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Periodic Monitoring Report for Vapor Sampling Activities at Material Disposal Area L, Solid Waste Management Unit 54-006, at Technical Area 54, for First Quarter Fiscal Year 2008

Los Alamos
NATIONAL LABORATORY
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Prepared by the Environmental Programs Directorate

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EXECUTIVE SUMMARY

This periodic monitoring report summarizes field-screening and sampling activities conducted during the first quarter of fiscal year 2008 at Material Disposal Area (MDA) L, Solid Waste Management Unit 54-006, in Technical Area 54 at Los Alamos National Laboratory. The objective of the monitoring is to evaluate concentration trends in volatile organic compounds (VOCs) in subsurface vapor at MDA L over time and over their distances from known VOC source areas.

Validated analytical results and field monitoring confirm the presence of two VOC source areas. VOC concentrations in each source area decrease from the base of the shafts and pit (where organic chemicals had been disposed of) to borehole total depth (TD). The borehole TDs range from 80 ft in angled borehole 54-02021 to 608 ft in open borehole 54-24399. Pore-gas results show no immediate threat to groundwater from the VOC plume but do indicate the need for continued monitoring of pore gas.

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1.0 INTRODUCTION

Material Disposal Area (MDA) L (Solid Waste Management Unit [SWMU] 54-006) is located in the east-central portion of Los Alamos National Laboratory (LANL or the Laboratory) on Mesita del Buey (Figure 1.0-1), within an 1100-ft by 3000-ft (2.5-acre) fenced area known as Area L. MDA L consists of 1 inactive subsurface disposal pit (Pit A), 1 inactive subsurface treatment and disposal impoundment (Impoundment C), and 12 inactive disposal shafts (Shafts 2–12 and 18). The Area L landfill consists of 2 inactive surface impoundments (B and D) and 22 inactive disposal shafts (Shafts 1, 13–17, and 19–34). The Area L landfill units received hazardous wastes after the effective date of Resource Conservation and Recovery Act (RCRA) and are hazardous waste disposal units subject to RCRA closure requirements rather than Consent Order requirements. Shafts 36 and 37 are the former lead-stringer shafts that are also undergoing RCRA closure and are not part of SWMU 54-006.

Area L is relatively flat, and most of the surface overlying MDA L is paved with asphalt to house ongoing waste management activities, including the storage of chemical, hazardous, and mixed low-level wastes managed within container-storage units. During the late 1950s, the Laboratory, with the approval of the U.S. Atomic Energy Commission and upon recommendation of the U.S. Geological Survey, selected Mesita del Buey within Technical Area 54 (TA-54) for underground disposal of Laboratory-generated waste (Rogers 1977, 005707; Rogers 1977, 005708, p. G-1). Since then, the main waste storage and disposal facilities for the Laboratory have been located at TA-54. MDA L is one of four inactive disposal areas on Mesita del Buey, which is bounded by Pajarito Canyon to the south and Cañada del Buey to the north.

MDA L was used for disposal of nonradiological liquid chemical waste, including containerized and uncontainerized liquid wastes, bulk quantities of treated aqueous waste, batch-treated salt solutions, electroplating wastes (including precipitated heavy metals), and small-batch quantities of treated lithium hydride. MDA L operated from the early 1960s until it was decommissioned (i.e., removed from service) in 1985.

One pit, 3 impoundments, and 34 shafts were excavated into the overlying soil and unit 2 of the Tshirege Member of the Bandelier Tuff at MDA L. The site features are shown in Figure 1.0-2. The subsurface disposal units range in depth from 10 ft to 65 ft below the original ground surface. The regional aquifer is estimated to be at a depth of approximately 930 ft below ground surface (bgs), based on data from other wells at the Laboratory and the predictions of the hydrogeologic conceptual model for the Pajarito Plateau (LANL 1998, 059599). The pit, impoundments, and shafts were unlined. The bottoms of the pit and impoundments were level, so liquid could spread over the entire surface area to facilitate evaporation. After they were decommissioned, the pit and impoundments were filled and covered with clean crushed consolidated tuff. The bottom of each shaft was covered with 3 ft of crushed tuff to seal cracks and joints, and a steel cap was placed over the opening. When the shafts were filled to within approximately 3 ft of the surface, they were capped with a 3-ft concrete plug (LANL 1992, 007669, p. 5-108).

Because sampling methods and resulting data quality have changed substantially over the years, pore-gas data collected before 1996 were used only semiquantitatively in the MDA L investigation work plan (LANL 2004, 087624). Data collected from 1997 to the present have been subjected to rigorous quality assurance/quality control (QA/QC) procedures. The pore-gas monitoring data for MDA L indicate that 1,1,1-trichloroethane (TCA) is the predominant volatile organic compound (VOC) detected, followed by trichloroethene (TCE). The VOCs are the primary chemicals of potential concern (COPCs) in the subsurface at MDA L. Information on radioactive materials and radionuclides, including the results of sampling and analysis of radioactive constituents, is voluntarily provided to the New Mexico Environment Department (NMED) in accordance with U.S. Department of Energy policy.

In 1994 and 1995, two deep-angled boreholes, designated as 54-01015 and 54-01016, were drilled from the adjacent canyon slope northeast of MDA L within Cañada del Buey to investigate the possible presence of vapor-phase contaminants at depth beneath MDA L (Figure 1.0-2). These boreholes were drilled to depths of 530 ft and 600 ft bgs, respectively, beneath MDA L by air-rotary installation of 8-in.-diameter STRATEX casing to the bottom of each borehole. Borehole 54-01015 was drilled to intersect the region below the closed disposal shafts located in the western part of MDA L. Borehole 54-01016 was drilled to intersect the region below the closed pit, impoundments, and shafts located in the eastern part of MDA L. The boreholes were selectively cored for approximately 10 ft within every 40-ft interval below a depth of 260 ft bgs. From discontinuous core, 22 samples were collected and analyzed at an off-site contract laboratory for VOCs and tritium. Following the installation of Solinst multiport vapor- and lysimeter-coupled systems in each borehole, the STRATEX casing was withdrawn while annular well completion materials were emplaced to complete the borehole for vapor monitoring. Both boreholes are maintained as vapor-monitoring wells.

Results of geologic logging were recorded in the borehole logs. Saturation was not encountered in any of the Phase I RCRA facility investigation (RFI) boreholes at MDA L; however, moist cuttings and core were observed in RFI boreholes 54-01015 and 54-01016. Borehole logs document moist to wet cuttings and core at depths of 343 ft bgs (Puye Formation paleosol), 449 ft bgs (basalt), and 475 ft bgs (basalt) in borehole 54-01015. Similarly, the borehole log for borehole 54-01016 shows moist cuttings and core at a depth of 219 ft bgs (Cerro Toledo interval) and at multiple depths within the basalt (312, 370, 371, 397, 459, 479, 497, and 510 ft bgs) beneath MDA L. Lysimeters were installed to collect both pore vapor and water where moist to wet conditions were found at two depths (308.3 and 461.4 ft bgs) in borehole 54-01015 and at four depths (162.3, 274.7, 414.3, and 517.6 ft bgs) in borehole 54-01016. In April 1996, initial attempts to collect water samples during pore-gas monitoring yielded approximately 0.5 to 1 mL for the samples from borehole 54-01015 and no water for the samples from borehole 54-01016 (Lowry 1996, 081612). During quarterly pore-gas monitoring conducted from 1996 to 2005, the ports in target zones of potential perched water were sampled for pore gas and water; however, no water was recovered during this period.

Analyses of the pore-gas monitoring data indicate that a subsurface vapor-phase VOC plume is present. The plume has two unique sources, identified as shaft field 1 through 28, referred to as the western source area, and shaft field 29 through 34, referred to as the eastern source area. The dominant VOC in the plume is TCA.

Since 1985, pore-gas monitoring has been required at MDA L. A summary of monitoring at MDA L follows:

- In 1985, the Laboratory received a Compliance Order from NMED stipulating, among other requirements, characterization of pore gas at Areas G and L. The Laboratory installed seven vapor-monitoring wells to characterize pore gas.
- From 1986 to 1990, the Laboratory voluntarily installed 22 additional vapor-monitoring wells to characterize the VOC plumes at Areas G and L.
- In 1990, the U.S. Environmental Protection Agency (EPA) issued Module VIII of the Laboratory's Hazardous Waste Facility Permit. Module VIII included requirements for quarterly pore-gas sampling at MDAs G and L as input into the RFI.
- In 2005, the Compliance Order on Consent (the Consent Order) required pore-gas monitoring during the site investigations for all MDAs and required the submittal of a long-term pore-gas monitoring plan for each MDA. Section XI.D of the Consent Order requires the reporting of periodic pore-gas monitoring data in a quarterly periodic monitoring report.

- In September 2005, the Laboratory submitted a proposed long-term monitoring plan for pore gas in Appendix I of the MDA L investigation report (LANL 2005, 092591).
- During June and July 2006, a soil-vapor extraction pilot study was conducted at MDA L. An estimated 800 lb of VOCs was removed from the eastern and western source areas (LANL 2006, 094152).
- During February and March 2007, three boreholes were drilled into basalt at Area L, core from each borehole was analyzed, and the boreholes were constructed as vapor-monitoring wells to characterize the VOC plume.
- On July 12, 2007, NMED approved the MDA L investigation report and required the Laboratory to produce an interim vapor-monitoring plan (LANL 2007, 098712; NMED 2007, 098409).
- On August 29, 2007, the Laboratory submitted the "Interim Subsurface Vapor-Monitoring Plan for Material Disposal Area L at Technical Area 54" to NMED.
- On September 25, 2007, NMED issued a notice of disapproval for the interim vapor-monitoring plan (NMED 2007, 098559).
- On October 30, 2007, the Laboratory submitted the "Interim Subsurface Vapor-Monitoring Plan for Material Disposal Area L at Technical Area 54, Revision 1" (hereafter, the interim vapor-monitoring plan) (LANL 2007, 099372), which identified monitoring and sampling requirements.
- On November 8, 2007, NMED approved with modifications the revised interim vapor-monitoring plan (NMED 2007, 098999) and identified sampling requirements in addition to those proposed in the October 30, 2007, submittal (LANL 2007, 099372).

Subsurface vapor field screening and sampling are being performed by personnel from the Laboratory's Environmental Programs–Waste and Environmental Services Division to characterize trends of VOCs in subsurface vapor. Analytical laboratory results and monitoring data for first quarter of fiscal year (FY) 2008 are presented in this report. The monitoring locations at SWMU 54-006 associated with MDA L are shown in Figure 1.0-2.

