—	—	—	—	—	—	—	—	—	—	—	1160
MD54-05-57989	54-24372	55.00–60.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	1.21	—	—	—
MD54-05-57995	54-24372	248.00–250.00	Qbo	—	1.57 (U)	—	—	—	0.523 (U)	—	—	—	—	—	—	—	—	—
MD54-05-57997	54-24373	65.00–70.00	Qbt 1v	—	—	—	—	—	0.502 (U)	—	—	—	—	—	—	—	—	—
MD54-05-58003	54-24373	248.00–250.00	Qbo	—	1.57 (U)	—	—	—	0.524 (U)	—	—	—	—	—	—	—	—	744
MD54-05-58005	54-24374	12.00–15.00	Qbt 2	—	—	—	—	1.04 (J)	—	—	—	—	—	—	—	—	—	—

Table 6.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chloride	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium
Soil Background Value				**29,200**	**8.17**	**295**	**1.83**	**na[a]**	**0.4**	**6120**	**na**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**
Qbt 2,3,4 Background Value				**7340**	**2.79**	**46**	**1.21**	**na**	**1.63**	**2200**	**na**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**
Qbt 1v Background Value				**8170**	**1.81**	**26.5**	**1.7**	**na**	**0.4**	**3700**	**na**	**2.24**	**1.78**	**3.26**	**0.5**	**9900**	**18.4**	**780**
Qbt 1g, Qct, Qbo, Qbog[b] Background Value				**3560**	**0.56**	**25.7**	**1.44**	**na**	**0.4**	**1900**	**na**	**2.6**	**8.89**	**3.96**	**0.5**	**3700**	**13.5**	**739**
Tcb Background Value				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Industrial Soil Screening Levels				**100000**	**17.7**	**78300**	**2250**	**61600**	**1130[c]**	**na**	**na**	**5000[d]**	**20500**	**45400**	**22700**	**100000**	**750**	**na**
Residential Soil Screening Levels				**77800**	**3.9**	**5450**	**156**	**5500**	**74.1**	**na**	**na**	**2100[d]**	**1520**	**3130**	**1560**	**23500**	**400**	**na**
MD54-05-58011	54-24374	198.00–200.00	Qbo	—	1.62 (U)	29.6	—	—	0.538 (U)	—	—	—	—	—	—	—	—	747 (J+)
MD54-05-58013	54-24375	30.00–35.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58014	54-24375	62.00–64.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58015	54-24375	64.00–65.00	Qbt 2	—	—	—	1.5	—	—	—	—	—	—	5.72	—	—	—	—
MD54-05-58019	54-24375	195.00–200.00	Qbo	—	—	—	—	—	0.534 (U)	—	—	—	—	—	—	—	—	—
MD54-05-58026	54-24376	35.00–40.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58032	54-24376	198.00–200.00	Qbo	—	1.54 (U)	29.9	—	—	0.513 (U)	—	—	—	—	—	—	—	—	919
MD54-05-58034	54-24377	45.00–50.00	Qbt 1v	—	—	—	—	—	0.515 (U)	—	—	—	—	—	—	—	—	—
MD54-05-58040	54-24377	198.00–200.00	Qbo	—	1.54 (U)	34.4	—	—	0.514 (U)	—	—	—	—	—	—	—	—	—
MD54-05-58042	54-24378	25.00–30.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58043	54-24378	148.50–150.00	Qct	6550	0.702	—	—	—	—	—	—	2.79	—	7.45	—	3950	—	799
MD54-05-58048	54-24378	180.00–182.00	Qbo	17500	2.24	58.5	—	—	—	18700 (J)	—	14.5	—	12	—	17000	—	6190
MD54-05-58050	54-24379	20.00–25.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58051	54-24379	117.00–119.00	Qct	7020 (J+)	1.03	50.9	—	3.39 (J)	0.5 (U)	—	—	3.65	—	4.33	—	5070	—	1340
MD54-05-58052	54-24379	148.00–150.00	Qbo	—	—	—	—	—	0.503 (U)	—	—	—	—	—	—	—	—	794
MD54-05-58056	54-24379	198.00–200.00	Qbog	—	0.723	—	—	—	—	—	—	4.85	—	—	—	3940	—	1770
MD54-05-58058	54-24380	20.00–25.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58059	54-24380	176.00–178.00	Qct	7040	0.823	32.1	—	3.52 (J)	—	—	—	3.03	—	8.24 (J+)	—	4370	33.3	1050 (J-)
MD54-05-58064	54-24380	195.00–196.00	Qct	5820	0.872	49.5	—	1.62 (J)	—	—	—	4.59	—	—	—	6150	—	1620 (J-)
MD54-05-58071	54-24381	15.00–20.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58072	54-24381	110.00–112.00	Qbt 1g	—	—	34.5	—	—	0.515 (U)	—	—	—	—	—	—	—	—	—
MD54-05-58073	54-24381	148.00–150.00	Qbo	—	—	—	—	—	0.513 (U)	—	—	—	—	—	—	—	—	—
MD54-05-58077	54-24381	198.00–200.00	Qbo	—	—	—	—	—	0.539 (U)	—	—	—	—	—	—	—	—	869 (J)
MD54-05-58079	54-24382	30.00–35.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58080	54-24382	103.00–105.00	Qct	10300	1.28 (J)	42.7	—	4.85 (J)	0.53 (U)	2150	—	6.11	—	—	—	8570	—	2400 (J+)
MD54-05-58085	54-24382	145.00–147.00	Qbo	6360	1.79	61.1	—	1.38 (J)	0.547 (U)	1940	—	5.06	—	5.49	—	7220	—	1830 (J+)
MD54-05-58087	54-24383	20.00–25.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58093	54-24383	145.00–147.50	Soil	—	—	—	—	4.23 (J)	—	315000	—	—	—	—	—	—	—	5820 (J+)

Table 6.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chloride	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium
Soil Background Value				**29,200**	**8.17**	**295**	**1.83**	**na**[a]	**0.4**	**6120**	**na**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**
Qbt 2,3,4 Background Value				**7340**	**2.79**	**46**	**1.21**	**na**	**1.63**	**2200**	**na**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**
Qbt 1v Background Value				**8170**	**1.81**	**26.5**	**1.7**	**na**	**0.4**	**3700**	**na**	**2.24**	**1.78**	**3.26**	**0.5**	**9900**	**18.4**	**780**
Qbt 1g, Qct, Qbo, Qbog[b] **Background Value**				**3560**	**0.56**	**25.7**	**1.44**	**na**	**0.4**	**1900**	**na**	**2.6**	**8.89**	**3.96**	**0.5**	**3700**	**13.5**	**739**
Tcb Background Value				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Industrial Soil Screening Levels				**100000**	**17.7**	**78300**	**2250**	**61600**	**1130**[c]	**na**	**na**	**5000**[d]	**20500**	**45400**	**22700**	**100000**	**750**	**na**
Residential Soil Screening Levels				**77800**	**3.9**	**5450**	**156**	**5500**	**74.1**	**na**	**na**	**2100**[d]	**1520**	**3130**	**1560**	**23500**	**400**	**na**
MD54-05-58095	54-24384	25.00–30.00	Qbt 1g	—	1.52 (U)	—	—	1.39 (J)	0.508 (U)	—	—	—	—	—	—	—	—	—
MD54-05-58101	54-24384	66.00–68.00	Soil	—	—	—	2.87	6.18	0.859	9730	—	—	12.2	21.2	—	22800	—	6470
MD54-05-58103	54-24385	30.00–35.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58104	54-24385	110.50–112.50	Qct	4650	0.985 (U)	52.5	—	1.71 (J)	—	—	—	3.03	—	—	—	—	—	848
MD54-05-58109	54-24385	175.50–177.00	Soil	—	—	—	—	2.93 (J)	—	193000 (J+)	—	—	—	—	—	—	—	—
MD54-05-58116	54-24386	35.00–40.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58117	54-24386	56.00–58.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58118	54-24386	58.00–59.00	Qbt 2	—	—	—	—	0.614 (J)	—	—	—	—	—	—	—	—	—	—
MD54-05-58119	54-24386	110.00–112.00	Qct	8100	1.59	78.5 (J)	—	3.69 (J)	—	2700 (J+)	—	4.26	—	4.96	—	5970	—	1910 (J+)
MD54-05-58122	54-24386	185.00–186.00	Soil	—	—	—	—	4.71 (J)	0.645	112000 (J+)	—	—	—	15.1	—	—	—	5870 (J+)
MD54-05-58124	54-24387	5.00–10.00	Qbt 1g	5520	2.52	105	1.59	2.16 (J)	—	3460	—	—	—	—	—	4890	—	—
MD54-05-58130	54-24387	78.00–81.00	Qbog	17700	3.94	120	—	5.52 (J)	1	44100	—	12	—	14.5	—	12300	—	4650
MD54-05-58132	54-24388	25.00–30.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58133	54-24388	63.00–64.50	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58134	54-24388	132.50–134.50	Qbt 1g	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58135	54-24388	155.00–157.00	Qct	11500	1.33	46.7	2.45	2.59 (J)	—	—	—	3.52	—	7.54	—	6120	45.6	1360 (J)
MD54-05-58138	54-24388	177.00–180.00	Qct	—	—	—	—	0.7 (J)	—	—	—	—	—	—	—	4130	—	788 (J)
MD54-05-58140	54-24389	20.00–25.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58141	54-24389	173.00–175.00	Qct	9920 (J-)	1.67	34.7	—	—	—	—	—	6.53	—	4.37	—	8170 (J+)	—	2290
MD54-05-58146	54-24389	198.00–200.00	Qbo	—	—	28.5	—	—	0.525 (U)	—	—	—	—	—	—	—	—	858
MD54-05-58148	54-24390	30.00–35.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58149	54-24390	56.00–57.00	Qbt 2	11800	2.97	61.9	8.77	4.29 (J)	—	2690	—	—	—	14.5	—	—	—	3270 (J-)
MD54-05-58150	54-24390	93.00–94.00	Qbt 1v	—	2.44	—	—	—	0.533 (U)	—	—	—	—	—	—	—	—	—
MD54-05-58151	54-24390	94.00–95.00	Qbt 1v	—	2.77	—	2.21	—	0.544 (U)	—	—	—	—	3.49	—	—	—	—
MD54-05-58154	54-24390	185.00–186.00	Soil	—	—	—	—	—	0.858	71600	—	—	—	—	—	—	—	—
MD54-05-58161	54-24391	25.00–30.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58167	54-24391	198.00–200.00	Qbo	—	—	—	—	—	0.52 (U)	—	—	—	—	—	—	—	—	—
MD54-05-58169	54-24392	25.00–30.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 6.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chloride	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium
Soil Background Value				**29,200**	**8.17**	**295**	**1.83**	**na[a]**	**0.4**	**6120**	**na**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**
Qbt 2,3,4 Background Value				**7340**	**2.79**	**46**	**1.21**	**na**	**1.63**	**2200**	**na**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**
Qbt 1v Background Value				**8170**	**1.81**	**26.5**	**1.7**	**na**	**0.4**	**3700**	**na**	**2.24**	**1.78**	**3.26**	**0.5**	**9900**	**18.4**	**780**
Qbt 1g, Qct, Qbo, Qbog[b] Background Value				**3560**	**0.56**	**25.7**	**1.44**	**na**	**0.4**	**1900**	**na**	**2.6**	**8.89**	**3.96**	**0.5**	**3700**	**13.5**	**739**
Tcb Background Value				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Industrial Soil Screening Levels				**100000**	**17.7**	**78300**	**2250**	**61600**	**1130[c]**	**na**	**na**	**5000[d]**	**20500**	**45400**	**22700**	**100000**	**750**	**na**
Residential Soil Screening Levels				**77800**	**3.9**	**5450**	**156**	**5500**	**74.1**	**na**	**na**	**2100[d]**	**1520**	**3130**	**1560**	**23500**	**400**	**na**
MD54-05-58175	54-24392	198.00–200.00	Qbo	—	1.62 (U)	—	—	—	0.538 (U)	—	—	2.71	—	—	—	—	—	885
MD54-05-58177	54-24393	35.00–40.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58178	54-24393	158.00–160.00	Qct	8730	1.33 (J)	66.7	—	3.65 (J)	—	2370	—	6.07	—	4.54	—	7780	—	2840
MD54-05-58179	54-24393	193.00–194.40	Qbo	—	1.69 (U)	32.1	—	—	0.565 (U)	—	—	—	—	—	—	—	—	834
MD54-05-58183	54-24393	204.00–206.00	Qbog	—	0.731 (J)	36	—	—	—	35200	—	—	—	—	—	—	—	—
MD54-05-58185	54-24394	40.00–45.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58186	54-24394	50.00–55.00	Qbt 2	—	—	—	2.45	1.72 (J)	—	—	—	—	—	8.78	—	—	—	—
MD54-05-58187	54-24394	100.00–102.00	Qbt 1v	—	1.92	—	—	—	0.514 (U)	—	—	—	—	—	—	—	—	—
MD54-05-58188	54-24394	102.00–105.00	Qbt 1v	—	2.14	30.9	—	—	0.521 (U)	—	—	—	—	—	—	—	—	—
MD54-05-58191	54-24394	198.00–200.00	Qbo	—	1.53 (U)	—	—	—	0.511 (U)	—	—	2.98	—	—	—	—	—	—
MD54-05-58193	54-24395	40.00–45.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58194	54-24395	153.00–155.00	Qbt 1g	—	1.73 (U)	—	—	—	0.575 (U)	—	—	—	—	—	—	—	—	—
MD54-05-58195	54-24395	188.00–190.00	Qbt 1g	—	1.85 (U)	—	—	1.44 (J)	0.618 (U)	—	—	—	—	—	—	—	—	—
MD54-05-58199	54-24395	198.00–200.00	Qbo	—	1.67 (U)	27.6	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58206	54-24396	10.00–15.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58207	54-24396	154.00–155.00	Qct	11500 (J-)	2.26	61.7	—	—	—	2430 (J+)	—	7.33	—	5.64	—	8700 (J+)	—	2850
MD54-05-58212	54-24396	198.00–200.00	Qbo	—	—	30.4	—	—	0.522 (U)	—	—	—	—	—	—	—	—	—
MD54-05-58214	54-24397	15.00–20.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-58215	54-24397	159.00–160.00	Qct	7250 (J+)	1.11 (J)	34.2	—	2.67 (J)	0.547 (U)	—	—	4.45	—	—	—	6680 (J+)	—	1190 (J+)
MD54-05-58220	54-24397	198.00–200.00	Qbo	—	1.58 (U)	—	—	—	0.527 (U)	—	—	—	—	—	—	3860 (J+)	—	743 (J+)
MD54-05-59184	54-24523	199.80–200.00	Qbog	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-59186	54-24523	221.80–222.00	Tcb	—	—	—	—	—	—	—	0.558 (J)	—	—	—	—	—	—	—
MD54-05-59190	54-24523	262.60–265.80	Tcb	—	—	—	—	—	—	—	0.909 (J)	—	—	—	—	—	—	—
MD54-05-59202	54-24523	386.10–386.60	Tcb	—	—	—	—	—	—	—	0.433 (J)	—	—	—	—	—	—	—
MD54-05-59204	54-24523	404.30–407.30	Tcb	—	—	—	—	—	—	—	0.515 (J)	—	—	—	—	—	—	—
MD54-05-59212	54-24523	696.00–696.50	Tcb	—	—	—	—	—	—	—	1.44 (J+)	—	—	—	—	—	—	—