2.0 SCOPE OF ACTIVITIES

The sampling program was implemented consistent with sampling presented in the Periodic Monitoring Report for Vapor Sampling Activities at Material Disposal Area L, Solid Waste Management Unit 54-006, at Technical Area 54, for Fiscal Year 2007. The approval with modifications to the October 2007 Interim Subsurface Vapor-Monitoring Plan for Material Disposal Area L at Technical Area 54, Revision 1, received November 8, 2007, requires the Laboratory to conduct sampling at 15 additional locations and collect approximately 45 additional samples. Because this approval with modification was received halfway through the first quarter sampling event, the Laboratory took the opportunity to transition to the approved plan and monitored pore gas from all pore depths and collected a portion of these additional samples.

During the first quarter of FY2008, borehole field screening and sampling were conducted from December 12 to 21, 2007. The field screening and samples collected at MDA L during the first quarter of FY2008 are presented in Table 2.0-1:

- Each interval was purged to ensure that formation air was being sampled in accordance with Standard Operating Procedure (SOP) 06.31, Sampling of Subatmospheric Air.

- Pore gas from each accessible instrumented interval was field screened for VOCs using a Brüel and Kjær (B&K) Type 1302 multigas photoacoustic analyzer and field screened for carbon dioxide using a Landtec GEM-500.
- Vapor samples were collected from selected intervals in SUMMA canisters for laboratory analyses of VOCs using EPA Method TO-15.
- Tritium samples were collected with tritium columns for laboratory analysis using EPA Method 906.0.
- A total of 127 ports at 35 boreholes were field screened for VOCs.
- A total of 41 ports at 11 boreholes were sampled for VOCs.
- A total of 19 ports at 3 boreholes were sampled for tritium.

No investigation-derived waste was generated during quarterly monitoring activities.

3.0 REGULATORY CRITERIA

The Consent Order does not identify any cleanup standards, risk-based screening levels, risk-based cleanup goals, or other regulatory criteria for pore gas at MDA L. Therefore, an analysis was conducted to evaluate the potential for contamination of groundwater by VOCs in pore gas using groundwater cleanup levels provided in the Consent Order. The analysis evaluated the water concentration that would be in equilibrium with the maximum concentrations of VOCs detected at MDA L during the most recent round of monitoring.

If the predicted concentration of a particular VOC in groundwater was less than the groundwater cleanup level, then the groundwater cleanup levels would not be exceeded. The screening-level analysis for MDA L is discussed in section 5.0.

4.0 FIELD-SCREENING SUMMARY

Field screening at accessible instrumented ports during first quarter of FY2008 was conducted with a B&K Type 1302 multigas photoacoustic analyzer. The B&K is calibrated for analysis of four organic chemicals: trichlorofluoromethane (Freon 11), tetrachloroethene (PCE), TCA, and TCE. The field-screening results will be presented in the annual "Periodic Monitoring Report for Vapor-Sampling Activities Conducted at Technical Area 54, Material Disposal Area L, for Fiscal Year 2008."

5.0 ANALYTICAL DATA RESULTS

Validated analytical results for VOCs in pore gas are produced from laboratory analyses of vapor collected in SUMMA canisters and analyzed for VOCs using EPA Method TO-15. Validated analytical results for tritium are produced from laboratory analysis of subsurface vapor collected in tritium columns and analyzed for tritium using EPA Method 906.0. During first quarter FY2008, subsurface vapor sampling was conducted from December 19 to 21, 2007, at MDA L.

VOC analytical data from the first quarter FY2008 sampling event are presented in Table 5.0-1. Table 5.0-1 also compares FY2007 results to first quarter FY2008 results. Data from FY2007 are the result of one annual sampling event conducted in FY2007. Tritium analytical data from the first quarter FY2008 sampling event are presented in Table 5.0-2.

5.1 Summary of Pore-Gas VOC Results

Twenty-one VOCs were detected at least once in vapor samples collected from MDA L. TCA was the organic chemical detected with the greatest concentration, 3,400,000 µg/m^3, in borehole 54-27642 at 27.5 to 32.5 ft bgs during first quarter FY2008. The analytes 1,1-dichloroethene, TCE, and TCA were detected in 42 of 42 SUMMA samples analyzed. Tritium was detected in 17 of the 19 samples analyzed, and their concentrations ranged from 623 pCi/L to 172,893 pCi/L.

5.2 Pore-Gas VOC Concentrations with Sampling Depth from Surface

Concentrations of VOCs detected in pore gas using EPA Method TO-15 generally reach maximum concentration between 65 and 120 ft bgs near the depths of the base of the shafts and pit, then decrease to borehole TD. Table 2.0-1 reports on boreholes with samples collected in SUMMA canisters at multiple depths during first quarter FY2008, and the analytical data from these samples are presented in Table 5.0-1. The deepest geologic unit monitored is the Otowi Member (Qbo), which was monitored in the deepest sample intervals at three locations (54-27641, 54-27642, and 54-27643). At locations 54-27641 and 54-27642, the minimum detected concentrations of all VOCs were in the samples collected from the Qbo interval. Similarly, at location 54-27643, the minimum detected concentrations of all but three VOCs (dichlorodifluoromethane, hexane, and methylene chloride) were in the samples from the Qbo interval. The concentrations of these three VOCs detected in the sample from the Qbo interval were all less than the maximum detected concentrations at this location.

5.3 Contaminant Partitioning Overview

Under moist soil conditions and where no nonaqueous phase liquid is present, contaminant partitioning in the vadose zone can be described by the following equation (Suthersan 1997, 093755):

$$C_T = P_b C_{Soil} + w C_{water} + \alpha C_{air} \qquad \textbf{Equation 5-1}$$

Where C_T = total quantity of contaminant per unit soil volume (µg/m^3)
C_{Soil} = adsorbed chemical concentration (µg/kg)
C_{water} = dissolved chemical concentration (µg/L)
C_{air} = vapor concentration (µg/m^3)
P_b = soil bulk density (kg/m^3)
w = volumetric water content (L/m^3)
α = volumetric air content – w (volumetric water content) (m$^3_{air}$/m$^3_{soil}$)

The equilibrium relationship between vapor concentration and the associated pore-water concentration is given by Henry's law:

$$C_{air} = H' \cdot C_{water} \qquad \textbf{Equation 5-2}$$

Where C_{air} is the volumetric concentration of contaminant in air, C_{water} is the volumetric concentration of contaminant in water, and H' is the dimensionless Henry's law constant.

The relationship between equilibrium dissolved concentration and adsorbed concentration is given by

$$C_{Soil} = K_d \cdot C_{water} \qquad \textbf{Equation 5-3}$$

Where C_{Soil} = adsorbed chemical concentration (µg/kg)

C_{water} = dissolved chemical concentration (µg/L)

K_d = adsorption coefficient (L/kg)

Where $K_d = f_{oc} \cdot K_{oc}$ and **Equation 5-4**

f_{oc} = percentage of fraction of organic carbon in soils (mg/mg)

K_{oc} = organic carbon partitioning coefficient (L/kg)

Environmental laboratory analyses of solids and soils are reported on a dry weight basis. As a result, calculated volumetric concentrations of C_T that include soils and tuff must be divided by the dry bulk density to match the "dry weight" reporting basis of laboratory results.

5.4 VOC Vapor-Phase Partitioning to Water

VOC results were screened to evaluate whether concentrations of VOCs in the plume would be of concern as a potential source of groundwater contamination. Because no screening levels exist for pore gas that address the potential for groundwater contamination, the screening evaluation was based on groundwater cleanup levels contained in the Consent Order and on Henry's law constants that describe the equilibrium relationship between vapor and water concentrations. The source of the Henry's law constants was the NMED soil-screening level technical background document (NMED 2006, 092513). The following dimensionless form of Henry's law constant was used:

$$H' = \frac{C_{air}}{C_{water}} \qquad \textbf{Equation 5-5}$$

where C_{air} is the volumetric concentration of contaminant in air and C_{water} is the volumetric concentration of contaminant in water. Equation 5-2 can be used to calculate the following screening value (SV):

$$SV = \frac{C_{air}}{1{,}000 \times H' \times SL} \qquad \textbf{Equation 5-6}$$

where C_{air} is the concentration of VOC in the pore-gas sample (µg/m^3), H' is the dimensionless Henry's law constant, SL is the screening level (µg/L), and 1000 is a conversion factor from L to m^3. The SLs are groundwater cleanup levels specified in the Consent Order. These levels are the EPA maximum contaminant level (MCL) or the New Mexico Water Quality Control Commission (NMWQCC) groundwater standard, whichever is lower. As specified in the Consent Order, if no MCL or NMWQCC standard exists, the EPA Region 6 human health medium-specific SL for tap water is used. The numerator in Equation 5-6 is the actual concentration of VOC in pore gas, and the denominator represents the concentration in pore gas needed to exceed the SL. Therefore, if the SV is less than 1, the concentration of VOC in pore gas will not be sufficiently high to cause the water SL to be exceeded, even if the VOC plume were in contact with groundwater.

Equation 5-6 was used to screen the concentrations of VOCs detected in pore-gas samples from EPA Method TO-15 analyses at MDA L during first quarter FY2008. As shown in Table 5.4-1, 294 detected sample concentrations of 10 VOCs resulted in SVs greater than 1. The SVs of detected VOCs ranged from 0.00000197 to 2090. Table 5.4-2 summarizes the 10 VOCs whose SVs are greater than 1, including the maximum SV and the depth interval of the maximum SV. The maximum SVs were generally detected at shallower depth intervals.

6.0 SUMMARY

The purpose of the quarterly field-screening and sampling activities at MDA L is to evaluate concentration trends in VOCs over time and over distance from known VOC source areas. The results from first quarter FY2008 may be summarized as follows.

- The VOC concentration trends at MDA L are consistent with a diffusive plume.
- The VOC concentrations increase from ground surface to the base of the shafts and pit where VOCs were disposed of and then decrease to borehole TD.
- The VOC concentrations in the central portion of each source area are above screening concentrations based on groundwater cleanup standards.

7.0 REFERENCES AND DATA SOURCES

7.1 References

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

Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau; the U.S. Department of Energy–Los Alamos Site Office; EPA, Region 6; and the Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.

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LANL (Los Alamos National Laboratory), October 2007. "Interim Subsurface Vapor-Monitoring Plan for Material Disposal Area L at Technical Area 54, Revision 1," Los Alamos National Laboratory document LA-UR-07-7040, Los Alamos, New Mexico. (LANL 2007, 099372)

Lowry, W.B., May 29, 1996. "[Water Sampling Activity at Wells 54-015 and 54-016 on April 26, 1996]," Science & Engineering Associates, Inc., letter to R. Gilkeson (ERM/Golder) from W.B. Lowry (SEA), Santa Fe, New Mexico. (Lowry 1996, 081612)

NMED (New Mexico Environment Department), June 2006. "Technical Background Document for Development of Soil Screening Levels, Revision 4.0, Volume 1, Tier 1: Soil Screening Guidance Technical Background Document," New Mexico Environment Department, Hazardous Waste Bureau and Ground Water Quality Bureau Voluntary Remediation Program, Santa Fe, New Mexico. (NMED 2006, 092513)

NMED (New Mexico Environment Department), July 18, 2007. "Approval with Direction for the 'Investigation Report for Material Disposal Area L, Solid Waste Management Unit 54-006, at Technical Area 54' and 'Addendum to the Investigation Report for Material Disposal Area L, Solid Waste Management Unit 54-006, at Technical Area 54'," New Mexico Environment Department letter to D. Gregory (DOE LASO) and D. McInroy (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2007, 098409)

NMED (New Mexico Environment Department), September 25, 2007. "Notice of Disapproval for the Interim Subsurface Vapor-Monitoring Plan for Material Disposal Area (MDA) L, Solid Waste Management Unit 54-006, at Technical Area 54," New Mexico Environment Department letter to D. Gregory (DOE-LASO) and D. McInroy (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2007, 098559)

NMED (New Mexico Environment Department), November 8, 2007. "Approval with Modifications for the Interim Subsurface Vapor-Monitoring Plan for Material Disposal Area (MDA) L, Solid Waste Management Unit 54-006, at Technical Area 54, Revision 1," New Mexico Environment Department letter to D. Gregory (DOE-LASO) and D. McInroy (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2007, 098999)

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7.2 Figure Data Sources

Data sources used in original figures created for this report are described below and identified by legend title.

Legend Item	Data Source
Disposal pit/impoundment	Waste Storage Features; Los Alamos National Laboratory, Environment and Remediation Support Services Division, GIS/Geotechnical Services Group, EP2007-0032; 1:2,500 Scale Data; 13 April 2007.
Disposal shaft	Waste Storage Features; Los Alamos National Laboratory, Environment and Remediation Support Services Division, GIS/Geotechnical Services Group, EP2007-0032; 1:2,500 Scale Data; 13 April 2007.
Elevation contour	Hypsography, 10, 20, & 100 Foot Contour Intervals; Los Alamos National Laboratory, ENV Environmental Remediation and Surveillance Program; 1991.
Fence	Security and Industrial Fences and Gates; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 10 September 2007.
LANL boundary	LANL Areas Used and Occupied; Los Alamos National Laboratory, Site Planning & Project Initiation Group, Infrastructure Planning Division; 19 September 2007.
Material disposal area	Materials Disposal Areas; Los Alamos National Laboratory, ENV Environmental Remediation and Surveillance Program; ER2004-0221; 1:2,500 Scale Data; 23 April 2004.
Paved road	Paved Road Arcs; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 10 September 2007.
Structure	Structures; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 10 September 2007.
TA boundary	Technical Area Boundaries; Los Alamos National Laboratory, Site Planning & Project Initiation Group, Infrastructure Planning Division; 19 September 2007.
Unpaved road	Dirt Road Arcs; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 10 September 2007.
Vapor monitoring well	Point Feature Locations of the Environmental Restoration Project Database; Los Alamos National Laboratory, Environment and Remediation Support Services Division, EP2007-0754; 30 November 2007.