Table 6.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Manganese	Mercury	Molybdenum	Nickel	Nitrate	Perchlorate	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Soil Background Value				**671**	**0.1**	**na**	**15.4**	**na**	**na**	**3640**	**1.52**	**1**	**915**	**0.73**	**39.6**	**48.8**
Qbt 2,3,4 Background Value				**482**	**0.1**	**na**	**6.58**	**na**	**na**	**3500**	**0.3**	**1**	**2770**	**1.1**	**17**	**63.5**
Qbt 1v Background Value				**408**	**0.1**	**na**	**2**	**na**	**na**	**6670**	**0.3**	**1**	**6330**	**1.24**	**4.48**	**84.6**
Qbt 1g, Qct, Qbo, Qbog[b] Background Value				**189**	**0.1**	**na**	**2**	**na**	**na**	**2390**	**0.3**	**1**	**4350**	**1.22**	**4.59**	**40**
Tcb Background Value				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Industrial Soil Screening Levels				**21800**	**340[d]**	**5680**	**22500**	**100000**	**110[d]**	**na**	**5680**	**5680**	**na**	**74.9**	**7950**	**100000**
Residential Soil Screening Levels				**1550**	**23[d]**	**391**	**1560**	**100000**	**7.8[d]**	**na**	**391**	**391**	**na**	**5.16**	**548**	**23500**
MD54-05-57879	54-24361	30.00–35.00	Qbt 2	—	—	0.576	—	1.13 (J-)	—	—	—	—	—	—	—	—
MD54-05-57885	54-24361	168.00–170.00	Qbo	—	—	0.0812 (J)	—	—	—	—	0.344 (U)	—	—	—	—	—
MD54-05-57887	54-24362	35.00–40.00	Qbt 2	—	—	0.453	—	0.359 (J)	—	—	1.56 (U)	—	—	—	—	—
MD54-05-57893	54-24362	187.00–189.00	Soil	—	—	0.236	18.6	—	—	—	2.85	—	—	—	—	—
MD54-05-57895	54-24363	31.80–35.40	Qbt 2	—	—	0.327	—	5.18	—	—	0.509 (U)	—	—	—	—	—
MD54-05-57896	54-24363	42.80–45.20	Qbt 2	—	—	1.32	11	1.64	—	4750	2.12	—	—	—	30.1	72.1
MD54-05-57897	54-24363	113.10–114.50	Qbt 1g	—	—	0.277	—	—	—	—	1.64 (U)	—	—	—	—	—
MD54-05-57901	54-24363	175.30–176.80	Qbog	—	—	0.22	4.68	—	—	—	—	—	—	—	8.63 (J)	—
MD54-05-57903	54-24364	65.00–70.00	Qbt 1v	—	—	0.501	—	—	—	—	1.07 (J)	—	—	—	—	—
MD54-05-57909	54-24364	195.00–200.00	Qbo	—	—	0.0617 (J)	—	0.949 (J)	—	—	0.528 (U)	—	—	—	—	—
MD54-05-57936	54-24366	99.00–101.80	Qbt 1g	—	—	0.25	—	—	—	—	1.53 (U)	—	—	—	—	—
MD54-05-57942	54-24366	175.40–176.80	Qbo	—	—	0.106	—	—	—	—	1.58 (U)	—	—	—	—	—
MD54-05-57944	54-24367	30.00–35.00	Qbt 2	—	—	0.407	—	—	0.151	—	1.54 (U)	—	—	—	—	—
MD54-05-57950	54-24367	198.00–200.00	Qbo	—	—	0.156	—	—	—	—	1.53 (U)	—	—	—	—	—
MD54-05-57952	54-24368	67.00–70.00	Qbt 1v	—	—	—	—	—	—	—	1.53 (U)	—	—	—	—	—
MD54-05-57958	54-24368	200.10–201.50	Qbo	—	—	0.0644 (J)	—	—	—	—	1.58 (U)	—	—	—	—	—
MD54-05-57960	54-24369	65.00–70.00	Qbt 2	—	—	0.494	—	—	—	—	1.6 (U)	—	—	—	—	—
MD54-05-57961	54-24369	183.00–185.00	Qct	319	—	0.768	—	0.413 (J)	—	—	0.957 (J)	—	—	—	—	166
MD54-05-57966	54-24369	248.00–250.00	Qbog	383	—	0.219	—	—	—	—	—	—	—	—	—	—
MD54-05-57968	54-24370	37.00–40.00	Qbt 2	—	—	0.566	—	—	—	—	1.56 (U)	—	—	—	—	—
MD54-05-57974	54-24370	223.00–225.00	Qbog	—	—	0.268	—	—	—	—	—	—	—	—	—	—
MD54-05-57981	54-24371	40.00–45.00	Qbt 2	—	—	0.734	—	—	—	—	1.61 (U)	—	—	—	—	—
MD54-05-57987	54-24371	198.00–200.00	Qbo	—	—	0.121	—	—	—	—	1.55 (U)	—	—	—	—	—
MD54-05-57989	54-24372	55.00–60.00	Qbt 2	—	—	0.402	—	—	—	—	1.51 (U)	—	—	—	—	—
MD54-05-57995	54-24372	248.00–250.00	Qbo	—	—	0.0863 (J)	—	—	—	—	1.57 (U)	—	—	—	—	—
MD54-05-57997	54-24373	65.00–70.00	Qbt 1v	—	—	0.558	—	—	—	—	1.51 (U)	—	—	5.04 (U)	—	—
MD54-05-58003	54-24373	248.00–250.00	Qbo	—	—	0.0921 (J)	—	—	—	—	1.57 (U)	—	—	—	—	—
MD54-05-58005	54-24374	12.00–15.00	Qbt 2	—	—	0.556	—	0.615 (J)	—	—	1.54 (U)	—	—	—	—	—
MD54-05-58011	54-24374	198.00–200.00	Qbo	—	—	0.0864 (J)	—	—	—	—	0.991 (U)	—	—	—	—	—

Table 6.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Manganese	Mercury	Molybdenum	Nickel	Nitrate	Perchlorate	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Soil Background Value				**671**	**0.1**	**na**	**15.4**	**na**	**na**	**3640**	**1.52**	**1**	**915**	**0.73**	**39.6**	**48.8**
Qbt 2,3,4 Background Value				**482**	**0.1**	**na**	**6.58**	**na**	**na**	**3500**	**0.3**	**1**	**2770**	**1.1**	**17**	**63.5**
Qbt 1v Background Value				**408**	**0.1**	**na**	**2**	**na**	**na**	**6670**	**0.3**	**1**	**6330**	**1.24**	**4.48**	**84.6**
Qbt 1g, Qct, Qbo, Qbog[b] Background Value				**189**	**0.1**	**na**	**2**	**na**	**na**	**2390**	**0.3**	**1**	**4350**	**1.22**	**4.59**	**40**
Tcb Background Value				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Industrial Soil Screening Levels				**21800**	**340[d]**	**5680**	**22500**	**100000**	**110[d]**	**na**	**5680**	**5680**	**na**	**74.9**	**7950**	**100000**
Residential Soil Screening Levels				**1550**	**23[d]**	**391**	**1560**	**100000**	**7.8[d]**	**na**	**391**	**391**	**na**	**5.16**	**548**	**23500**
MD54-05-58013	54-24375	30.00–35.00	Qbt 2	—	—	0.346	—	2.05 (J-)	—	—	0.498 (U)	—	—	—	—	—
MD54-05-58014	54-24375	62.00–64.00	Qbt 2	—	—	0.423	—	—	—	—	2.49 (U)	—	—	—	—	—
MD54-05-58015	54-24375	64.00–65.00	Qbt 2	—	—	0.384	—	—	—	—	2.49 (U)	—	—	—	—	—
MD54-05-58019	54-24375	195.00–200.00	Qbo	—	—	0.268	—	1.38 (J-)	—	—	0.534 (U)	—	—	—	—	—
MD54-05-58026	54-24376	35.00–40.00	Qbt 2	—	—	0.468	—	—	—	—	1.55 (U)	—	—	—	—	—
MD54-05-58032	54-24376	198.00–200.00	Qbo	—	—	0.118	—	—	—	—	1.54 (U)	—	—	—	—	—
MD54-05-58034	54-24377	45.00–50.00	Qbt 1v	—	—	0.736	—	—	—	—	1.54 (U)	—	—	—	—	—
MD54-05-58040	54-24377	198.00–200.00	Qbo	—	—	0.112	—	—	—	—	1.54 (U)	—	—	—	—	—
MD54-05-58042	54-24378	25.00–30.00	Qbt 2	—	—	—	—	—	—	—	0.406 (J)	—	—	—	—	—
MD54-05-58043	54-24378	148.50–150.00	Qct	—	—	—	—	—	—	—	—	—	—	—	5.31	—
MD54-05-58048	54-24378	180.00–182.00	Qbo	—	—	—	8.38	—	—	—	1.16	—	—	—	24.6	—
MD54-05-58050	54-24379	20.00–25.00	Qbt 2	—	—	0.546	—	3.69 (J-)	—	—	0.5 (U)	—	—	—	—	—
MD54-05-58051	54-24379	117.00–119.00	Qct	—	—	0.228	3.15	—	—	—	0.5 (U)	—	—	—	7.71	—
MD54-05-58052	54-24379	148.00–150.00	Qbo	—	—	0.0652 (J)	—	—	—	—	0.503 (U)	—	—	—	—	—
MD54-05-58056	54-24379	198.00–200.00	Qbog	—	—	0.288	5.74	—	—	—	0.596	—	—	—	—	—
MD54-05-58058	54-24380	20.00–25.00	Qbt 2	—	—	0.861	—	—	—	—	0.517 (U)	—	—	—	—	—
MD54-05-58059	54-24380	176.00–178.00	Qct	440 (J)	—	0.501	2.53	—	—	—	0.533 (U)	—	—	—	5.06	51.1
MD54-05-58064	54-24380	195.00–196.00	Qct	—	—	0.297	4.5	—	—	—	0.672 (U)	—	—	—	7.99	—
MD54-05-58071	54-24381	15.00–20.00	Qbt 2	—	—	0.481	—	4.74 (J-)	0.123	—	—	—	—	—	—	—
MD54-05-58072	54-24381	110.00–112.00	Qbt 1g	—	—	0.646	—	—	0.126	—	0.515 (U)	—	—	—	—	—
MD54-05-58073	54-24381	148.00–150.00	Qbo	—	—	0.122	—	—	0.123	—	0.513 (U)	—	—	—	—	—
MD54-05-58077	54-24381	198.00–200.00	Qbo	—	—	0.147	—	—	0.13	—	—	—	—	—	—	—
MD54-05-58079	54-24382	30.00–35.00	Qbt 2	—	—	0.307	—	—	—	—	1.52 (U)	—	—	—	—	—
MD54-05-58080	54-24382	103.00–105.00	Qct	212	—	0.223	4.08 (J+)	—	—	—	1.59 (U)	—	—	—	10.4	—
MD54-05-58085	54-24382	145.00–147.00	Qbo	—	—	0.197	3.54 (J+)	—	—	—	1.64 (U)	—	—	—	12.5	—
MD54-05-58087	54-24383	20.00–25.00	Qbt 2	—	—	0.348	—	—	—	—	1.5 (U)	—	—	—	—	—
MD54-05-58093	54-24383	145.00–147.50	Soil	—	—	0.275	—	—	—	—	1.77 (U)	—	—	—	—	—
MD54-05-58095	54-24384	25.00–30.00	Qbt 1g	—	—	0.203	—	—	—	—	15.2 (U)	—	—	—	—	—
MD54-05-58101	54-24384	66.00–68.00	Soil	—	—	0.266	25.8	—	—	—	35.3 (U)	—	—	—	—	61.5