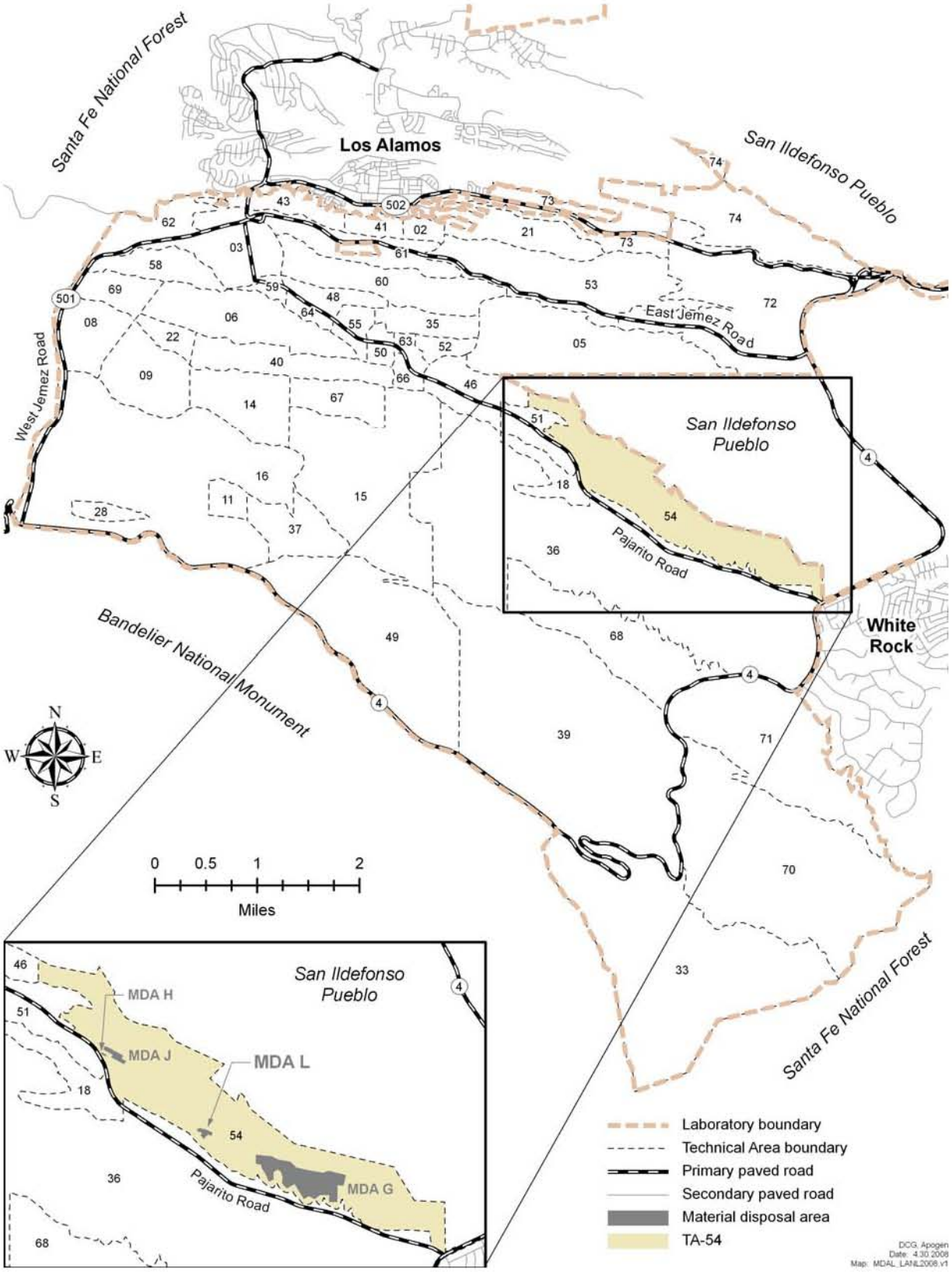

Figure 1.0-1 Location of MDA L in TA-54

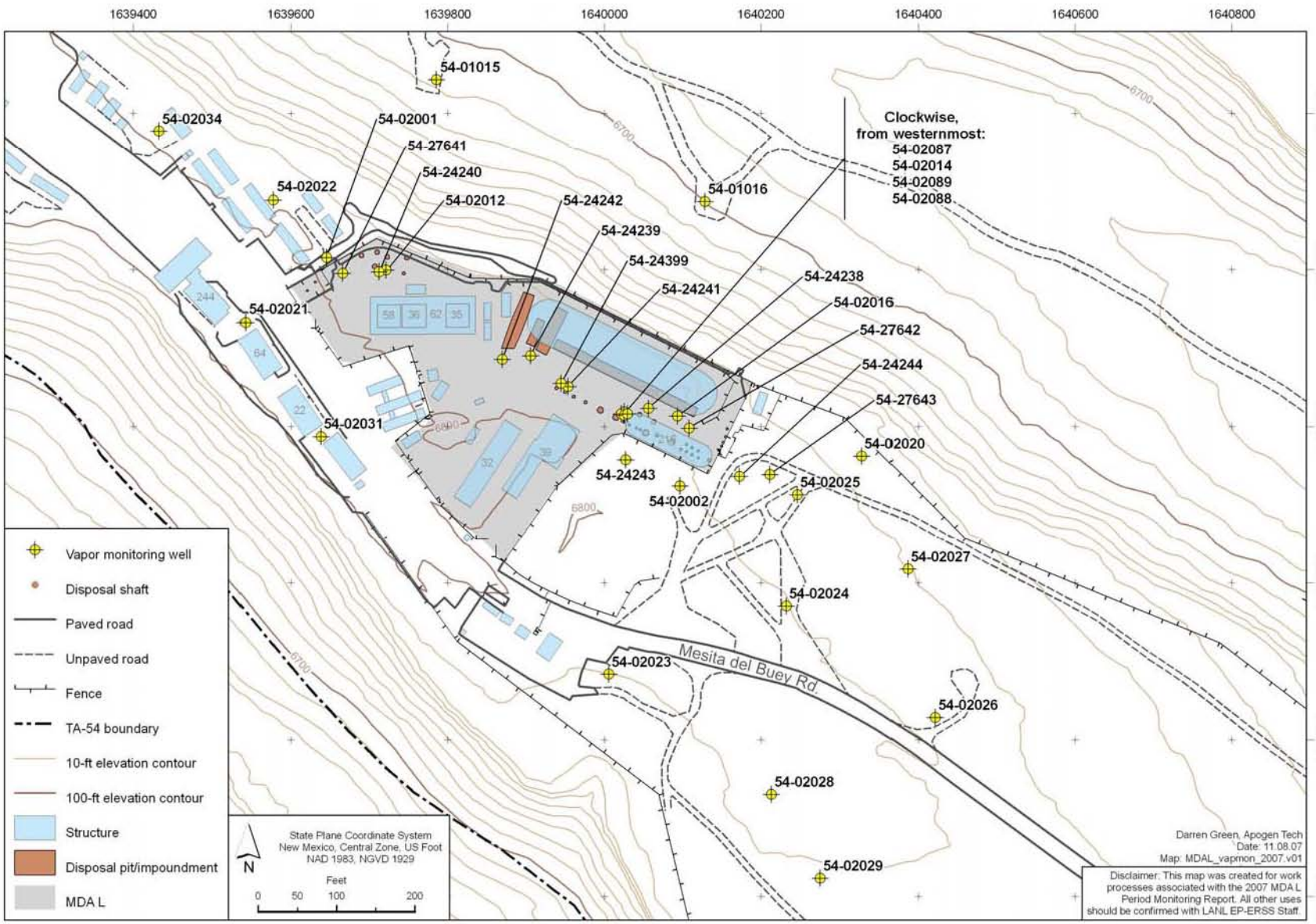

Figure 1.0-2 SWMU 54-006 pore-gas monitoring location

Table 2.0-1
Field Screening and Samples Collected at MDA L First Quarter FY2008

Location ID	Depth (ft)	Field Screening	VOC Collection	Tritium Collection
54-24238	44–44	12/18/2007	NR[a]	NR
54-24238	64–64	12/18/2007	—[b]	—
54-24238	84–84	12/18/2007	12/21/2007	—
54-24239	25–25	12/12/2007	12/21/2007	—
54-24239	50–50	12/12/2007	NR	NR
54-24239	75–75	12/12/2007	—	—
54-24239	99.5–99.5	12/12/2007	12/21/2007	—
54-24240	28–28	12/12/2007	12/21/2007	—
54-24240	53–53	12/12/2007	NR	NR
54-24240	78–78	12/12/2007	—	—
54-24240	103–103	12/12/2007	12/21/2007	—
54-24240	128–128	12/12/2007	12/21/2007	—
54-24240	153–153	12/12/2007	12/21/2007	—
54-24241	73–73	12/18/2007	—	—
54-24241	93–93	12/18/2007	12/21/2007	—
54-24241	113–113	12/18/2007	12/21/2007	—
54-24241	133–133	12/18/2007	NR	NR
54-24241	153–153	12/18/2007	NR	NR
54-24241	173–173	12/18/2007	NR	NR
54-24241	193–193	12/18/2007	12/21/2007	—
54-24242	25–25	12/12/2007	12/21/2007	—
54-24242	50–50	12/12/2007	NR	NR
54-24242	75–75	12/12/2007	—	—
54-24242	100–100	12/12/2007	12/21/2007	—
54-24242	110.5–110.5	12/12/2007	NR	NR
54-24243	25–25	12/17/2007	12/21/2007	—
54-24243	50–50	12/17/2007	NR	NR
54-24243	75–75	12/17/2007	—	—
54-24243	100–100	12/17/2007	12/21/2007	—
54-24243	125–125	12/17/2007	12/21/2007	—
54-24244	25–25	—	—	—
54-24244	75–75	—	—	—
54-24244	118.5–118.5	—	—	—
54-24399	550–608	—	—	—
54-27641	30–34	12/12/2007	12/21/2007	12/19/2007
54-27641	80–84	12/12/2007	12/21/2007	12/19/2007

Table 2.0-1 (continued)

Location ID	Depth (ft)	Field Screening	VOC Collection	Tritium Collection
54-27641	110–114	12/12/2007	12/21/2007	12/19/2007
54-27641	180–185	12/12/2007	12/21/2007	12/19/2007
54-27641	230–235	12/12/2007	12/21/2007	12/19/2007
54-27641	269–273	12/12/2007	12/21/2007	12/19/2007
54-27641	330–335	12/12/2007	12/21/2007	12/19/2007
54-27642	27.5–32.5	12/12/2007	12/21/2007	12/21/2007
54-27642	72.5–77.5	12/12/2007	12/21/2007	12/21/2007
54-27642	113.5–118.5	12/12/2007	12/21/2007	12/21/2007
54-27642	175–175	12/12/2007	—	—
54-27642	232–237.5	12/12/2007	12/21/2007	12/21/2007
54-27642	272–277.5	12/12/2007	12/21/2007	12/21/2007
54-27642	335–341	12/12/2007	12/21/2007	12/21/2007
54-27643	27.5–32.5	12/17/2007	12/21/2007	12/20/2007
54-27643	71.5–76.5	12/17/2007	12/21/2007	12/20/2007
54-27643	114.5–119.5	12/17/2007	12/21/2007	12/20/2007
54-27643	167–167	12/17/2007	—	—
54-27643	232.5–237.5	12/17/2007	12/21/2007	12/20/2007
54-27643	272.5–278.5	12/17/2007	12/21/2007	12/20/2007
54-27643	351–356.5	12/17/2007	12/21/2007	12/20/2007
Additional samples required per NMED's approval with modifications				
54-02001	20–20	12/20/2007	—	—
54-02001	40–40	12/20/2007	12/20/2007	—
54-02001	60–60	Port blocked	—	—
54-02001	80–80	12/20/2007	—	—
54-02001	100–100	12/20/2007	12/20/2007	—
54-02001	120–120	12/20/2007	12/20/2007	—
54-02001	140–140	12/20/2007	—	—
54-02001	160–160	12/20/2007	—	—
54-02001	180–180	Port blocked	—	—
54-02001	200–200	12/20/2007	12/20/2007	—
54-02002	20–20	Port blocked	—	—
54-02002	40–40	12/17/2007	—	—
54-02002	60–60	12/17/2007	—	—
54-02002	80–80	12/17/2007	—	—
54-02002	100–100	12/17/2007	—	—
54-02002	120–120	12/17/2007	—	—
54-02002	140-140	12/17/2007	—	—

Table 2.0-1 (continued)

Location ID	Depth (ft)	Field Screening	VOC Collection	Tritium Collection
54-02002	157–157	12/17/2007	—	—
54-02002	180–180	12/17/2007	—	—
54-02002	200–200	12/17/2007	—	—
54-02016	18–18	Port blocked	—	—
54-02016	31–31	12/18/2007	—	—
54-02016	82–82	Port blocked	—	—
54-02021	20–20	12/13/2007	—	—
54-02021	40–40	Port blocked	—	—
54-02021	60–60	12/13/2007	—	—
54-02021	80–80	Port blocked	—	—
54-02021	100–100	12/13/2007	—	—
54-02021	120–120	Port blocked	—	—
54-02021	140–140	12/13/2007	—	—
54-02021	160–160	12/13/2007	—	—
54-02021	180–180	12/13/2007	—	—
54-02021	198–198	12/13/2007	—	—
54-02022	20–20	Port blocked	—	—
54-02022	40–40	12/21/2007	12/21/2007	—
54-02022	60–60	12/21/2007	—	—
54-02022	80–80	12/21/2007	—	—
54-02022	100–100	12/21/2007	12/21/2007	—
54-02022	120–120	12/21/2007	12/21/2007	—
54-02022	140–140	12/21/2007	—	—
54-02022	160–160	12/21/2007	—	—
54-02022	180–180	12/21/2007	—	—
54-02022	200–200	12/21/2007	12/21/2007	—
54-02023	40–40	—	—	—
54-02023	100–100	—	—	—
54-02023	120–120	—	—	—
54-02023	200–200	—	—	—
54-02024	20–20	12/17/2007	—	—
54-02024	40–40	12/17/2007	—	—
54-02024	60–60	12/17/2007	—	—
54-02024	80–80	12/17/2007	—	—
54-02024	100–100	12/17/2007	—	—
54-02024	120–120	12/17/2007	—	—
54-02024	140–140	12/17/2007	—	—

Table 2.0-1 (continued)

Location ID	Depth (ft)	Field Screening	VOC Collection	Tritium Collection
54-02024	160–160	12/17/2007	—	—
54-02024	180–180	12/17/2007	—	—
54-02024	200–200	12/17/2007	—	—
54-02025	20–20	12/17/2007	—	—
54-02025	60–60	12/17/2007	—	—
54-02025	100–100	12/17/2007	—	—
54-02025	160–160	12/17/2007	—	—
54-02025	190–190	12/17/2007	—	—
54-02026	20–20	—	—	—
54-02026	100–100	—	—	—
54-02026	215–215	—	—	—
54-02027	20–20	12/17/2007	—	—
54-02027	60–60	12/17/2007	—	—
54-02027	100–100	12/17/2007	—	—
54-02027	160–160	12/17/2007	—	—
54-02027	200–200	12/17/2007	—	—
54-02027	220–220	12/17/2007	—	—
54-02027	250–250	12/17/2007	—	—
54-02028	20–20	—	—	—
54-02028	100–100	—	—	—
54-02028	250–250	—	—	—
54-02031	20–20	12/18/2007	—	—
54-02031	60–60	12/18/2007	—	—
54-02031	100–100	12/18/2007	—	—
54-02031	160–160	12/18/2007	—	—
54-02031	200–200	12/18/2007	—	—
54-02031	220–220	12/18/2007	—	—
54-02031	260–260	12/18/2007	—	—
54-02034	20–20	12/18/2007	—	—
54-02034	60–60	12/18/2007	—	—
54-02034	100–100	12/18/2007	—	—
54-02034	160–160	12/18/2007	—	—
54-02034	200–200	12/18/2007	—	—
54-02034	220–220	12/18/2007	—	—
54-02034	260–260	12/18/2007	—	—
54-02034	300–300	12/18/2007	—	—

Table 2.0-1 (continued)

Location ID	Depth (ft)	Field Screening	VOC Collection	Tritium Collection
54-02089	13–13	12/20/2007	—	—
54-02089	31–31	12/20/2007	—	—
54-02089	46–46	12/20/2007	—	—
54-02089	86–86	12/20/2007	—	—

[a] NR = Sample collection not required per the revised interim vapor-monitoring plan.

[b] Sample collection for borehole adjusted to 84 ft port to collect sample from deepest port in geological unit.

Table 5.0-1
Pore-Gas VOC Sampling Results at MDA L

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-02001	40–40	Dichlorodifluoromethane	—[a]	10000
54-02001	40–40	Dichloroethane[1,1-]	—	59000
54-02001	40–40	Dichloroethane[1,2-]	—	83000
54-02001	40–40	Dichloroethene[1,1-]	—	240000
54-02001	40–40	Dichloropropane[1,2-]	—	2900
54-02001	40–40	Tetrachloroethene	—	180000
54-02001	40–40	Trichloroethane[1,1,1-]	—	1300000
54-02001	40–40	Trichloroethene	—	410000
54-02001	40–40	Trichlorofluoromethane	—	8700
54-02001	100–100	Dichlorodifluoromethane	—	3300
54-02001	100–100	Dichloroethane[1,1-]	—	15000
54-02001	100–100	Dichloroethane[1,2-]	—	27000
54-02001	100–100	Dichloroethene[1,1-]	—	100000
54-02001	100–100	Dichloropropane[1,2-]	—	1400
54-02001	100–100	Tetrachloroethene	—	54000
54-02001	100–100	Trichloroethane[1,1,1-]	—	430000
54-02001	100–100	Trichloroethene	—	99000
54-02001	100–100	Trichlorofluoromethane	—	2600
54-02001	120–120	Dichlorodifluoromethane	—	5400
54-02001	120–120	Dichloroethane[1,1-]	—	28000
54-02001	120–120	Dichloroethane[1,2-]	—	52000
54-02001	120–120	Dichloroethene[1,1-]	—	230000
54-02001	120–120	Dichloropropane[1,2-]	—	4300
54-02001	120–120	Tetrachloroethene	—	52000
54-02001	120–120	Trichloroethane[1,1,1-]	—	1100000
54-02001	120–120	Trichloroethene	—	230000
54-02001	120–120	Trichlorofluoromethane	—	4900
54-02001	200–200	Dichlorodifluoromethane	—	4200
54-02001	200–200	Dichloroethane[1,1-]	—	13000
54-02001	200–200	Dichloroethane[1,2-]	—	6000
54-02001	200–200	Dichloroethene[1,1-]	—	140000
54-02001	200–200	Dichloropropane[1,2-]	—	920
54-02001	200–200	Tetrachloroethene	—	21000
54-02001	200–200	Trichloroethane[1,1,1-]	—	550000
54-02001	200–200	Trichloroethene	—	150000
54-02001	200–200	Trichlorofluoromethane	—	4200
54-02022	40–40	Chloroform	—	1600

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-02022	40–40	Cyclohexane	—	6000(J+)
54-02022	40–40	Dichlorodifluoromethane	—	1800
54-02022	40–40	Dichloroethane[1,1-]	—	8400
54-02022	40–40	Dichloroethane[1,2-]	—	13000
54-02022	40–40	Dichloroethene[1,1-]	—	99000
54-02022	40–40	Dichloropropane[1,2-]	—	1300
54-02022	40–40	Methylene Chloride	—	740
54-02022	40–40	Tetrachloroethene	—	13000
54-02022	40–40	Trichloro-1,2,2-trifluoroethane[1,1,2-]	—	5200
54-02022	40–40	Trichloroethane[1,1,1-]	—	380000
54-02022	40–40	Trichloroethene	—	72000
54-02022	40–40	Trichlorofluoromethane	—	1600
54-02022	100–100	Chloroform	—	2200
54-02022	100–100	Cyclohexane	—	8400(J+)
54-02022	100–100	Dichlorodifluoromethane	—	2300
54-02022	100–100	Dichloroethane[1,1-]	—	11000
54-02022	100–100	Dichloroethane[1,2-]	—	18000
54-02022	100–100	Dichloroethene[1,1-]	—	140000
54-02022	100–100	Dichloropropane[1,2-]	—	1700
54-02022	100–100	Methylene Chloride	—	5400
54-02022	100–100	Tetrachloroethene	—	13000
54-02022	100–100	Trichloro-1,2,2-trifluoroethane[1,1,2-]	—	6800
54-02022	100–100	Trichloroethane[1,1,1-]	—	540000
54-02022	100–100	Trichloroethene	—	100000
54-02022	100–100	Trichlorofluoromethane	—	2200
54-02022	120–120	Chloroform	—	2200
54-02022	120–120	Cyclohexane	—	8900(J+)
54-02022	120–120	Dichlorodifluoromethane	—	2400
54-02022	120–120	Dichloroethane[1,1-]	—	11000
54-02022	120–120	Dichloroethane[1,2-]	—	14000
54-02022	120–120	Dichloroethene[1,1-]	—	120000
54-02022	120–120	Dichloropropane[1,2-]	—	1500
54-02022	120–120	Methylene Chloride	—	5500
54-02022	120–120	Tetrachloroethene	—	12000
54-02022	120–120	Trichloro-1,2,2-trifluoroethane[1,1,2-]	—	4600
54-02022	120–120	Trichloroethane[1,1,1-]	—	580000
54-02022	120–120	Trichloroethene	—	110000
54-02022	120–120	Trichlorofluoromethane	—	2300
54-02022	200–200	Carbon Tetrachloride	—	620

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-02022	200–200	Chloroform	—	870
54-02022	200–200	Cyclohexane	—	3900(J+)
54-02022	200–200	Dichlorodifluoromethane	—	2500
54-02022	200–200	Dichloroethane[1,1-]	—	3600
54-02022	200–200	Dichloroethane[1,2-]	—	850
54-02022	200–200	Dichloroethene[1,1-]	—	50000
54-02022	200–200	Methylene Chloride	—	4100
54-02022	200–200	Tetrachloroethene	—	5400
54-02022	200–200	Trichloro-1,2,2-trifluoroethane[1,1,2-]	—	6500
54-02022	200–200	Trichloroethane[1,1,1-]	—	240000
54-02022	200–200	Trichloroethene	—	56000
54-02022	200–200	Trichlorofluoromethane	—	2400
54-24238	43–45	Carbon Disulfide	5500	—
54-24238	43–45	Chloroform	57000	—
54-24238	43–45	Cyclohexane	66000	—
54-24238	43–45	Dichloroethane[1,1-]	72000	—
54-24238	43–45	Dichloroethane[1,2-]	64000	—
54-24238	43–45	Dichloroethene[1,1-]	160000	—
54-24238	43–45	Dichloropropane[1,2-]	430000	—
54-24238	43–45	Methylene Chloride	25000	—
54-24238	43–45	Tetrachloroethene	92000	—
54-24238	43–45	Trichloro-1,2,2-trifluoroethane[1,1,2-]	1000000	—
54-24238	43–45	Trichloroethane[1,1,1-]	3600000	—
54-24238	43–45	Trichloroethene	840000	—
54-24238	43–45	Trichlorofluoromethane	34000	—
54-24238	63–65	Chloroform	58000	—
54-24238	63–65	Cyclohexane	69000	—
54-24238	63–65	Dichloroethane[1,1-]	68000	—
54-24238	63–65	Dichloroethane[1,2-]	72000	—
54-24238	63–65	Dichloroethene[1,1-]	130000	—
54-24238	63–65	Dichloropropane[1,2-]	510000	—
54-24238	63–65	Methylene Chloride	300000	—
54-24238	63–65	Tetrachloroethene	60000	—
54-24238	63–65	Tetrahydrofuran	14000	—
54-24238	63–65	Trichloro-1,2,2-trifluoroethane[1,1,2-]	820000	—
54-24238	63–65	Trichloroethane[1,1,1-]	3500000	—
54-24238	63–65	Trichloroethene	760000	—
54-24238	63–65	Trichlorofluoromethane	43000	—
54-24238	83–85	Chloroform	55000	35000

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-24238	83–85	Cyclohexane	60000	—
54-24238	83–85	Dichloroethane[1,1-]	58000	35000
54-24238	83–85	Dichloroethane[1,2-]	68000	37000
54-24238	83–85	Dichloroethene[1,1-]	130000	68000
54-24238	83–85	Dichloropropane[1,2-]	430000	240000
54-24238	83–85	Methylene Chloride	120000	ND[b]
54-24238	83–85	Tetrachloroethene	56000	51000
54-24238	83–85	Tetrahydrofuran	14000	—
54-24238	83–85	Trichloro-1,2,2-trifluoroethane[1,1,2-]	700000	480000
54-24238	83–85	Trichloroethane[1,1,1-]	3300000	2100000
54-24238	83–85	Trichloroethene	680000	510000
54-24238	83–85	Trichlorofluoromethane	42000	23000
54-24239	24–26	Carbon Tetrachloride	4800	4300
54-24239	24–26	Chloroform	20000	14000
54-24239	24–26	Cyclohexane	12000	7400(J+)
54-24239	24–26	Dichlorodifluoromethane	ND	1000
54-24239	24–26	Dichloroethane[1,1-]	16000	13000
54-24239	24–26	Dichloroethane[1,2-]	7800	5400
54-24239	24–26	Dichloroethene[1,1-]	38000	94000
54-24239	24–26	Dichloropropane[1,2-]	9400	7400
54-24239	24–26	Tetrachloroethene	280000	520000
54-24239	24–26	Trichloro-1,2,2-trifluoroethane[1,1,2-]	94000	45000
54-24239	24–26	Trichloroethane[1,1,1-]	860000	500000
54-24239	24–26	Trichloroethene	220000	210000
54-24239	24–26	Trichlorofluoromethane	6500	4400
54-24239	74–76	Acetone	8800	—
54-24239	74–76	Carbon Disulfide	4400	—
54-24239	74–76	Carbon Tetrachloride	5300	—
54-24239	74–76	Chloroform	22000	—
54-24239	74–76	Cyclohexane	19000	—
54-24239	74–76	Dichloroethane[1,1-]	20000	—
54-24239	74–76	Dichloroethane[1,2-]	14000	—
54-24239	74–76	Dichloroethene[1,1-]	54000	—
54-24239	74–76	Dichloropropane[1,2-]	12000	—
54-24239	74–76	Methylene Chloride	3400	—
54-24239	74–76	Tetrachloroethene	220000	—
54-24239	74–76	Trichloro-1,2,2-trifluoroethane[1,1,2-]	110000	—
54-24239	74–76	Trichloroethane[1,1,1-]	1100000	—
54-24239	74–76	Trichloroethene	250000	—

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-24239	74–76	Trichlorofluoromethane	11000	—
54-24239	98.5–100.5	Acetone	10000	ND
54-24239	98.5–100.5	Benzene	ND	770
54-24239	98.5–100.5	Carbon Disulfide	4300	ND
54-24239	98.5–100.5	Carbon Tetrachloride	ND	6100
54-24239	98.5–100.5	Chloroform	23000	20000
54-24239	98.5–100.5	Cyclohexane	20000	11000(J+)
54-24239	98.5–100.5	Dichlorodifluoromethane	ND	1700
54-24239	98.5–100.5	Dichloroethane[1,1-]	22000	18000
54-24239	98.5–100.5	Dichloroethane[1,2-]	15000	11000
54-24239	98.5–100.5	Dichloroethene[1,1-]	58000	140000
54-24239	98.5–100.5	Dichloropropane[1,2-]	9800	11000
54-24239	98.5–100.5	Methylene Chloride	4200	ND
54-24239	98.5–100.5	Propanol[2-]	19000	ND
54-24239	98.5–100.5	Tetrachloroethene	220000	580000
54-24239	98.5–100.5	Toluene	4500	ND
54-24239	98.5–100.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	120000	75000
54-24239	98.5–100.5	Trichloroethane[1,1,1-]	1100000	770000
54-24239	98.5–100.5	Trichloroethene	270000	270000
54-24239	98.5–100.5	Trichlorofluoromethane	12000	7700
54-24240	27–29	Benzene	ND	1900
54-24240	27–29	Carbon Tetrachloride	ND	5600
54-24240	27–29	Chloroform	ND	15000
54-24240	27–29	Cyclohexane	79000	33000(J+)
54-24240	27–29	Dichlorodifluoromethane	65000	39000
54-24240	27–29	Dichloroethane[1,1-]	110000	100000
54-24240	27–29	Dichloroethane[1,2-]	310000	420000
54-24240	27–29	Dichloroethene[1,1-]	77000	570000
54-24240	27–29	Dichloropropane[1,2-]	ND	3200
54-24240	27–29	Methylene Chloride	79000	60000
54-24240	27–29	Tetrachloroethene	310000	280000
54-24240	27–29	Trichloro-1,2,2-trifluoroethane[1,1,2-]	66000	79000
54-24240	27–29	Trichloroethane[1,1,1-]	4900000	1600000
54-24240	27–29	Trichloroethene	740000	850000
54-24240	27–29	Trichlorofluoromethane	ND	32000
54-24240	52–54	Acetone	18000	—
54-24240	52–54	Carbon Disulfide	9900	—
54-24240	52–54	Chloroform	11000	—
54-24240	52–54	Cyclohexane	19000	—