Table 6.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Manganese	Mercury	Molybdenum	Nickel	Nitrate	Perchlorate	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Soil Background Value				**671**	**0.1**	**na**	**15.4**	**na**	**na**	**3640**	**1.52**	**1**	**915**	**0.73**	**39.6**	**48.8**
Qbt 2,3,4 Background Value				**482**	**0.1**	**na**	**6.58**	**na**	**na**	**3500**	**0.3**	**1**	**2770**	**1.1**	**17**	**63.5**
Qbt 1v Background Value				**408**	**0.1**	**na**	**2**	**na**	**na**	**6670**	**0.3**	**1**	**6330**	**1.24**	**4.48**	**84.6**
Qbt 1g, Qct, Qbo, Qbog[b] Background Value				**189**	**0.1**	**na**	**2**	**na**	**na**	**2390**	**0.3**	**1**	**4350**	**1.22**	**4.59**	**40**
Tcb Background Value				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Industrial Soil Screening Levels				**21800**	**340[d]**	**5680**	**22500**	**100000**	**110[d]**	**na**	**5680**	**5680**	**na**	**74.9**	**7950**	**100000**
Residential Soil Screening Levels				**1550**	**23[d]**	**391**	**1560**	**100000**	**7.8[d]**	**na**	**391**	**391**	**na**	**5.16**	**548**	**23500**
MD54-05-58103	54-24385	30.00–35.00	Qbt 2	—	—	0.754	—	1.23 (J-)	—	—	0.474 (J)	—	—	—	—	—
MD54-05-58104	54-24385	110.50–112.50	Qct	—	—	0.298	—	—	—	—	—	—	—	—	4.65	—
MD54-05-58109	54-24385	175.50–177.00	Soil	—	—	0.17	—	0.958 (J-)	—	—	—	—	—	—	—	—
MD54-05-58116	54-24386	35.00–40.00	Qbt 2	—	—	0.688	—	1.25 (J-)	—	—	0.519 (U)	—	—	—	—	—
MD54-05-58117	54-24386	56.00–58.00	Qbt 2	—	—	0.549	—	1.69 (J-)	0.0994 (J)	—	0.524 (U)	—	—	—	—	—
MD54-05-58118	54-24386	58.00–59.00	Qbt 2	—	—	0.658	—	1.19 (J-)	0.125 (J)	—	0.534 (U)	—	—	—	—	—
MD54-05-58119	54-24386	110.00–112.00	Qct	246 (J+)	—	0.388	3.82	—	—	—	0.591 (U)	—	—	—	9.22	—
MD54-05-58122	54-24386	185.00–186.00	Soil	—	—	0.285	25.2	0.946 (J-)	—	—	—	—	—	—	—	—
MD54-05-58124	54-24387	5.00–10.00	Qbt 1g	214	—	0.707	2.82	—	—	—	16 (U)	—	—	—	—	—
MD54-05-58130	54-24387	78.00–81.00	Qbog	227	—	0.318	14.4	—	—	2490	—	—	—	—	20.7	—
MD54-05-58132	54-24388	25.00–30.00	Qbt 2	—	—	1.04	—	—	—	—	0.492 (J)	—	—	—	—	—
MD54-05-58133	54-24388	63.00–64.50	Qbt 2	—	—	0.375	—	1.24 (J-)	—	—	0.518	—	—	—	—	—
MD54-05-58134	54-24388	132.50–134.50	Qbt 1g	—	—	0.179	—	—	—	—	—	—	—	—	—	—
MD54-05-58135	54-24388	155.00–157.00	Qct	606 (J+)	—	0.485	3.72	0.955 (J-)	—	—	0.44 (J)	—	—	—	6.18	154
MD54-05-58138	54-24388	177.00–180.00	Qct	—	—	0.185	5.12	—	—	—	0.406 (J)	—	—	—	—	—
MD54-05-58140	54-24389	20.00–25.00	Qbt 2	—	—	0.343	—	—	—	—	2.58 (U)	—	—	—	—	—
MD54-05-58141	54-24389	173.00–175.00	Qct	199 (J+)	—	0.234	4.52	—	—	—	0.751 (U)	—	—	—	12.9	—
MD54-05-58146	54-24389	198.00–200.00	Qbo	—	—	0.109	—	—	—	—	0.525 (U)	—	—	—	—	—
MD54-05-58148	54-24390	30.00–35.00	Qbt 2	—	—	0.766	—	0.984	—	—	0.512 (U)	—	—	—	—	—
MD54-05-58149	54-24390	56.00–57.00	Qbt 2	—	—	0.698	—	1.76	—	—	0.814 (U)	—	—	—	—	73.1
MD54-05-58150	54-24390	93.00–94.00	Qbt 1v	—	—	0.909	—	—	—	—	0.533 (U)	—	—	—	—	—
MD54-05-58151	54-24390	94.00–95.00	Qbt 1v	—	—	0.665	—	—	—	—	0.544 (U)	—	—	—	—	—
MD54-05-58154	54-24390	185.00–186.00	Soil	—	—	0.421	—	—	—	—	—	—	—	—	—	—
MD54-05-58161	54-24391	25.00–30.00	Qbt 2	—	—	0.33	—	1.04	—	—	0.513 (U)	—	—	—	—	—
MD54-05-58167	54-24391	198.00–200.00	Qbo	—	—	0.0957 (J)	—	0.904	—	—	0.52 (U)	—	—	—	—	—
MD54-05-58169	54-24392	25.00–30.00	Qbt 2	—	—	0.546	—	—	—	—	1.55 (U)	—	—	—	—	—
MD54-05-58175	54-24392	198.00–200.00	Qbo	—	—	0.375	2.22	—	—	—	1.62 (U)	—	—	—	—	—
MD54-05-58177	54-24393	35.00–40.00	Qbt 2	—	—	0.421	—	—	—	—	1.52 (U)	—	—	—	—	—
MD54-05-58178	54-24393	158.00–160.00	Qct	—	—	0.235	4.94	—	—	—	1.6 (U)	—	—	—	12.7	—

Table 6.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Manganese	Mercury	Molybdenum	Nickel	Nitrate	Perchlorate	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Soil Background Value				**671**	**0.1**	**na**	**15.4**	**na**	**na**	**3640**	**1.52**	**1**	**915**	**0.73**	**39.6**	**48.8**
Qbt 2,3,4 Background Value				**482**	**0.1**	**na**	**6.58**	**na**	**na**	**3500**	**0.3**	**1**	**2770**	**1.1**	**17**	**63.5**
Qbt 1v Background Value				**408**	**0.1**	**na**	**2**	**na**	**na**	**6670**	**0.3**	**1**	**6330**	**1.24**	**4.48**	**84.6**
Qbt 1g, Qct, Qbo, Qbog[b] Background Value				**189**	**0.1**	**na**	**2**	**na**	**na**	**2390**	**0.3**	**1**	**4350**	**1.22**	**4.59**	**40**
Tcb Background Value				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Industrial Soil Screening Levels				**21800**	**340[d]**	**5680**	**22500**	**100000**	**110[d]**	**na**	**5680**	**5680**	**na**	**74.9**	**7950**	**100000**
Residential Soil Screening Levels				**1550**	**23[d]**	**391**	**1560**	**100000**	**7.8[d]**	**na**	**391**	**391**	**na**	**5.16**	**548**	**23500**
MD54-05-58179	54-24393	193.00–194.40	Qbo	—	—	0.108 (J)	—	—	—	—	1.69 (U)	—	—	—	—	—
MD54-05-58183	54-24393	204.00–206.00	Qbog	—	—	0.231	3.37	—	—	—	—	—	—	—	—	—
MD54-05-58185	54-24394	40.00–45.00	Qbt 2	—	—	0.695	—	—	—	—	1.65 (U)	—	—	—	—	—
MD54-05-58186	54-24394	50.00–55.00	Qbt 2	—	—	1.11	—	—	—	—	1.65 (U)	—	—	—	—	—
MD54-05-58187	54-24394	100.00–102.00	Qbt 1v	—	—	1.44	—	—	—	—	0.75 (J)	—	—	—	—	—
MD54-05-58188	54-24394	102.00–105.00	Qbt 1v	—	—	2.5	—	—	—	—	0.756 (J)	—	—	—	—	—
MD54-05-58191	54-24394	198.00–200.00	Qbo	—	—	0.17	—	—	—	—	1.53 (U)	—	—	—	—	—
MD54-05-58193	54-24395	40.00–45.00	Qbt 2	—	—	0.568	—	—	—	—	1.8 (U)	—	—	—	—	—
MD54-05-58194	54-24395	153.00–155.00	Qbt 1g	—	—	0.514	—	—	—	—	1.73 (U)	—	—	—	—	—
MD54-05-58195	54-24395	188.00–190.00	Qbt 1g	—	—	0.278	—	—	—	—	1.85 (U)	—	—	—	—	—
MD54-05-58199	54-24395	198.00–200.00	Qbo	—	—	0.205	—	—	—	—	1.67 (U)	—	—	—	—	—
MD54-05-58206	54-24396	10.00–15.00	Qbt 2	—	—	0.552	—	1.09 (J-)	—	—	—	—	—	—	—	—
MD54-05-58207	54-24396	154.00–155.00	Qct	220 (J+)	—	0.317	5.89	—	—	—	0.622 (U)	—	—	—	15.2	41.6
MD54-05-58212	54-24396	198.00–200.00	Qbo	—	—	0.134	—	—	—	—	0.522 (U)	—	—	—	—	—
MD54-05-58214	54-24397	15.00–20.00	Qbt 2	—	—	0.449	—	0.641 (J)	—	—	1.02 (U)	—	—	—	—	—
MD54-05-58215	54-24397	159.00–160.00	Qct	201	—	0.275	2.53	0.689 (J)	—	—	1.41 (U)	—	—	—	8.91	—
MD54-05-58220	54-24397	198.00–200.00	Qbo	—	—	0.0916 (J)	—	—	—	—	1.14 (U)	—	—	—	—	—
MD54-05-59184	54-24523	199.80–200.00	Qbog	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-59186	54-24523	221.80–222.00	Tcb	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-59190	54-24523	262.60–265.80	Tcb	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-59202	54-24523	386.10–386.60	Tcb	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-59204	54-24523	404.30–407.30	Tcb	—	—	—	—	—	—	—	—	—	—	—	—	—
MD54-05-59212	54-24523	696.00–696.50	Tcb	—	—	—	—	—	—	—	—	—	—	—	—	—

Note: All values in mg/kg. See Appendix A for data qualifier definitions.

[a] na = Not available.

[b] Qbo background values used for Qbog.

[c] Industrial SSL for cadmium calculated incorrectly in NMED 2004 85615, SSL recalculated using NMED parameters.

[d] SSLs obtained from EPA 2004, 87478.

[e] — = Analysis not requested, the reported value was less than the BV, or result not detected.

Table 6.3-2
Organic Chemicals Detected in Subsurface Samples from MDA G

Sample ID	Location ID	Depth (ft)	Media	Heptachlorodibenzodioxin[1,2,3,4,6,7,8-]	Heptachlorodibenzodioxins (Total)	Heptachlorodibenzofuran[1,2,3,4,6,7,8-]	Heptachlorodibenzofurans (Total)	Hexachlorodibenzodioxins (Total)	Hexachlorodibenzofuran[2,3,4,6,7,8-]	Hexachlorodibenzofurans (Total)	Octachlorodibenzodioxin[1,2,3,4,6,7,8,9-]	Pentachlorodibenzofurans (Totals)
Industrial Soil Screening Levels				**Soil screening levels are not available for the individual congeners, just for 2,3,7,8-TCDD.**								
Residential Soil Screening Levels				**Soil screening levels are not available for the individual congeners, just for 2,3,7,8-TCDD.**								
MD54-05-57895	54-24363	31.80–35.40	Qbt 2	0.0000001 (J)	0.0000001 (J)	—*	—	—	—	—	5.2E-07 (J)	—
MD54-05-57981	54-24371	40.00–45.00	Qbt 2	—	1.03E-06	—	—	—	—	—	8.97E-06	—
MD54-05-58005	54-24374	12.00–15.00	Qbt 2	1.6E-07 (J)	3.6E-07	—	—	—	—	—	—	—
MD54-05-58071	54-24381	15.00–20.00	Qbt 2	0.0000013 (J)	3.44E-06	9.9E-07 (J)	9.9E-07	3.9E-07	1.6E-07 (J)	1.01E-06	7.69E-06	1.3E-07
MD54-05-58103	54-24385	30.00–35.00	Qbt 2	2.4E-07 (J)	2.4E-07	—	—	—	—	—	7.6E-07 (J)	—
MD54-05-58132	54-24388	25.00–30.00	Qbt 2	3.2E-07 (J)	6.5E-07	—	—	—	—	—	1.41E-06 (J)	—
MD54-05-58148	54-24390	30.00–35.00	Qbt 2	—	—	—	—	—	—	—	3.8E-07 (J)	—
MD54-05-58161	54-24391	25.00–30.00	Qbt 2	—	—	—	—	—	—	—	4.7E-07 (J)	—

Note: All values in mg/kg. See Appendix A for data qualifier definitions.

*— = Not detected.

Table 6.3-3
Radionuclides Detected above BVs in Subsurface Samples from MDA G

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Plutonium-238	Plutonium-239	Strontium-90	Thorium-228	Thorium-230	Thorium-232	Uranium-234	Uranium-235	Uranium-238
Soil Background Value				**0.013**	**0.023**	**0.054**	**1.31**	**2.28**	**2.29**	**2.33**	**2.59**	**0.2**	**2.29**
Qbt 2,3,4 Background Value				**na**[a]	**na**	**na**	**na**	**2.52**	**1.98**	**2.52**	**1.98**	**0.09**	**1.93**
Qbt 1v Background Value				**na**	**na**	**na**	**na**	**3.75**	**3.12**	**3.75**	**3.12**	**0.14**	**3.05**
Qbt 1g, Qct, Qbo, Qbog[b] **Background Value**				**na**	**na**	**na**	**na**	**4.90**	**4.00**	**4.90**	**4.00**	**0.18**	**3.90**
Industrial Screening Action Level				**180**	**240**	**210**	**1900**	**9.0**	**5**[c]	**5**[c]	**1500**	**87**	**430**
Residential Screening Action Level				**30**	**37**	**33**	**5.7**	**2.3**	**5**[c]	**5**[c]	**170**	**17**	**86**
MD54-05-57897	54-24363	113.10–114.50	Qbt 1g	—[d]	—	0.315	—	—	—	—	—	—	—
MD54-05-57901	54-24363	175.30–176.80	Qbog	—	—	0.176	—	—	6.75	—	—	—	—
MD54-05-57950	54-24367	198.00–200.00	Qbo	0.153	—	—	—	—	—	—	—	—	—
MD54-05-57958	54-24368	200.10–201.50	Qbo	—	—	—	3.81	—	—	—	—	—	—
MD54-05-57960	54-24369	65.00–70.00	Qbt 2	—	—	—	—	—	—	—	5.575 (J-)	—	4.959 (J-)
MD54-05-57966	54-24369	248.00–250.00	Qbog	—	—	—	—	—	6.121 (J+)	—	7.835	—	7.803
MD54-05-57974	54-24370	223.00–225.00	Qbog	—	—	—	—	—		—		—	—
MD54-05-57981	54-24371	40.00–45.00	Qbt 2	—	—	—	—	—	—	—	2.337	—	2.552
MD54-05-57987	54-24371	198.00–200.00	Qbo	—	—	—	—	—	—	—	—	—	4.152
MD54-05-57989	54-24372	55.00–60.00	Qbt 2	—	—	—	0.64	—	—	—	—	—	—
MD54-05-58005	54-24374	12.00–15.00	Qbt 2	—	—	0.072	—	—	—	—	—	—	—
MD54-05-58011	54-24374	198.00–200.00	Qbo	—	—	0.113	—	—	—	—	—	—	—
MD54-05-58013	54-24375	30.00–35.00	Qbt 2	—	—	—	—	—	—	—	2.576	0.139	2.744
MD54-05-58015	54-24375	64.00–65.00	Qbt 2	0.278	—	—	—	—	—	—	—	—	—
MD54-05-58032	54-24376	198.00–200.00	Qbo	—	0.053	0.088	—	—	—	—	—	—	—
MD54-05-58034	54-24377	45.00–50.00	Qbt 1v	—	—	—	—	—	3.263 (J-)	—	—	—	—
MD54-05-58042	54-24378	25.00–30.00	Qbt 2	0.111	—	—	—	—	—	—	—	—	—
MD54-05-58043	54-24378	148.50–150.00	Qct	—	—	—	—	—	—	—	—	0.745	—
MD54-05-58048	54-24378	180.00–182.00	Qbo	0.078	—	—	—	—	—	—	—	0.621	—
MD54-05-58056	54-24379	198.00–200.00	Qbog	—	—	—	—	—	5.68	—	5.03	0.241	5.5

Table 6.3-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Plutonium-238	Plutonium-239	Strontium-90	Thorium-228	Thorium-230	Thorium-232	Uranium-234	Uranium-235	Uranium-238
Soil Background Value				**0.013**	**0.023**	**0.054**	**1.31**	**2.28**	**2.29**	**2.33**	**2.59**	**0.2**	**2.29**
Qbt 2,3,4 Background Value				**na**[a]	**na**	**na**	**na**	**2.52**	**1.98**	**2.52**	**1.98**	**0.09**	**1.93**
Qbt 1v Background Value				**na**	**na**	**na**	**na**	**3.75**	**3.12**	**3.75**	**3.12**	**0.14**	**3.05**
Qbt 1g, Qct, Qbo, Qbog[b] **Background Value**				**na**	**na**	**na**	**na**	**4.90**	**4.00**	**4.90**	**4.00**	**0.18**	**3.90**
Industrial Screening Action Level				**180**	**240**	**210**	**1900**	**9.0**	**5**[c]	**5**[c]	**1500**	**87**	**430**
Residential Screening Action Level				**30**	**37**	**33**	**5.7**	**2.3**	**5**[c]	**5**[c]	**170**	**17**	**86**
MD54-05-58072	54-24381	110.00–112.00	Qbt 1g	—	—	—	—	—	4.11	—	4.33	0.287	4.35
MD54-05-58073	54-24381	148.00–150.00	Qbo	—	—	—	—	—	—	—	—	0.192	—
MD54-05-58079	54-24382	30.00–35.00	Qbt 2	—	—	—	—	—	—	—	—	0.127	—
MD54-05-58085	54-24382	145.00–147.00	Qbo	—	—	—	—	—	—	—	—	0.206	—
MD54-05-58087	54-24383	20.00–25.00	Qbt 2	—	—	—	—	—	—	—	—	0.134	—
MD54-05-58095	54-24384	25.00–30.00	Qbt 1g	—	—	—	—	—	4.12	—	—	0.28	—
MD54-05-58109	54-24385	175.50–177.00	Soil	0.278	0.031	—	—	—	—	—	—	—	—
MD54-05-58116	54-24386	35.00–40.00	Qbt 2	—	—	0.166	—	—	—	—	—	—	—
MD54-05-58117	54-24386	56.00–58.00	Qbt 2	—	—	0.183	—	—	—	—	—	—	—
MD54-05-58118	54-24386	58.00–59.00	Qbt 2	—	—	0.083	—	—	—	—	—	—	—
MD54-05-58119	54-24386	110.00–112.00	Qct	—	—	0.127	—	—	—	—	—	—	—
MD54-05-58122	54-24386	185.00–186.00	Soil	—	—	0.102	—	—	—	—	—	—	—
MD54-05-58124	54-24387	5.00–10.00	Qbt 1g	—	—	—	—	—	—	—	—	0.287	—
MD54-05-58130	54-24387	78.00–81.00	Qbog	—	—	—	—	—	—	—		0.221	—
MD54-05-58133	54-24388	63.00–64.50	Qbt 2	—	—	—	—	2.65	2.29	—	—	0.134	2.04
MD54-05-58134	54-24388	132.50–134.50	Qbt 1g	—	—	—	—	—	—	—	—	0.186	3.95
MD54-05-58141	54-24389	173.00–175.00	Qct	0.183	—	—	—	—	—	—	—	—	—
MD54-05-58148	54-24390	30.00–35.00	Qbt 2	—	—	—	—	—	—	2.58	—	0.102	—
MD54-05-58149	54-24390	56.00–57.00	Qbt 2	—	—	—	—	2.84	—	3.1	—	0.26	—
MD54-05-58150	54-24390	93.00–94.00	Qbt 1v	—	—	—	—	3.95	3.42	—	—	0.152	3.23
MD54-05-58151	54-24390	94.00–95.00	Qbt 1v	—	—	—	—	4.02	3.36	3.89	—	0.222	—

Table 6.3-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Plutonium-238	Plutonium-239	Strontium-90	Thorium-228	Thorium-230	Thorium-232	Uranium-234	Uranium-235	Uranium-238
Soil Background Value				**0.013**	**0.023**	**0.054**	**1.31**	**2.28**	**2.29**	**2.33**	**2.59**	**0.2**	**2.29**
Qbt 2,3,4 Background Value				**na[a]**	**na**	**na**	**na**	**2.52**	**1.98**	**2.52**	**1.98**	**0.09**	**1.93**
Qbt 1v Background Value				**na**	**na**	**na**	**na**	**3.75**	**3.12**	**3.75**	**3.12**	**0.14**	**3.05**
Qbt 1g, Qct, Qbo, Qbog[b] Background Value				**na**	**na**	**na**	**na**	**4.90**	**4.00**	**4.90**	**4.00**	**0.18**	**3.90**
Industrial Screening Action Level				**180**	**240**	**210**	**1900**	**9.0**	**5[c]**	**5[c]**	**1500**	**87**	**430**
Residential Screening Action Level				**30**	**37**	**33**	**5.7**	**2.3**	**5[c]**	**5[c]**	**170**	**17**	**86**
MD54-05-58161	54-24391	25.00–30.00	Qbt 2	—	—	—	2.778 (J-)	—	—	—	—	—	—
MD54-05-58169	54-24392	25.00–30.00	Qbt 2	0.305	—	—	—	—	2.545	—	—	—	—
MD54-05-58175	54-24392	198.00–200.00	Qbo	—	—	0.054 (J+)	—	—	—	—	—	—	—
MD54-05-58177	54-24393	35.00–40.00	Qbt 2	—	—	—	—	—	—	—	2.021	—	2.167
MD54-05-58178	54-24393	158.00–160.00	Qct	—	—	—	5.9	—	—	—	—	—	—
MD54-05-58179	54-24393	193.00–194.40	Qbo	0.151	—	—	—	—	—	—	—	—	—
MD54-05-58183	54-24393	204.00–206.00	Qbog	—	—	—	—	—	—	—		1.644	—
MD54-05-58185	54-24394	40.00–45.00	Qbt 2	0.274	—	—	—	—	—	—	—	—	—
MD54-05-58186	54-24394	50.00–55.00	Qbt 2	0.092 (J+)	—	—	—	—	—	—	—	—	—
MD54-05-58193	54-24395	40.00–45.00	Qbt 2	0.074 (J+)	—	—	—	—	—	—	—	—	1.948
MD54-05-58206	54-24396	10.00–15.00	Qbt 2	—	—	—	2.84	—	—	—	—	—	—
MD54-05-58212	54-24396	198.00–200.00	Qbo	0.265	—	—	—	—	—	—	—	—	—
MD54-05-58214	54-24397	15.00–20.00	Qbt 2	—	—	0.22	—	—	2.326	—	—	—	—
MD54-05-58215	54-24397	159.00–160.00	Qct	—	—	0.21	—	—	—	—	—	—	—
MD54-05-58220	54-24397	198.00–200.00	Qbo	—	—	0.218	—	—	—	—	—	—	—

Note: All values in pCi/g. See Appendix A for data qualifier definitions.

[a] na = Not available.

[b] Qbo background values used for Qbog.