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-24240	52–54	Dichlorodifluoromethane	7000	—
54-24240	52–54	Dichloroethane[1,1-]	31000	—
54-24240	52–54	Dichloroethane[1,2-]	84000	—
54-24240	52–54	Dichloroethene[1,1-]	54000	—
54-24240	52–54	Methylene Chloride	42000	—
54-24240	52–54	Tetrachloroethene	99000	—
54-24240	52–54	Trichloro-1,2,2-trifluoroethane[1,1,2-]	36000	—
54-24240	52–54	Trichloroethane[1,1,1-]	1300000	—
54-24240	52–54	Trichloroethene	280000	—
54-24240	102–104	Benzene	—	950
54-24240	102–104	Carbon Tetrachloride	—	2300
54-24240	102–104	Chloroform	—	8300
54-24240	102–104	Cyclohexane	—	16000(J+)
54-24240	102–104	Dichlorodifluoromethane	—	5400
54-24240	102–104	Dichloroethane[1,1-]	—	32000
54-24240	102–104	Dichloroethane[1,2-]	—	53000
54-24240	102–104	Dichloroethene[1,1-]	—	300000
54-24240	102–104	Dichloropropane[1,2-]	—	4200
54-24240	102–104	Hexane	—	630
54-24240	102–104	Methylene Chloride	—	18000
54-24240	102–104	Tetrachloroethene	—	73000
54-24240	102–104	Toluene	—	600
54-24240	102–104	Trichloro-1,2,2-trifluoroethane[1,1,2-]	—	38000
54-24240	102–104	Trichloroethane[1,1,1-]	—	760000
54-24240	102–104	Trichloroethene	—	270000
54-24240	102–104	Trichlorofluoromethane	—	6200
54-24240	127–129	Benzene	—	580
54-24240	127–129	Carbon Tetrachloride	—	2000
54-24240	127–129	Chloroform	—	5500
54-24240	127–129	Cyclohexane	—	14000(J+)
54-24240	127–129	Dichlorodifluoromethane	—	4000
54-24240	127–129	Dichloroethane[1,1-]	—	23000
54-24240	127–129	Dichloroethane[1,2-]	—	24000
54-24240	127–129	Dichloroethene[1,1-]	—	220000
54-24240	127–129	Dichloropropane[1,2-]	—	2800
54-24240	127–129	Methylene Chloride	—	4600
54-24240	127–129	Tetrachloroethene	—	46000
54-24240	127–129	Trichloro-1,2,2-trifluoroethane[1,1,2-]	—	33000
54-24240	127–129	Trichloroethane[1,1,1-]	—	670000

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-24240	127–129	Trichloroethene	—	230000
54-24240	127–129	Trichlorofluoromethane	—	5200
54-24240	152–154	Acetone	22000	ND
54-24240	152–154	Benzene	ND	510
54-24240	152–154	Butanone[2-]	6000	ND
54-24240	152–154	Carbon Disulfide	6200	ND
54-24240	152–154	Carbon Tetrachloride	ND	1900
54-24240	152–154	Chloroform	11000	5000
54-24240	152–154	Cyclohexane	35000	12000(J+)
54-24240	152–154	Dichlorodifluoromethane	ND	4200
54-24240	152–154	Dichloroethane[1,1-]	40000	20000
54-24240	152–154	Dichloroethane[1,2-]	59000	15000
54-24240	152–154	Dichloroethene[1,1-]	51000	240000
54-24240	152–154	Dichloropropane[1,2-]	ND	2300
54-24240	152–154	Methylene Chloride	24000	1600
54-24240	152–154	Tetrachloroethene	68000	41000
54-24240	152–154	Toluene	18000	ND
54-24240	152–154	Trichloro-1,2,2-trifluoroethane[1,1,2-]	44000	35000
54-24240	152–154	Trichloroethane[1,1,1-]	2000000	600000
54-24240	152–154	Trichloroethene	350000	210000
54-24240	152–154	Trichlorofluoromethane	ND	5200
54-24241	92–94	Chloroform	—	12000
54-24241	92–94	Dichloroethane[1,1-]	—	9200
54-24241	92–94	Dichloroethene[1,1-]	—	30000
54-24241	92–94	Tetrachloroethene	—	50000
54-24241	92–94	Trichloro-1,2,2-trifluoroethane[1,1,2-]	—	110000
54-24241	92–94	Trichloroethane[1,1,1-]	—	610000
54-24241	92–94	Trichloroethene	—	160000
54-24241	112–114	Chloroform	—	12000
54-24241	112–114	Dichloroethane[1,1-]	—	9700
54-24241	112–114	Dichloroethane[1,2-]	—	8800
54-24241	112–114	Dichloroethene[1,1-]	—	28000
54-24241	112–114	Tetrachloroethene	—	54000
54-24241	112–114	Trichloro-1,2,2-trifluoroethane[1,1,2-]	—	110000
54-24241	112–114	Trichloroethane[1,1,1-]	—	630000
54-24241	112–114	Trichloroethene	—	150000
54-24241	192–194	Chloroform	—	22000
54-24241	192–194	Dichloroethane[1,1-]	—	25000
54-24241	192–194	Dichloroethane[1,2-]	—	17000

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-24241	192–194	Dichloroethene[1,1-]	—	31000
54-24241	192–194	Tetrachloroethene	—	97000
54-24241	192–194	Trichloro-1,2,2-trifluoroethane[1,1,2-]	—	180000
54-24241	192–194	Trichloroethane[1,1,1-]	—	1300000
54-24241	192–194	Trichloroethene	—	260000
54-24242	24–26	Benzene	ND	520
54-24242	24–26	Carbon Tetrachloride	3800	3900
54-24242	24–26	Chloroform	14000	15000
54-24242	24–26	Cyclohexane	8000	9200(J+)
54-24242	24–26	Dichlorodifluoromethane	ND	1400
54-24242	24–26	Dichloroethane[1,1-]	11000	16000
54-24242	24–26	Dichloroethane[1,2-]	5000	6000
54-24242	24–26	Dichloroethene[1,1-]	22000	180000
54-24242	24–26	Dichloropropane[1,2-]	8100	8600
54-24242	24–26	Tetrachloroethene	490000	250000
54-24242	24–26	Trichloro-1,2,2-trifluoroethane[1,1,2-]	61000	77000
54-24242	24–26	Trichloroethane[1,1,1-]	560000	470000
54-24242	24–26	Trichloroethene	190000	190000
54-24242	24–26	Trichlorofluoromethane	4100	5900
54-24242	49–51	Chloroform	28000	—
54-24242	49–51	Cyclohexane	24000	—
54-24242	49–51	Dichloroethane[1,1-]	22000	—
54-24242	49–51	Dichloroethane[1,2-]	20000	—
54-24242	49–51	Dichloroethene[1,1-]	54000	—
54-24242	49–51	Dichloropropane[1,2-]	14000	—
54-24242	49–51	Methylene Chloride	14000	—
54-24242	49–51	Tetrachloroethene	400000	—
54-24242	49–51	Trichloro-1,2,2-trifluoroethane[1,1,2-]	140000	—
54-24242	49–51	Trichloroethane[1,1,1-]	1400000	—
54-24242	49–51	Trichloroethene	320000	—
54-24242	49–51	Trichlorofluoromethane	13000	—
54-24242	99–101	Benzene	—	940
54-24242	99–101	Carbon Tetrachloride	—	4400
54-24242	99–101	Chloroform	—	18000
54-24242	99–101	Cyclohexane	—	12000(J+)
54-24242	99–101	Dichlorodifluoromethane	—	2000
54-24242	99–101	Dichloroethane[1,1-]	—	17000
54-24242	99–101	Dichloroethane[1,2-]	—	10000
54-24242	99–101	Dichloroethene[1,1-]	—	220000

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-24242	99–101	Dichloropropane[1,2-]	—	8700
54-24242	99–101	Tetrachloroethene	—	230000
54-24242	99–101	Trichloro-1,2,2-trifluoroethane[1,1,2-]	—	100000
54-24242	99–101	Trichloroethane[1,1,1-]	—	620000
54-24242	99–101	Trichloroethene	—	240000
54-24242	99–101	Trichlorofluoromethane	—	8500
54-24242	109.5–111.5	Chloroform	28000	—
54-24242	109.5–111.5	Cyclohexane	24000	—
54-24242	109.5–111.5	Dichloroethane[1,1-]	23000	—
54-24242	109.5–111.5	Dichloroethane[1,2-]	23000	—
54-24242	109.5–111.5	Dichloroethene[1,1-]	54000	—
54-24242	109.5–111.5	Dichloropropane[1,2-]	14000	—
54-24242	109.5–111.5	Methylene Chloride	11000	—
54-24242	109.5–111.5	Tetrachloroethene	390000	—
54-24242	109.5–111.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	130000	—
54-24242	109.5–111.5	Trichloroethane[1,1,1-]	1300000	—
54-24242	109.5–111.5	Trichloroethene	340000	—
54-24242	109.5–111.5	Trichlorofluoromethane	12000	—
54-24243	24–26	Carbon Tetrachloride	5100	2900
54-24243	24–26	Chloroform	19000	17000
54-24243	24–26	Cyclohexane	14000	11000(J+)
54-24243	24–26	Dichlorodifluoromethane	ND	1100
54-24243	24–26	Dichloroethane[1,1-]	19000	20000
54-24243	24–26	Dichloroethane[1,2-]	4400	3700
54-24243	24–26	Dichloroethene[1,1-]	29000	210000
54-24243	24–26	Dichloropropane[1,2-]	38000	40000
54-24243	24–26	Tetrachloroethene	30000	17000
54-24243	24–26	Trichloro-1,2,2-trifluoroethane[1,1,2-]	280000	240000
54-24243	24–26	Trichloroethane[1,1,1-]	1000000	590000
54-24243	24–26	Trichloroethene	230000	200000
54-24243	24–26	Trichlorofluoromethane	10000	8400
54-24243	49–51	Chloroform	33000	—
54-24243	49–51	Cyclohexane	30000	—
54-24243	49–51	Dichloroethane[1,1-]	32000	—
54-24243	49–51	Dichloroethane[1,2-]	8700	—
54-24243	49–51	Dichloroethene[1,1-]	67000	—
54-24243	49–51	Dichloropropane[1,2-]	110000	—
54-24243	49–51	Tetrachloroethene	31000	—
54-24243	49–51	Trichloro-1,2,2-trifluoroethane[1,1,2-]	440000	—