[c] The Screening Action Level is the generic soil guideline for release of property published in Chapter 4 ("Residual Radioactive Material") DOE Order 5400.5. For the concentration averaged over the first 15 cm of soil below the surface, 5 pCi/g applies; for the subsequent 15 cm thick layers, the generic soil guideline is 15 pCi/g.

[d] — = Analysis not requested, the reported value was less than the BV, or result not detected.

Table 6.3-4
Gravimetric Moisture Content and Matric Potential at MDA G

Sample Number	Sample Depth	Matrix	Gravimetric Moisture Content (%, g/g)	Matric Potential (bars)
MD54-05-59235	11.5	Qbt 2	3.0	8.0
MD54-05-59237	22.0	Qbt 2	4.5	1.3
MD54-05-59239	32.0	Qbt 2	2.1	2.9
MD54-05-59241	42.0	Qbt 2	4.8	6.0
MD54-05-59243	52.0	Qbt 2	6.4	2.0
MD54-05-59245	62.0	Qbt 2	2.4	4.0
MD54-05-59248	82.0	Qbt 1v	5.3	3.4
MD54-05-59250	92.0	Qbt 1vc	10.0	2.7
MD54-05-59252	102.0	Qbt 1g	10.8	5.0
MD54-05-59253	107.0	Qbt 1g	5.7	2.8
MD54-05-59255	117.0	Qbt 1g	5.4	2.9
MD54-05-59256	122.0	Qbt 1g	4.0	3.3
MD54-05-59258	142.0	Qbt 1g	6.4	3.0
MD54-05-59260	157.0	Qbt 1g	8.3	2.9
MD54-05-59261	162.0	Qbt 1g	7.8	2.1
MD54-05-59262	167.0	Qbt 1g	7.6	1.5
MD54-05-59264	177.0	Qct	6.1	2.4
MD54-05-59265	182.0	Qct	9.3	1.4
MD54-05-59266	185.0	Qct	7.3	4.9
MD54-05-59268	197.0	Qbog	27.2	0.6
MD54-05-59270	207.0	Tcb	0.4	48.0
MD54-05-59310	210.0	Tcb	1.2	3.7
MD54-05-59272	217.0	Tcb	2.7	19.6
MD54-05-59273	222.0	Tcb	2.1	2.1
MD54-05-59274	227.0	Tcb	0.7	7.9
MD54-05-59275	232.0	Tcb	0.5	14.8
MD54-05-59276	237.0	Tcb	0.2	95.1
MD54-05-59277	242.0	Tcb	0.4	27.6
MD54-05-59278	247.0	Tcb	2.1	50.6
MD54-05-59279	254.5	Tcb	0.9	7.3
MD54-05-59281	265.0	Tcb	0.2	15.1
MD54-05-59282	271.5	Tcb	1.4	5.5
MD54-05-59283	276.2	Tcb	0.8	15.7
MD54-05-59284	281.3	Tcb	2.1	1.1
MD54-05-59285	286.4	Tcb	0.7	11.6
MD54-05-59286	291.3	Tcb	1.6	2.4
MD54-05-59287	296.1	Tcb	3.1	3.3

Table 6.3-4 (continued)

Sample Number	Sample Depth	Matrix	Gravimetric Moisture Content (%, g/g)	Matric Potential (bars)
MD54-05-59289	301.1	Tcb	3.0	5.0
MD54-05-59288	301.5	Tcb	0.8	4.9
MD54-05-59291	316.7	Tcb	5.2	4.4
MD54-05-59292	321.8	Tcb	5.2	1.5
MD54-05-59293	326.9	Tcb	0.8	4.9
MD54-05-59294	331.6	Tcb	1.8	2.4
MD54-05-59295	336.0	Tcb	0.7	4.3
MD54-05-59296	341.9	Tcb	1.0	3.5
MD54-05-59297	346.8	Tcb	0.7	3.1
MD54-05-59298	351.0	Tcb	0.6	2.3
MD54-05-59299	356.9	Tcb	0.7	6.0
MD54-05-59301	366.9	Tcb	0.8	8.8
MD54-05-59302	371.4	Tcb	0.7	8.2
MD54-05-59303	376.1	Tcb	0.6	12.2
MD54-05-59304	381.3	Tcb	0.8	21.7
MD54-05-59305	386.7	Tcb	0.5	12.6
MD54-05-59306	391.6	Tcb	1.0	3.5
MD54-05-59307	396.7	Tcb	0.6	32.7
MD54-05-59308	401.4	Tcb	0.6	8.3
MD54-05-59309	407.0	Tcb	0.6	6.9
MD54-05-59311	436.5	Tcb	0.6	6.3
MD54-05-59312	456.7	Tcb	0.6	8.7
MD54-05-59313	482.3	Tcb	5.4	335.0
MD54-05-59314	494.0	Tcb	7.5	22.7
MD54-05-59315	545.0	Tcb	11.3	3.2

Table 6.5-1
MDA G Subsurface Vapor Sampling Field-Screening Results

Borehole ID	Borehole Location	Depth (ft)	Date	Time	CH_4 (%)	CO_2 (%)	O_2 (%)
2	54-24361	Ambient	7.17.05	0822	0.1	0.0	17.3
		30	7.17.05	0833	0.0	1.1	16.2
		Ambient	7.16.05	1411	0.0	0.0	17.9
		138	7.16.05	1418	0.1	1.0	16.6
3	54-24362	Ambient	7.25.05	0950	0.0	0.0	16.8
		35	7.25.05	0944	0.0	1.6	15.5
		Ambient	7.24.05	1558	0.0	0.0	17.4
		135	7.24.05	1604	0.0	0.9	16.6
4 (angled)	54-24363	Ambient	8.4.05	1350	0.0	0.0	17.7
		12-Bottom	8.4.05	1355	0.0	0.1	17.5
5	54-24364	Ambient	6.15.05	1505	0.0	0.0	18.0
		65	6.15.05	1514	0.0	0.5	17.2
		Ambient	6.15.05	1227	0.0	0.0	17.0
		130	6.15.05	1241	0.0	0.8	16.3
		Ambient	7.30.05	1251	0.0	0.0	17.4
		130	7.30.05	1246	0.0	0.5	17.1
6 (angled)	54-24366	Ambient	8.4.05	1100	0.0	0.0	17.4
		12-bottom	8.4.05	1105	0.0	0.0	17.4
7	54-24367	Ambient	7.7.05	1002	0.0	0.0	17.5
		30	7.7.05	1129	0.0	0.0	12.1
		153	7.7.05	1014	0.0	1.4	16.1
		Ambient	7.31.05	0912	0.0	0.1	12.3
		153	7.31.05	0920	0.0	0.6	16.8
8 (angled)	54-24368	Ambient	8.1.05	1706	0.0	0.0	17.9
		95	8.1.05	1710	0.0	1.2	16.6
		192	8.2.05	0955	0.0	1.5	16.1
9	54-24369	Ambient	7.25.05	1313	0.0	0.0	17.1
		64	7.25.05	1608	0.0	2.3	14.9
		184	7.25.05	1306	0.0	1.0	15.8
10	54-24370	Ambient	7.08.05	1331	0.0	0.0	18.0
		37	7.08.05	1452	0.0	6.3	11.2
		148	7.08.05	1340	0.0	6.4	11.0
11	54-24371	Ambient	7.27.05	1115	0.0	0.0	16.7
		40	7.27.05	1421	0.0	0.3	17.0
		141	7.2705	1122	0.0	0.5	16.0

Table 6.5-1 (continued)

Borehole ID	Borehole Location	Depth (ft)	Date	Time	CH_4 (%)	CO_2 (%)	O_2 (%)
12	54-24372	Ambient	7.28.05	0925	0.0	0.0	17.3
		55	7.28.05	1300	0.0	0.2	17.3
		185	7.28.05	0935	0.0	0.1	17.0
13	54-24373	Ambient	6.10.05	1242	0.0	0.1	17.0
		65	6.10.05	1246	0.0	2.8	14.2
		Ambient	6.10.05	1521	0.0	0.0	17.9
		65	6.10.05	1526	0.0	1.9	15.8
		Ambient	6.13.05	1321	0.0	0.0	18.0
		187	6.13.05	1332	0.0	0.6	16.9
		Ambient	6.14.05	1212	0.0	0.0	17.4
		187	6.14.05	1222	0.0	0.6	16.7
14	54-24374	Ambient	6.17.05	1510	0.0	0.0	18.2
		10	6.17.05	1521	0.0	0.4	17.3
		Ambient	6.17.05	1425	0.0	0.0	18.0
		139	6.17.05	1433	0.0	0.4	17.3
15-1	54-24375	Ambient	7.14.05	0918	1.0	0.1	17.3
		30	7.14.05	1232	0.0	1.5	15.9
		157	7.14.05	0927	0.0	1.7	15.6
15-2	54-24523	Ambient	7.12.05	1512	0.0	0.0	17.5
		485-700	7.12.05	1521	0.0	0.0	17.3
16	54-24376	Ambient	7.07.05	1341	0.0	0.0	17.9
		35	7.0705	1500	0.0	0.2	17.5
		158	7.07.05	1352	0.0	0.1	17.5
17	54-24377	Ambient	7.06.05	1234	0.0	0.0	17.4
		45	7.06.05	1404	0.0	0.2	17.8
		150	7.06.06	1247	0.0	0.2	16.9
		Ambient	7.31.05	1414	0.0	0.0	17.8
		150	7.31.05	1420	0.0	0.1	17.4
18	54-24378	Ambient	7.19.05	1336	0.0	0.0	17.7
		30	7.19.05	1429	0.0	0.7	15.8
		136	7.19.05	1331	0.1	0.8	16.8
19	54-24379	Ambient	7.20.05	1145	0.0	0.0	17.5
		20	7.20.05	1429	0.0	0.3	16.7
		144	7.20.05	1200	0.0	1.2	16.0
20	54-24380	Ambient	7.21.05	1044	0.0	0.0	17.2
		20	7.21.05	1209	0.0	0.9	17.0
		155	7.21.05	1040	0.0	1.1	16.3

Table 6.5-1 (continued)

Borehole ID	Borehole Location	Depth (ft)	Date	Time	CH_4 (%)	CO_2 (%)	O_2 (%)
21	54-24381	Ambient	7.22.05	1053	0.0	0.0	17.1
		15	7.22.05	1344	0.0	0.5	16.8
		143	7.22.05	1100	0.0	0.7	16.3
22	54-24382	Ambient	n/a[a]	n/a	n/a	n/a	n/a
		28	7.31.05	[b]	[b]	[b]	[b]
		107	7.31.05	[b]	[b]	[b]	[b]
23	54-24383	Ambient	n/a	n/a	n/a	n/a	n/a
		10	7.31.05	[b]	[b]	[b]	[b]
		107	7.31.05	[b]	[b]	[b]	[b]
24	54-24384	Ambient	n/a	n/a	n/a	n/a	n/a
		10	7.31.05	[b]	[b]	[b]	[b]
		65	5.23.05	[c]	[c]	[c]	[c]
25	54-24385	Ambient	7.22.05	1630	0.0	0.0	17.4
		30	7.23.05	1036	0.0	1.2	16.0
		134	7.22.05	1640	0.0	0.9	16.3
26	54-24386	Ambient	7.23.05	1556	0.0	0.0	17.3
		35	7.24.05	1028	0.0	1.2	15.6
		156	7.24.05	1603	0.0	1.8	15.7
27	54-24387	Ambient	n/a	n/a	n/a	n/a	n/a
		10	7.30.05	[b]	[b]	[b]	[b]
		80	5.24.05	[c]	[c]	[c]	[c]
28	54-24388	Ambient	7.18.05	1441	0.0	0.0	17.6
		25	7.18.05	1503	0.0	0.9	16.6
		Ambient	7.17.05	1327	0.0	0.0	17.7
		129	7.17.05	1322	0.0	1.0	16.6
29	54-24389	Ambient	7.29.05	0953	0.0	0.0	17.2
		20	7.29.05	0946	0.0	0.1	17.1
		Ambient	7.28.05	1634	0.0	0.0	17.7
		147	7.28.05	1642	0.0	0.4	17.3
30	54-24390	Ambient	7.15.05	1500	0.0	0.0	17.7
		30	7.15.05	1029	0.0	0.7	17.7
		158	7.15.05	1514	0.0	1.0	16.7
31	54-24391	Ambient	7.08.05	1006	0.0	0.0	17.6
		25	7.08.05	1012	0.0	0.2	17.1
		Ambient	7.07.05	1618	0.0	0.0	18.2
		165	7.07.05	1626	0.0	0.4	17.2

Table 6.5-1 (continued)

Borehole ID	Borehole Location	Depth (ft)	Date	Time	CH_4 (%)	CO_2 (%)	O_2 (%)
32	54-24392	Ambient	7.29.05	1339	0.0	0.0	17.3
		25	7.29.05	1702	0.0	0.1	17.4
		144	7.29.05	1345	0.0	0.3	16.8
33	54-24393	Ambient	7.15.05	0850	0.1	0.0	17.5
		35	7.15.05	1129	0.0	0.5	17.2
		156	7.15.05	0901	0.0	1.2	16.2
34	54-24394	Ambient	7.26.05	0930	0.0	0.0	17.0
		50	7.26.05	1513	0.1	1.5	15.9
		163	7.26.05	0939	0.0	2.2	15.1
		163	7.26.05	1258	0.0	1.8	15.5
35	54-24395	Ambient	6.16.05	1529	0.0	0.0	17.8
		40	6.16.05	1534	0.0	2.5	14.9
		Ambient	6.16.05	1318	0.0	0.0	17.2
		170	6.16.05	1325	0.0	2.3	14.7
36	54-24396	Ambient	6.17.05	1226	0.0	0.0	17.7
		10	6.17.05	1231	0.0	0.2	17.2
		Ambient	6.17.05	1033	0.0	0.1	17.5
		131	6.17.05	1042	0.0	0.7	16.6
37	54-24397	Ambient	6.22.05	1600	0.1	0.0	18.0
		15	6.22.05	1645	0.1	0.2	17.5
		125	6.22.05	1605	0.1	0.4	17.5

[a] n/a = Not applicable.

[b] CES Landtec GEM2000 gas analyzer not functioning. Purge of sample interval confirmed by duration of water vapor collection and monitoring of packer pressure.

[c] Prior field-screening performed using single-packer system through hollow-stem auger.

Table 6.6-1
VOCs Detected in Pore-Gas Samples at MDA G

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24361	30–32	MD54-05-60283	Chloroform	234
			Dichloroethane[1,1-]	688
			Dichloroethene[1,1-]	436
			Tetrachloroethene	9490
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	3140 (J)
			Trichloroethane[1,1,1-]	14700
			Trichloroethene	53700
	138–140	MD54-05-60282	Chloroform	381
			Dichloroethane[1,1-]	1130
			Dichloroethene[1,1-]	832
			Tetrachloroethene	3320
			Toluene	267
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	1460 (J)
			Trichloroethane[1,1,1-]	13600
			Trichloroethene	29000
54-24362	35–37	MD54-05-60285	Carbon Tetrachloride	32.0
			Chloroform	100
			Dichlorodifluoromethane	2400
			Dichloroethane[1,1-]	260
			Dichloroethene[1,1-]	330
			Styrene	45.0
			Tetrachloroethene	1100
			Toluene	400
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	1200
			Trichloroethane[1,1,1-]	8200
			Trichloroethene	6500
			Trichlorofluoromethane	130
	135–137	MD54-05-60284	Acetone	64.1 (J)
			Chloroform	151
			Dichloroethane[1,1-]	526
			Dichloroethene[1,1-]	753
			Methylene Chloride	55.5
			Styrene	51.1
			Tetrachloroethene	1150
			Toluene	324
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	3060 (J+)

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24362 (continued)			Trichloroethane[1,1,1-]	10900
			Trichloroethene	5260
			Trichlorofluoromethane	286
54-24363	12–250	MD54-05-60286	Toluene	240
			Carbon Disulfide	2.9
			Chloroform	5.2
			Dichlorodifluoromethane	13
			Dichloroethane[1,1-]	11
			Dichloroethene[1,1-]	46
			Styrene	10
			Butanone[2-]	5
			Tetrachloroethene	96
			Acetone	70
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	120
			Trichloroethane[1,1,1-]	900
			Trichloroethene	45
			Trichlorofluoromethane	6.6
			Xylene[1,3-]+Xylene[1,4-]	8.4
54-24364	65–67	MD54-05-60289	Dichloroethane[1,1-]	129
			Dichloroethene[1,1-]	384
			Dichloropropane[1,2-]	25.9
			Methylene Chloride	29.9
			Tetrachloroethene	1760
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	1840 (J)
			Trichloroethane[1,1,1-]	5340
			Trichloroethene	2850
			Trichlorofluoromethane	225
	130–132	MD54-05-60288	Acetone	102
			Dichloroethane[1,1-]	105
			Dichloroethene[1,1-]	384
			Dichloropropane[1,2-]	42.0
			Methylene Chloride	45.1
			Tetrachloroethene	1290
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	1300 (J)
			Trichloroethane[1,1,1-]	4040
			Trichloroethene	1830
			Trichlorofluoromethane	180

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24366	12–250	MD54-05-60290	Trichloroethane[1,1,1-]	29
			Acetone	17
			Toluene	20
54-24367	30–32	MD54-05-60293	Dichloroethane[1,1-]	259
			Dichloroethene[1,1-]	396
			Styrene	63.9
			Tetrachloroethene	481
			Toluene	527
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	2070 (J+)
			Trichloroethane[1,1,1-]	13100
			Trichloroethene	1290
			Trichlorofluoromethane	399
	153–155	MD54-05-60292	Dichloroethane[1,1-]	809
			Dichloroethene[1,1-]	2540
			Styrene	111
			Tetrachloroethene	881
			Toluene	1170
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	6360 (J+)
			Trichloroethane[1,1,1-]	31600
			Trichloroethene	2420
			Trichlorofluoromethane	483
54-24368	95–97	MD54-05-60295	Dichlorodifluoromethane	310
			Dichloroethane[1,1-]	660
			Dichloroethene[1,1-]	1900
			Styrene	160
			Tetrachloroethene	290
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	7100
			Trichloroethane[1,1,1-]	42000
			Trichloroethene	480
			Trichlorofluoromethane	770
	192–194	MD54-05-60294	Dichlorodifluoromethane	390
			Dichloroethane[1,1-]	430
			Dichloroethene[1,1-]	1600
			Propanol[2-]	210
			Styrene	500
			Tetrachloroethene	280
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	4000
			Trichloroethane[1,1,1-]	22000

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24368 (continued)			Trichloroethene	470
			Trichlorofluoromethane	820
54-24369	65–67	MD54-05-61743	Dichlorodifluoromethane	2800
			Dichloroethane[1,1-]	2800
			Dichloroethene[1,1-]	4800
			Tetrachloroethene	3600
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	18000
			Trichloroethane[1,1,1-]	120000
			Trichloroethene	3200
			Trichlorofluoromethane	2500
	184–186	MD54-05-61742	Dichlorodifluoromethane	1000
			Dichloroethane[1,1-]	490
			Dichloroethene[1,1-]	1100
			Tetrachloroethene	500
			Toluene	140
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	3800
			Trichloroethane[1,1,1-]	20000
			Trichloroethene	500
			Trichlorofluoromethane	780
54-24370	37–39	MD54-05-60299	Dichlorodifluoromethane	10400
			Dichloroethene[1,1-]	2730
			Dichloroethene[cis-1,2-]	388
			Tetrachloroethene	1020
			Toluene	791
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	48300 (J+)
			Trichloroethane[1,1,1-]	92700
			Trichloroethene	12400
			Trichlorofluoromethane	10100
	148–150	MD54-05-60298	Dichlorodifluoromethane	12400
			Dichloroethane[1,1-]	6880
			Dichloroethene[1,1-]	3290
			Dichloroethene[cis-1,2-]	396
			Methylene Chloride	312
			Styrene	179
			Tetrachloroethene	624
			Toluene	1130
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	33700 (J+)
			Trichloroethane[1,1,1-]	65400

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24370 (continued)			Trichloroethene	6980
			Trichlorofluoromethane	7300
54-24371	40–42	MD54-05-61745	Butanone[2-]	72.0
			Chloroform	100
			Dichlorodifluoromethane	730
			Dichloroethane[1,1-]	760
			Dichloroethene[1,1-]	290
			Methyl-2-pentanone[4-]	29.0
			Styrene	120
			Tetrachloroethene	460
			Toluene	4400
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	12000
			Trichloroethane[1,1,1-]	9100
			Trichloroethene	2400
			Trichlorofluoromethane	1300
	141–143	MD54-05-61744	Acetone	46.0
			Butanone[2-]	84.0
			Chloroform	92.0
			Dichlorodifluoromethane	690
			Dichloroethane[1,1-]	720
			Dichloroethene[1,1-]	330
			Methyl-2-pentanone[4-]	28.0
			Methylene Chloride	17.0
			Styrene	100
			Tetrachloroethene	410
			Toluene	4400
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	5900
			Trichloroethane[1,1,1-]	7500
			Trichloroethene	2600
			Trichlorofluoromethane	1200
54-24372	55–57	MD54-05-61747	Acetone	30.0
			Butanone[2-]	28.0
			Dichlorodifluoromethane	180
			Dichloroethane[1,1-]	25.0
			Dichloroethene[1,1-]	38.0
			Methyl-2-pentanone[4-]	10.0
			Styrene	90.0
			Tetrachloroethene	190

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24372 (continued)			Toluene	1800
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	130
			Trichloroethane[1,1,1-]	970
			Trichloroethene	200
			Trichlorofluoromethane	360
	185–187	MD54-05-61746	Acetone	21.0
			Butanone[2-]	22.0
			Dichlorodifluoromethane	86.0
			Dichloroethane[1,1-]	25.0
			Dichloroethene[1,1-]	47.0
			Methyl-2-pentanone[4-]	10.0
			Methylene Chloride	57.0
			Styrene	95.0
			Tetrachloroethene	180
			Toluene	1400
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	63.0
			Trichloroethane[1,1,1-]	750
			Trichloroethene	210
			Trichlorofluoromethane	150
			Xylene[1,3-]+Xylene[1,4-]	7.40
54-24373	65–67	MD54-05-60305	Acetone	128
			Butanone[2-]	3.83
			Chloroform	9.76
			Dichlorodifluoromethane	939
			Dichloroethane[1,1-]	13.8
			Dichloroethene[1,1-]	31.7
			Dichloropropane[1,2-]	55.4
			Methylene Chloride	149
			Tetrachloroethene	94.9
			Toluene	3.50
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	605
			Trichloroethane[1,1,1-]	1200
			Trichloroethene	69.8
			Trichlorofluoromethane	1460
	187–189	MD54-05-60304	Acetone	28.5
			Dichlorodifluoromethane	203
			Dichloroethene[1,1-]	5.55
			Dichloropropane[1,2-]	9.24

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24373 (continued)			Methylene Chloride	25.0
			Tetrachloroethene	18.3
			Toluene	4.90
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	115
			Trichloroethane[1,1,1-]	229
			Trichloroethene	10.2
			Trichlorofluoromethane	270
54-24374	10–12	MD54-05-60306	Dichloroethane[1,1-]	117
			Methylene Chloride	41.7
			Tetrachloroethene	217
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	4290 (J)
			Trichloroethane[1,1,1-]	8720
			Trichloroethene	193
			Trichlorofluoromethane	101
	139–141	MD54-05-60307	Acetone	228
			Dichloroethane[1,1-]	93.0
			Dichloroethene[1,1-]	365
			Dichloropropane[1,2-]	69.3
			Methylene Chloride	29.5
			Tetrachloroethene	183
			Toluene	32.0
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	1990 (J)
			Trichloroethane[1,1,1-]	5180
			Trichloroethene	274
			Trichlorofluoromethane	101
54-24375	30–32	MD54-05-60309	Dichloroethane[1,1-]	485
			Dichloroethene[1,1-]	1470
			Tetrachloroethene	11500
			Toluene	181
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	9190 (J)
			Trichloroethane[1,1,1-]	43100
			Trichloroethene	1130
			Trichlorofluoromethane	500
	157–159	MD54-05-60308	Dichloroethane[1,1-]	380
			Dichloroethene[1,1-]	1820
			Methylene Chloride	104
			Tetrachloroethene	11500
			Toluene	162

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m3)
54-24375 (continued)			Trichloro-1,2,2-trifluoroethane[1,1,2-]	8420 (J)
			Trichloroethane[1,1,1-]	36000
			Trichloroethene	1400
			Trichlorofluoromethane	511
54-24376	35–37	MD54-05-60311	Dichloroethane[1,1-]	129
			Dichloroethene[1,1-]	246
			Styrene	93.7
			Tetrachloroethene	149
			Toluene	565
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	1230 (J+)
			Trichloroethane[1,1,1-]	6000
			Trichloroethene	258
			Trichlorofluoromethane	78.6
	158–160	MD54-05-60310	Acetone	49.9
			Butanone[2-]	5.89
			Dichloroethane[1,1-]	64.7
			Dichloroethene[1,1-]	166
			Methyl-2-pentanone[4-]	16.4
			Styrene	119
			Tetrachloroethene	74.6
			Toluene	1020
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	421 (J+)
			Trichloroethane[1,1,1-]	2340
			Trichloroethene	161
			Trichlorofluoromethane	33.7
54-24377	45–47	MD54-05-60313	Dichloroethane[1,1-]	76.9
			Dichloroethene[1,1-]	234
			Methylene Chloride	12.8
			Styrene	123
			Tetrachloroethene	122
			Toluene	603
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	1380 (J+)
			Trichloroethane[1,1,1-]	3540
			Trichloroethene	215
			Trichlorofluoromethane	73.0
	150–152	MD54-05-60312	Acetone	57.0
			Butanone[2-]	9.43
			Dichloroethane[1,1-]	48.5