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-24243	49–51	Trichloroethane[1,1,1-]	1700000	—
54-24243	49–51	Trichloroethene	400000	—
54-24243	49–51	Trichlorofluoromethane	20000	—
54-24243	74–76	Acetone	22000	—
54-24243	74–76	Carbon Disulfide	21000	—
54-24243	74–76	Chloroform	32000	—
54-24243	74–76	Cyclohexane	32000	—
54-24243	74–76	Dichloroethane[1,1-]	28000	—
54-24243	74–76	Dichloroethane[1,2-]	18000	—
54-24243	74–76	Dichloroethene[1,1-]	55000	—
54-24243	74–76	Dichloropropane[1,2-]	120000	—
54-24243	74–76	Hexane	12000	—
54-24243	74–76	Methylene Chloride	29000	—
54-24243	74–76	Propanol[2-]	19000	—
54-24243	74–76	Tetrachloroethene	28000	—
54-24243	74–76	Trichloro-1,2,2-trifluoroethane[1,1,2-]	360000	—
54-24243	74–76	Trichloroethane[1,1,1-]	1700000	—
54-24243	74–76	Trichloroethene	360000	—
54-24243	74–76	Trichlorofluoromethane	22000	—
54-24243	99–101	Benzene	—	2000
54-24243	99–101	Carbon Tetrachloride	—	5200
54-24243	99–101	Chloroform	—	30000
54-24243	99–101	Cyclohexane	—	21000(J+)
54-24243	99–101	Dichlorodifluoromethane	—	2000
54-24243	99–101	Dichloroethane[1,1-]	—	27000
54-24243	99–101	Dichloroethane[1,2-]	—	24000
54-24243	99–101	Dichloroethene[1,1-]	—	310000
54-24243	99–101	Dichloropropane[1,2-]	—	110000
54-24243	99–101	Methylene Chloride	—	52000
54-24243	99–101	Tetrachloroethene	—	34000
54-24243	99–101	Trichloro-1,2,2-trifluoroethane[1,1,2-]	—	330000
54-24243	99–101	Trichloroethane[1,1,1-]	—	1100000
54-24243	99–101	Trichloroethene	—	380000
54-24243	99–101	Trichlorofluoromethane	—	22000
54-24243	124–126	Acetone	14000	ND
54-24243	124–126	Benzene	3400	2500
54-24243	124–126	Carbon Tetrachloride	ND	5900
54-24243	124–126	Chloroform	34000	29000
54-24243	124–126	Cyclohexane	26000	19000(J+)

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-24243	124–126	Dichlorodifluoromethane	ND	2200
54-24243	124–126	Dichloroethane[1,1-]	20000	22000
54-24243	124–126	Dichloroethane[1,2-]	34000	26000
54-24243	124–126	Dichloroethene[1,1-]	70000	320000
54-24243	124–126	Dichloropropane[1,2-]	60000	71000
54-24243	124–126	Methylene Chloride	66000	53000
54-24243	124–126	Propanol[2-]	68000	ND
54-24243	124–126	Tetrachloroethene	32000	35000
54-24243	124–126	Toluene	4800	ND
54-24243	124–126	Trichloro-1,2,2-trifluoroethane[1,1,2-]	270000	310000
54-24243	124–126	Trichloroethane[1,1,1-]	1500000	980000
54-24243	124–126	Trichloroethene	330000	350000
54-24243	124–126	Trichlorofluoromethane	32000	25000
54-24244	24–26	Carbon Tetrachloride	3800	—
54-24244	24–26	Chloroform	15000	—
54-24244	24–26	Cyclohexane	8500	—
54-24244	24–26	Dichloroethane[1,1-]	7100	—
54-24244	24–26	Dichloroethane[1,2-]	9000	—
54-24244	24–26	Dichloroethene[1,1-]	20000	—
54-24244	24–26	Dichloropropane[1,2-]	29000	—
54-24244	24–26	Methylene Chloride	9000	—
54-24244	24–26	Tetrachloroethene	28000	—
54-24244	24–26	Tetrahydrofuran	8200	—
54-24244	24–26	Toluene	2900	—
54-24244	24–26	Trichloro-1,2,2-trifluoroethane[1,1,2-]	98000	—
54-24244	24–26	Trichloroethane[1,1,1-]	620000	—
54-24244	24–26	Trichloroethene	110000	—
54-24244	24–26	Trichlorofluoromethane	14000	—
54-24244	74–76	Carbon Disulfide	2300	—
54-24244	74–76	Chloroform	21000	—
54-24244	74–76	Cyclohexane	13000	—
54-24244	74–76	Dichloroethane[1,1-]	10000	—
54-24244	74–76	Dichloroethane[1,2-]	14000	—
54-24244	74–76	Dichloroethene[1,1-]	26000	—
54-24244	74–76	Dichloropropane[1,2-]	37000	—
54-24244	74–76	Methylene Chloride	24000	—
54-24244	74–76	Tetrachloroethene	18000	—
54-24244	74–76	Tetrahydrofuran	33000	—
54-24244	74–76	Toluene	3900	—

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-24244	74–76	Trichloro-1,2,2-trifluoroethane[1,1,2-]	120000	—
54-24244	74–76	Trichloroethane[1,1,1-]	760000	—
54-24244	74–76	Trichloroethene	120000	—
54-24244	74–76	Trichlorofluoromethane	22000	—
54-24244	99–101	Acetone	7400	—
54-24244	99–101	Carbon Disulfide	2200	—
54-24244	99–101	Chloroform	19000	—
54-24244	99–101	Cyclohexane	13000	—
54-24244	99–101	Dichloroethane[1,1-]	10000	—
54-24244	99–101	Dichloroethane[1,2-]	14000	—
54-24244	99–101	Dichloroethene[1,1-]	28000	—
54-24244	99–101	Dichloropropane[1,2-]	31000	—
54-24244	99–101	Methylene Chloride	22000	—
54-24244	99–101	Tetrachloroethene	16000	—
54-24244	99–101	Tetrahydrofuran	18000	—
54-24244	99–101	Toluene	4500	—
54-24244	99–101	Trichloro-1,2,2-trifluoroethane[1,1,2-]	130000	—
54-24244	99–101	Trichloroethane[1,1,1-]	730000	—
54-24244	99–101	Trichloroethene	120000	—
54-24244	99–101	Trichlorofluoromethane	26000	—
54-24244	117.5–119.5	Chloroform	9500	—
54-24244	117.5–119.5	Cyclohexane	5300	—
54-24244	117.5–119.5	Dichloroethane[1,1-]	4500	—
54-24244	117.5–119.5	Dichloroethane[1,2-]	5900	—
54-24244	117.5–119.5	Dichloroethene[1,1-]	13000	—
54-24244	117.5–119.5	Dichloropropane[1,2-]	19000	—
54-24244	117.5–119.5	Methylene Chloride	6000	—
54-24244	117.5–119.5	Tetrachloroethene	18000	—
54-24244	117.5–119.5	Tetrahydrofuran	6800	—
54-24244	117.5–119.5	Toluene	2200	—
54-24244	117.5–119.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	62000	—
54-24244	117.5–119.5	Trichloroethane[1,1,1-]	390000	—
54-24244	117.5–119.5	Trichloroethene	71000	—
54-24244	117.5–119.5	Trichlorofluoromethane	8800	—
54-24399	550–608	Carbon Tetrachloride	32	—
54-24399	550–608	Chloroform	86	—
54-24399	550–608	Cyclohexane	93	—
54-24399	550–608	Dichlorodifluoromethane	30	—
54-24399	550–608	Dichloroethane[1,1-]	110	—

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-24399	550–608	Dichloroethane[1,2-]	37	—
54-24399	550–608	Dichloroethene[1,1-]	290	—
54-24399	550–608	Dichloropropane[1,2-]	44	—
54-24399	550–608	Methylene Chloride	43	—
54-24399	550–608	Tetrachloroethene	500	—
54-24399	550–608	Trichloro-1,2,2-trifluoroethane[1,1,2-]	730	—
54-24399	550–608	Trichloroethane[1,1,1-]	4400	—
54-24399	550–608	Trichloroethene	1100	—
54-24399	550–608	Trichlorofluoromethane	62	—
54-27641	30–34	Acetone	47000	ND
54-27641	30–34	Benzene	ND	840
54-27641	30–34	Butanone[2-]	7900	ND
54-27641	30–34	Carbon Disulfide	14000	ND
54-27641	30–34	Carbon Tetrachloride	ND	2700
54-27641	30–34	Chloroform	ND	5500
54-27641	30–34	Cyclohexane	38000	26000(J+)
54-27641	30–34	Dichlorodifluoromethane	9600	12000
54-27641	30–34	Dichloroethane[1,1-]	81000	81000
54-27641	30–34	Dichloroethane[1,2-]	84000	100000
54-27641	30–34	Dichloroethene[1,1-]	34000	400000
54-27641	30–34	Dichloropropane[1,2-]	ND	3300
54-27641	30–34	Ethanol	15000	ND
54-27641	30–34	Hexane	6300	930
54-27641	30–34	Methylene Chloride	120000	50000
54-27641	30–34	Propanol[2-]	190000	ND
54-27641	30–34	Tetrachloroethene	66000	160000
54-27641	30–34	Toluene	11000	950
54-27641	30–34	Trichloro-1,2,2-trifluoroethane[1,1,2-]	35000	51000
54-27641	30–34	Trichloroethane[1,1,1-]	2100000	1200000
54-27641	30–34	Trichloroethene	290000	560000
54-27641	30–34	Trichlorofluoromethane	ND	12000
54-27641	80–84	Benzene	ND	810
54-27641	80–84	Carbon Disulfide	8500	ND
54-27641	80–84	Carbon Tetrachloride	ND	1900
54-27641	80–84	Chloroform	ND	5700
54-27641	80–84	Cyclohexane	27000	21000(J+)
54-27641	80–84	Dichlorodifluoromethane	ND	7700
54-27641	80–84	Dichloroethane[1,1-]	32000	40000
54-27641	80–84	Dichloroethane[1,2-]	65000	68000