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24377 (continued)			Dichloroethene[1,1-]	178
			Methyl-2-pentanone[4-]	19.2
			Methylene Chloride	8.33
			Styrene	145
			Tetrachloroethene	67.8
			Toluene	1280
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	758 (J+)
			Trichloroethane[1,1,1-]	2020
			Trichloroethene	134
			Trichlorofluoromethane	43.2
			Xylene[1,3-]+Xylene[1,4-]	13.0
54-24378	30–32	MD54-05-60315	Dichloroethane[1,1-]	7280
			Dichloroethene[1,1-]	5550
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	22200 (J)
			Trichloroethane[1,1,1-]	464000
			Trichloroethene	4080
	136–138	MD54-05-60314	Dichloroethane[1,1-]	12900
			Dichloroethene[1,1-]	13900
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	28300 (J)
			Trichloroethane[1,1,1-]	709000
			Trichloroethene	7520
54-24379	20–22	MD54-05-60317	Dichloroethane[1,1-]	1460
			Dichloroethene[1,1-]	3650
			Tetrachloroethene	664
			Toluene	279
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	375 (J)
			Trichloroethane[1,1,1-]	32700
			Trichloroethene	1240
	144–146	MD54-05-60316	Dichloroethane[1,1-]	6070
			Dichloroethene[1,1-]	15100
			Tetrachloroethene	2030
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	1530 (J)
			Trichloroethane[1,1,1-]	98200
			Trichloroethene	4780
54-24380	20–22	MD54-05-60319	Chloroform	1850
			Dichloroethane[1,1-]	295
			Dichloroethene[1,1-]	396
			Tetrachloroethene	813

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24380 (continued)			Toluene	128
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	2990 (J+)
			Trichloroethane[1,1,1-]	14700
			Trichloroethene	3440
			Trichlorofluoromethane	163
	155–157	MD54-05-60318	Chloroform	683
			Dichloroethane[1,1-]	445
			Dichloroethene[1,1-]	753
			Methylene Chloride	79.8
			Styrene	76.6
			Tetrachloroethene	813
			Toluene	716
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	2990 (J+)
			Trichloroethane[1,1,1-]	16900
			Trichloroethene	4030
			Trichlorofluoromethane	236
54-24381	15–17	MD54-05-60321	Dichloroethane[1,1-]	1660
			Dichloroethene[1,1-]	3800
			Tetrachloroethene	949
			Toluene	309
			Trichloroethane[1,1,1-]	54500
			Trichloroethene	462
	143–145	MD54-05-60320	Dichloroethane[1,1-]	1780
			Dichloroethene[1,1-]	5150
			Tetrachloroethene	746
			Toluene	377
			Trichloroethane[1,1,1-]	51300
			Trichloroethene	537
54-24382	28–29	MD54-05-60323	Chloroform	57.0
			Dichloroethane[1,1-]	950
			Dichloroethene[1,1-]	1100
			Ethanol	59.0 (J)
			Tetrachloroethene	310
			Trichloroethane[1,1,1-]	8400
			Trichloroethene	90.0
	107–109	MD54-05-60322	Acetone	83.0 (J)
			Butanone[2-]	8.50
			Chloroform	8.60

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24382 (continued)			Dichloroethane[1,1-]	180
			Dichloroethane[1,2-]	9.00
			Dichloroethene[1,1-]	170
			Methylene Chloride	5.30
			n-Heptane	8.90
			Propanol[2-]	47.0
			Styrene	400
			Tetrachloroethene	37.0
			Toluene	44.0
			Trichloroethane[1,1,1-]	1100
			Trichloroethene	18.0
			Vinyl Chloride	2.90
			Xylene[1,3-]+Xylene[1,4-]	15.0
54-24383	10–11	MD54-05-60324	Acetone	23.0 (J)
			Butanol[1-]	13.0
			Butanone[2-]	4.30
			Dichloroethane[1,1-]	7.60
			Dichloroethene[1,1-]	13.0
			Ethyltoluene[4-]	13.0
			Styrene	8.10
			Trichloroethane[1,1,1-]	80.0
			Trimethylbenzene[1,2,4-]	10.0
			Xylene[1,3-]+Xylene[1,4-]	13.0
	107–109	MD54-05-60359	Acetone	27.0 (J)
			Butanone[2-]	2.80
			Dichloroethane[1,1-]	52.0
			Dichloroethene[1,1-]	95.0
			Propanol[2-]	8.90
			Styrene	220
			Tetrachloroethene	44.0
			Toluene	30.0
			Trichloroethane[1,1,1-]	440
			Trichloroethene	12.0
			Xylene[1,3-]+Xylene[1,4-]	8.40
54-24384	10–12	MD54-05-60327	Acetone	58.0 (J)
			Dichloroethane[1,1-]	4.40
			Dichloroethene[1,1-]	9.20
			Propanol[2-]	77.0

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24384 (continued)			Styrene	130
			Toluene	32.0
			Trichloroethane[1,1,1-]	68.0
			Trichloroethene	47.0
			Xylene[1,3-]+Xylene[1,4-]	12.0
	65–67	MD54-05-60326	Acetone	112
			Dichloroethane[1,1-]	113
			Dichloroethene[1,1-]	285
			Hexane	5.64
			Methyl-2-pentanone[4-]	16.8
			Tetrachloroethene	42.0
			Toluene	10.2
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	60.5
			Trichloroethane[1,1,1-]	1960
			Trichloroethene	41.9
			Xylene[1,3-]+Xylene[1,4-]	16.5
54-24385	30–32	MD54-05-60329	Dichloroethane[1,1-]	3880
			Dichloroethene[1,1-]	5550
			Tetrachloroethene	5630
			Toluene	162
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	1070 (J+)
			Trichloroethane[1,1,1-]	65400
			Trichloroethene	859
	134–136	MD54-05-60328	Dichloroethane[1,1-]	5660
			Dichloroethene[1,1-]	8320
			Tetrachloroethene	4880
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	1070 (J+)
			Trichloroethane[1,1,1-]	70900
			Trichloroethene	1130
54-24386	35–37	MD54-05-60331	Dichloroethane[1,1-]	4040
			Dichloroethene[1,1-]	4750
			Tetrachloroethene	1150
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	996 (J+)
			Trichloroethane[1,1,1-]	98200
			Trichloroethene	1020
	156–158	MD54-05-60330	Dichloroethane[1,1-]	33200
			Dichloroethene[1,1-]	59400
			Tetrachloroethene	5490

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24386 (continued)			Trichloro-1,2,2-trifluoroethane[1,1,2-]	5440 (J+)
			Trichloroethane[1,1,1-]	447000
			Trichloroethene	8590
54-24387	10–11	MD54-05-60333	Acetone	51.0 (J)
			Butanone[2-]	5.50
			Dichloroethene[1,1-]	5.00
			Ethyltoluene[4-]	13.0
			Styrene	16.0
			Toluene	7.80
			Trichloroethane[1,1,1-]	41.0
			Trichloroethene	20.0
			Trimethylbenzene[1,2,4-]	23.0
			Trimethylbenzene[1,3,5-]	5.50
			Xylene[1,2-]	5.80
			Xylene[1,3-]+Xylene[1,4-]	14.0
	80–82	MD54-05-60332	Acetone	123
			Butanone[2-]	9.43
			Dichloroethane[1,1-]	5.66
			Dichloroethene[1,1-]	7.53
			Ethanol	9.04
			Hexane	7.75
			Methyl-2-pentanone[4-]	9.83
			Toluene	13.9
			Trichloroethane[1,1,1-]	65.4
			Trichloroethene	29.0
			Trimethylbenzene[1,2,4-]	4.91
			Xylene[1,3-]+Xylene[1,4-]	20.8
54-24388	25–27	MD54-05-60335	Dichloroethane[1,1-]	2180
			Dichloroethene[1,1-]	2810
			Tetrachloroethene	2030
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	5590 (J)
			Trichloroethane[1,1,1-]	125000
			Trichloroethene	2850
	129–131	MD54-05-60334	Dichloroethane[1,1-]	2670
			Dichloroethene[1,1-]	5150
			Tetrachloroethene	1970
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	7350 (J)

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24388 (continued)			Trichloroethane[1,1,1-]	125000
			Trichloroethene	4190
54-24389	20–22	MD54-05-60337	Acetone	13.0 (J)
			Butanone[2-]	15.0
			Carbon Tetrachloride	16.0
			Chloroform	21.0
			Dichlorodifluoromethane	22.0
			Dichloroethane[1,1-]	28.0
			Dichloroethene[1,1-]	82.0
			Methyl-2-pentanone[4-]	7.90
			Styrene	85.0
			Tetrachloroethene	630
			Toluene	1200
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	320
			Trichloroethane[1,1,1-]	1700
			Trichloroethene	460
			Trichlorofluoromethane	12.0
			Xylene[1,3-]+Xylene[1,4-]	6.60
	147–149	MD54-05-60336	Acetone	35.0 (J)
			Butanone[2-]	28.0
			Carbon Tetrachloride	23.0
			Chloroform	42.0
			Dichlorodifluoromethane	110
			Dichloroethane[1,1-]	92.0
			Dichloroethene[1,1-]	310
			Methyl-2-pentanone[4-]	14.0
			Methylene Chloride	27.0
			Styrene	70.0
			Tetrachloroethene	920
			Toluene	2600
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	590
			Trichloroethane[1,1,1-]	3700
			Trichloroethene	1100
			Trichlorofluoromethane	57.0
54-24390	30–32	MD54-05-60339	Dichloroethane[1,1-]	2180
			Dichloroethene[1,1-]	3250
			Tetrachloroethene	1360
			Toluene	365

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m3)
54-24390 (continued)			Trichloro-1,2,2-trifluoroethane[1,1,2-]	21400 (J)
			Trichloroethane[1,1,1-]	142000
	158–160	MD54-05-60338	Dichloroethane[1,1-]	1420
			Dichloroethene[1,1-]	3680
			Tetrachloroethene	2370
			Toluene	678
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	19100 (J)
			Trichloroethane[1,1,1-]	109000
			Trichloroethene	644
54-24391	25–27	MD54-05-60341	Dichloroethane[1,1-]	324
			Dichloroethene[1,1-]	325
			Styrene	97.9
			Tetrachloroethene	2780
			Toluene	377
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	1530 (J+)
			Trichloroethane[1,1,1-]	22400
			Trichloroethene	140
			Trichlorofluoromethane	432
	165–167	MD54-05-60340	Dichloroethane[1,1-]	186
			Dichloroethene[1,1-]	475
			Styrene	72.4
			Tetrachloroethene	949
			Toluene	829
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	1150 (J+)
			Trichloroethane[1,1,1-]	7630
			Trichloroethene	193
			Trichlorofluoromethane	376
54-24392	25–27	MD54-05-60343	Acetone	13.0 (J)
			Butanone[2-]	12.0
			Dichlorodifluoromethane	20.0
			Dichloroethane[1,1-]	14.0
			Dichloroethene[1,1-]	40.0
			Methyl-2-pentanone[4-]	6.40
			Styrene	60.0
			Tetrachloroethene	140
			Toluene	880
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	31.0
			Trichloroethane[1,1,1-]	580

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24392 (continued)			Trichloroethene	150
			Trichlorofluoromethane	12.0
			Xylene[1,3-]+Xylene[1,4-]	4.60
	144–146	MD54-05-60342	Acetone	36.0 (J)
			Butanone[2-]	18.0
			Carbon Disulfide	4.50
			Chloroform	10.0
			Dichlorodifluoromethane	100
			Dichloroethane[1,1-]	35.0
			Dichloroethene[1,1-]	170
			Methyl-2-pentanone[4-]	8.20
			Methylene Chloride	4.80
			Styrene	66.0
			Tetrachloroethene	210
			Toluene	970
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	190
			Trichloroethane[1,1,1-]	1300
			Trichloroethene	220
			Trichlorofluoromethane	51.0
			Xylene[1,3-]+Xylene[1,4-]	14.0
54-24393	35–37	MD54-05-60345	Chlorodifluoromethane	3890
			Chloroform	29.3
			Dichlorodifluoromethane	1930
			Dichloroethane[1,1-]	190
			Dichloroethene[1,1-]	174
			Styrene	59.6
			Tetrachloroethene	305
			Toluene	414
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	4370 (J)
			Trichloroethane[1,1,1-]	4420
			Trichloroethene	156
			Trichlorofluoromethane	1120
			Xylene[1,3-]+Xylene[1,4-]	60.8
	156–158	MD54-05-60344	Chlorodifluoromethane	2050
			Chloroform	18.1
			Dichlorodifluoromethane	2080
			Dichloroethane[1,1-]	194
			Dichloroethene[1,1-]	317

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24393 (continued)			Methylene Chloride	13.9
			Styrene	15.8
			Tetrachloroethene	393
			Toluene	226
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	4440 (J)
			Trichloroethane[1,1,1-]	4800
			Trichloroethene	193
			Trichlorofluoromethane	1240
54-24394	50–52	MD54-05-61749	Chloroform	150
			Dichlorodifluoromethane	1100
			Dichloroethane[1,1-]	1600
			Dichloroethene[1,1-]	930
			Tetrachloroethene	640
			Toluene	95.0
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	21000
			Trichloroethane[1,1,1-]	18000
			Trichloroethene	32000
			Trichlorofluoromethane	2200
	163–165	MD54-05-61748	Chloroform	120
			Dichlorodifluoromethane	1900
			Dichloroethane[1,1-]	960
			Dichloroethene[1,1-]	740
			Methylene Chloride	46.0
			Tetrachloroethene	580
			Toluene	120
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	9200
			Trichloroethane[1,1,1-]	13000
			Trichloroethene	12000
			Trichlorofluoromethane	2500
54-24395	40–42	MD54-05-60349	Bromodichloromethane	26.1
			Chloroform	73.2
			Dichlorodifluoromethane	1580
			Dichloroethane[1,1-]	48.5
			Methylene Chloride	11.8
			Tetrachloroethene	183
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	5280 (J)
			Trichloroethane[1,1,1-]	4360
			Trichloroethene	134

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24395 (continued)			Trichlorofluoromethane	3870
	170–172	MD54-05-60348	Acetone	112
			Bromodichloromethane	23.4
			Chloroform	48.8
			Dichlorodifluoromethane	1090
			Dichloroethane[1,1-]	34.4
			Dichloropropane[1,2-]	18.0
			Methanol	301
			Methylene Chloride	30.9
			Tetrachloroethene	149
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	2680 (J)
			Trichloroethane[1,1,1-]	2560
			Trichloroethene	172
			Trichlorofluoromethane	2250
54-24396	10–12	MD54-05-60351	Acetone	126
			Dichloroethane[1,1-]	80.9
			Dichloroethene[1,1-]	242
			Dichloropropane[1,2-]	24.5
			Methylene Chloride	16.7
			Tetrachloroethene	156
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	1530 (J)
			Trichloroethane[1,1,1-]	4470
			Trichloroethene	231
			Trichlorofluoromethane	61.8
	131–133	MD54-05-60350	Acetone	109
			Dichloroethane[1,1-]	166
			Dichloroethene[1,1-]	674
			Dichloropropane[1,2-]	32.3
			Methylene Chloride	34.7
			Tetrachloroethene	291
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	2530 (J)
			Trichloroethane[1,1,1-]	7090
			Trichloroethene	537
			Trichlorofluoromethane	157
54-24397	15–17	MD54-05-60353	Acetone	209
			Butanone[2-]	7.37
			Dichloroethane[1,1-]	36.0
			Dichloroethene[1,1-]	119

Table 6.6-1 (continued)

Borehole Location	Depth (ft)	Sample ID	Analyte	Result (µg/m³)
54-24397 (continued)			Dichloropropane[1,2-]	17.1
			Methylene Chloride	10.1
			Tetrachloroethene	94.9
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	1380 (J+)
			Trichloroethane[1,1,1-]	2290
			Trichloroethene	80.6
			Trichlorofluoromethane	44.4
	125–127	MD54-05-60352	Acetone	147
			Butanone[2-]	7.37
			Dichloroethane[1,1-]	44.5
			Dichloroethene[1,1-]	214
			Dichloropropane[1,2-]	20.3
			Methylene Chloride	11.1
			Tetrachloroethene	81.3
			Toluene	13.6
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	1150 (J+)
			Trichloroethane[1,1,1-]	2400
			Trichloroethene	107
			Trichlorofluoromethane	67.4
54-24523	485–700	MD54-05-60366	Acetone	71.2
			Butanone[2-]	5.89
			Toluene	7.53

Note: See Appendix A for data qualifier definitions.

Table 6.6-2
Tritium Detected in Pore-Gas Samples at MDA G

Borehole Location	Depth (ft)	Sample ID	Result	Units
54-24361	30–32	MD54-05-61531	11890	pCi/L
	138–140	MD54-05-61530	3126	pCi/L
54-24362	35–37	MD54-05-61533	35630	pCi/L
	135–137	MD54-05-61532	24720	pCi/L
54-24363	12–14	MD54-05-61534	22510	pCi/L
54-24364	65–67	MD54-05-61537	5254	pCi/L
	130–132	MD54-05-61536	5846	pCi/L
54-24366	12–14	MD54-05-61538	37910	pCi/L
54-24367	30–31	MD54-05-61541	81190	pCi/L
	153–155	MD54-05-61540	7601	pCi/L
54-24368	95–97	MD54-05-61543	1886	pCi/L
	192–194	MD54-05-61542	3331	pCi/L
54-24369	65–67	MD54-05-61545	17310	pCi/L
	184–186	MD54-05-61544	3827	pCi/L
54-24371	40–42	MD54-05-61549	4515	pCi/L
	141–143	MD54-05-61548	8148	pCi/L
54-24372	55–57	MD54-05-61551	6210	pCi/L
	185–187	MD54-05-61550	6022	pCi/L
54-24373	65–67	MD54-05-60305	5700	pCi/L
	187–189	MD54-05-60304	1910	pCi/L
54-24374	10–12	MD54-05-61555	2659000	pCi/L
	139–141	MD54-05-61554	206800	pCi/L
54-24375	30–32	MD54-05-61557	6584	pCi/L
	157–159	MD54-05-61556	2135	pCi/L
54-24376	158–160	MD54-05-61558	26350	pCi/L
54-24377	150–152	MD54-05-61560	18810	pCi/L
54-24378	30–32	MD54-05-61563	3512000	pCi/L
	136–138	MD54-05-61562	1119000	pCi/L
54-24379	20–22	MD54-05-61565	3844	pCi/L
	144–146	MD54-05-61564	25410	pCi/L
54-24380	20–22	MD54-05-61567	2381	pCi/L
	155–157	MD54-05-61566	2131	pCi/L
54-24381	15–17	MD54-05-61569	4761	pCi/L
	143–145	MD54-05-61568	3614	pCi/L
54-24382	28–29	MD54-05-61571	2597	pCi/L
	107–109	MD54-05-61570	6406	pCi/L
54-24383	10–11	MD54-05-60325	1965	pCi/L

Table 6.6-2 (continued)

Borehole Location	Depth (ft)	Sample ID	Result	Units
54-24384	10–12	MD54-05-60327	7183	pCi/L
	65–67	MD54-05-60326	479	pCi/L
54-24385	30–32	MD54-05-61577	395300	pCi/L
	134–136	MD54-05-61576	13320	pCi/L
54-24386	35–37	MD54-05-61579	6963000	pCi/L
	156–158	MD54-05-61578	172100	pCi/L
54-24387	10–11	MD54-05-60333	2763	pCi/L
54-24388	25–27	MD54-05-61583	124200	pCi/L
54-24389	20–22	MD54-05-61584	6872	pCi/L
	147–149	MD54-05-61585	3953	pCi/L
54-24390	30–32	MD54-05-61587	5480	pCi/L
	158–160	MD54-05-61586	1888	pCi/L
54-24391	25–27	MD54-05-61589	4357	pCi/L
	165–167	MD54-05-61588	7632	pCi/L
54-24392	25–27	MD54-05-61591	7193	pCi/L
	144–146	MD54-05-61590	4837	pCi/L
54-24393	35–37	MD54-05-61593	1489	pCi/L
54-24394	163–165	MD54-05-61594	1458	pCi/L
54-24396	131–133	MD54-05-61598	17680	pCi/L
54-24397	15–17	MD54-05-61601	1257000	pCi/L
54-25105	485–700	MD54-05-61604	5150	pCi/L

Table 6.7-1
Summary of Subsurface Soil and Rock Samples from BH 1 (54-24360)

Actual Analytical Sample Depth (ft)	Matrix	Sample ID	Sample Type
60–65	QBT1v	MD54-05-57871	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs
60–65	QBT1v	MD54-05-57878	Field Dup (metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, dioxins/furans, VOCs)
135–138	QCT	MD54-05-57872	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate
195–200	QBO	MD54-05-57873	Metals+Cn+B+Mo, AM+GS+U+PU+TH+SR90+TC99, Nitrate & Perchlorate, HE

Table 6.7-2
Summary of Pore-Gas Samples from BH 1 (54-24360)

Actual Analytical Sample Depth (ft)	Matrix	Sample ID	Laboratory Analytical Sample Type	Field Screening
29–31	Qbt2	MD54-05-63415	SUMMA Canister: VOCs Silica Gel Column: Tritium	Landtec: CH_4, CO_2, O_2
		MD54-05-63416	Field Duplicate: SUMMA Canister: VOCs Silica Gel Column: Tritium	Landtec: CH_4, CO_2, O_2
155–157	Qbt 1g	MD54-05-63413	SUMMA Canister: VOCs Silica Gel Column: Tritium	Landtec: CH_4, CO_2, O_2
		MD54-05-63414	Field Duplicate: SUMMA Canister: VOCs Silica Gel Column: Tritium	Landtec: CH_4, CO_2, O_2
n/a	n/a	MD54-05-63417	Equipment Blank: SUMMA Canister: VOCs Silica Gel Column: Tritium	n/a
n/a	n/a	MD54-05-63418	Equipment Blank: SUMMA Canister: VOCs Silica Gel Column: Tritium	n/a

*n/a = Not applicable.

Table 6.7-3
Preliminary Tritium Detects in Pore Gas from BH 1 (54-24360)

Sample ID	Depth (ft)	Analyte	Result	Units
MD54-05-63415	29–31	Tritium	2484	pCi/L
MD54-05-63413	155–157	Tritium	2182	pCi/L

Note: Results have not been validated in accordance with Laboratory QA/QC procedures.

Table 6.7-4
Preliminary VOCs Detected in Pore Gas from BH 1 (54-24360)

Sample ID	Depth (ft)	Analyte Name	Result (µg/m^3)
MD54-05-63415	29–31	1,1,1-Trichloroethane	24000
		1,1-Dichloroethene	1800
		1,1-Dichloroethane	1200
		Tetrachloroethene	950
		Trichloroethene	390
		Toluene	150
		m,p-Xylene	91
MD54-05-63413	155–157	1,1,1-Trichloroethane	9700
		1,1-Dichloroethene	1900
		1,1-Dichloroethane	880
		Toluene	670
		Tetrachloroethene	450
		m,p-Xylene	300
		Benzene	280
		Trichloroethene	260
		Hexane	240
		o-Xylene	120
		cis-1,2-Dichloroethene	110
		Heptane	100
		Ethyl Benzene	80
		Chloroform	75
		Methylene Chloride	36

Note: Results have not been validated in accordance with Laboratory QA/QC procedures.

Table 6.7-5
Preliminary VOCs Detected in Subsurface Soil and Rock Samples from BH 1 (54-24360)

Sample ID	Depth (ft)	Media	Analyte	Result (mg/kg)
MD54-05-57871	60–65	Qbt 1v	Acetone	0.00815
			Methylene chloride	0.00551

Note: Results have not been validated in accordance with Laboratory QA/QC procedures.

Table 6.7-6
Preliminary Inorganic Chemicals above BVs in Subsurface Soil and Rock Samples from BH 1 (54-24360)

Sample ID	Depth (ft)	Media	Analyte	BV (mg/kg)	Result (mg/kg)
MD54-05-57871	60–65	Qbt 1v	Molybdenum	na*	0.5
			Nitrate	na	1.14
MD54-05-57872	135–138	Qct	Aluminum	3,560	4960
			Arsenic	0.56	0.708
			Boron	na	1.91
			Chromium	2.6	2.89
			Copper	3.96	4.07
			Molybdenum	na	0.335
			Nitrate	na	0.863
MD54-05-57873	195–200	Qbo	Magnesium	739	812
			Molybdenum	na	0.381
			Nitrate	na	0.856

Note: Results have not been validated in accordance with Laboratory QA/QC procedures.
*na = Not available.

Table 6.7-7
Preliminary Radionuclides above BVs in Subsurface Soil and Rock Samples from BH 1 (54-24360)

Sample ID	Depth (ft)	Media	Analyte	BV (pCi/g)	Result (pCi/g)
MD54-05-57871	60–65	Qbt 1v	Thorium-228	3.76	3.76
			Uranium-235	0.14	0.157
MD54-05-57872	135–138	Qct	Uranium-235	0.18	0.218
MD54-05-57873	195–200	Qbo	Uranium-235	0.18	0.232

Note: Results have not been validated in accordance with Laboratory QA/QC procedures.