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-27641	80–84	Dichloroethene[1,1-]	36000	330000
54-27641	80–84	Dichloropropane[1,2-]	ND	4100
54-27641	80–84	Hexane	ND	1500
54-27641	80–84	Methylene Chloride	94000	66000
54-27641	80–84	Tetrachloroethene	67000	140000
54-27641	80–84	Tetrahydrofuran	ND	900
54-27641	80–84	Toluene	5300	2700
54-27641	80–84	Trichloro-1,2,2-trifluoroethane[1,1,2-]	24000	34000
54-27641	80–84	Trichloroethane[1,1,1-]	1300000	920000
54-27641	80–84	Trichloroethene	170000	240000
54-27641	80–84	Trichlorofluoromethane	ND	7900
54-27641	110–114	Carbon Disulfide	7300	ND
54-27641	110–114	Chloroform	7000	6700
54-27641	110–114	Cyclohexane	30000	19000(J+)
54-27641	110–114	Dichlorodifluoromethane	ND	7900
54-27641	110–114	Dichloroethane[1,1-]	34000	34000
54-27641	110–114	Dichloroethane[1,2-]	65000	73000
54-27641	110–114	Dichloroethene[1,1-]	46000	260000
54-27641	110–114	Dichloropropane[1,2-]	ND	4600
54-27641	110–114	Hexane	4600	ND
54-27641	110–114	Methylene Chloride	81000	37000
54-27641	110–114	Tetrachloroethene	42000	98000
54-27641	110–114	Trichloro-1,2,2-trifluoroethane[1,1,2-]	30000	24000
54-27641	110–114	Trichloroethane[1,1,1-]	1600000	1200000
54-27641	110–114	Trichloroethene	220000	260000
54-27641	110–114	Trichlorofluoromethane	ND	7000
54-27641	180–185	Acetone	17000	ND
54-27641	180–185	Carbon Disulfide	9100	ND
54-27641	180–185	Carbon Tetrachloride	ND	1600
54-27641	180–185	Chloroform	ND	3400
54-27641	180–185	Cyclohexane	19000	12000(J+)
54-27641	180–185	Dichlorodifluoromethane	5800	3700
54-27641	180–185	Dichloroethane[1,1-]	17000	16000
54-27641	180–185	Dichloroethane[1,2-]	11000	9600
54-27641	180–185	Dichloroethene[1,1-]	40000	210000
54-27641	180–185	Dichloropropane[1,2-]	ND	1600
54-27641	180–185	Ethanol	8000	ND
54-27641	180–185	Hexane	4300	ND
54-27641	180–185	Methylene Chloride	43000	22000

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-27641	180–185	Tetrachloroethene	87000	21000
54-27641	180–185	Toluene	3700	ND
54-27641	180–185	Trichloro-1,2,2-trifluoroethane[1,1,2-]	28000	27000
54-27641	180–185	Trichloroethane[1,1,1-]	990000	550000
54-27641	180–185	Trichloroethene	160000	160000
54-27641	180–185	Trichlorofluoromethane	6200	4600
54-27641	230–235	Carbon Disulfide	990	ND
54-27641	230–235	Carbon Tetrachloride	ND	1100
54-27641	230–235	Chloroform	1900	1500
54-27641	230–235	Cyclohexane	8100	7000(J+)
54-27641	230–235	Dichlorodifluoromethane	4000	2900
54-27641	230–235	Dichloroethane[1,1-]	6400	6200
54-27641	230–235	Dichloroethane[1,2-]	1100	940
54-27641	230–235	Dichloroethene[1,1-]	26000	68000
54-27641	230–235	Methylene Chloride	10000	7000
54-27641	230–235	Propanol[2-]	3500	ND
54-27641	230–235	Tetrachloroethene	7100	11000
54-27641	230–235	Trichloro-1,2,2-trifluoroethane[1,1,2-]	23000	23000
54-27641	230–235	Trichloroethane[1,1,1-]	420000	320000
54-27641	230–235	Trichloroethene	79000	87000
54-27641	230–235	Trichlorofluoromethane	4500	3500
54-27641	269–273	Carbon Tetrachloride	620	820
54-27641	269–273	Chloroform	560	570
54-27641	269–273	Cyclohexane	2500	3200(J+)
54-27641	269–273	Dichlorodifluoromethane	1900	2000
54-27641	269–273	Dichloroethane[1,1-]	1600	1800
54-27641	269–273	Dichloroethene[1,1-]	13000	21000
54-27641	269–273	Hexane	ND	130
54-27641	269–273	Methylene Chloride	1700	1600
54-27641	269–273	Tetrachloroethene	5000	5400
54-27641	269–273	Trichloro-1,2,2-trifluoroethane[1,1,2-]	14000	18000
54-27641	269–273	Trichloroethane[1,1,1-]	120000	140000
54-27641	269–273	Trichloroethene	31000	37000
54-27641	269–273	Trichlorofluoromethane	2400	2700
54-27641	330–335	Carbon Tetrachloride	170	170
54-27641	330–335	Chloroform	59	44
54-27641	330–335	Cyclohexane	330	210(J+)
54-27641	330–335	Dichlorodifluoromethane	460	460
54-27641	330–335	Dichloroethane[1,1-]	120	120

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-27641	330–335	Dichloroethane[1,2-]	34	36
54-27641	330–335	Dichloroethene[1,1-]	3000	3700
54-27641	330–335	Hexane	56	ND
54-27641	330–335	Methylene Chloride	110	54
54-27641	330–335	Tetrachloroethene	800	990
54-27641	330–335	Trichloro-1,2,2-trifluoroethane[1,1,2-]	5000	3400
54-27641	330–335	Trichloroethane[1,1,1-]	14000	9600
54-27641	330–335	Trichloroethene	4500	4400
54-27641	330–335	Trichlorofluoromethane	940	760
54-27642	27.5–32.5	Chloroform	31000	ND
54-27642	27.5–32.5	Dichloroethane[1,1-]	33000	ND
54-27642	27.5–32.5	Dichloroethane[1,2-]	12000(J+)	ND
54-27642	27.5–32.5	Dichloroethene[1,1-]	81000	43000
54-27642	27.5–32.5	Dichloropropane[1,2-]	89000	76000
54-27642	27.5–32.5	Tetrachloroethene	46000	ND
54-27642	27.5–32.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	270000	380000
54-27642	27.5–32.5	Trichloroethane[1,1,1-]	2300000	3400000
54-27642	27.5–32.5	Trichloroethene	280000	250000
54-27642	27.5–32.5	Trichlorofluoromethane	18000	ND
54-27642	72.5–77.5	Acetone	17000	ND
54-27642	72.5–77.5	Carbon Disulfide	11000	ND
54-27642	72.5–77.5	Chloroform	43000	38000
54-27642	72.5–77.5	Dichloroethane[1,1-]	26000	26000
54-27642	72.5–77.5	Dichloroethane[1,2-]	39000(J+)	28000
54-27642	72.5–77.5	Dichloroethene[1,1-]	96000	69000
54-27642	72.5–77.5	Dichloropropane[1,2-]	78000	91000
54-27642	72.5–77.5	Methylene Chloride	140000	24000
54-27642	72.5–77.5	Tetrachloroethene	36000	52000
54-27642	72.5–77.5	Tetrahydrofuran	15000	—
54-27642	72.5–77.5	Toluene	21000	ND
54-27642	72.5–77.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	340000	390000
54-27642	72.5–77.5	Trichloroethane[1,1,1-]	2000000	2100000
54-27642	72.5–77.5	Trichloroethene	350000	430000
54-27642	72.5–77.5	Trichlorofluoromethane	52000	32000
54-27642	113.5–118.5	Carbon Disulfide	16000	ND
54-27642	113.5–118.5	Chloroform	44000	ND
54-27642	113.5–118.5	Dichloroethane[1,1-]	36000	ND
54-27642	113.5–118.5	Dichloroethane[1,2-]	37000(J+)	ND
54-27642	113.5–118.5	Dichloroethene[1,1-]	96000	59000

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-27642	113.5–118.5	Dichloropropane[1,2-]	130000	150000
54-27642	113.5–118.5	Methylene Chloride	140000	ND
54-27642	113.5–118.5	Tetrachloroethene	39000	ND
54-27642	113.5–118.5	Tetrahydrofuran	24000	—
54-27642	113.5–118.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	440000	500000
54-27642	113.5–118.5	Trichloroethane[1,1,1-]	2600000	2700000
54-27642	113.5–118.5	Trichloroethene	370000	430000
54-27642	113.5–118.5	Trichlorofluoromethane	40000	ND
54-27642	172.5–177.5	Acetone	18000	—
54-27642	172.5–177.5	Benzene	4900	—
54-27642	172.5–177.5	Butanone[2-]	3800	—
54-27642	172.5–177.5	Carbon Disulfide	12000	—
54-27642	172.5–177.5	Carbon Tetrachloride	7900	—
54-27642	172.5–177.5	Chloroform	35000	—
54-27642	172.5–177.5	Dichloroethane[1,1-]	12000	—
54-27642	172.5–177.5	Dichloroethane[1,2-]	19000(J+)	—
54-27642	172.5–177.5	Dichloroethene[1,1-]	88000	—
54-27642	172.5–177.5	Dichloropropane[1,2-]	33000	—
54-27642	172.5–177.5	Hexane	5500	—
54-27642	172.5–177.5	Methylene Chloride	120000	—
54-27642	172.5–177.5	Tetrachloroethene	25000	—
54-27642	172.5–177.5	Toluene	30000	—
54-27642	172.5–177.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	270000	—
54-27642	172.5–177.5	Trichloroethane[1,1,1-]	1200000	—
54-27642	172.5–177.5	Trichloroethene	280000	—
54-27642	172.5–177.5	Trichlorofluoromethane	49000	—
54-27642	172.5–177.5	Xylene[1,3-]+Xylene[1,4-]	5600	—
54-27642	232–237.5	Benzene	2700	ND
54-27642	232–237.5	Carbon Tetrachloride	4700	ND
54-27642	232–237.5	Chloroform	17000	19000
54-27642	232–237.5	Dichlorodifluoromethane	3600	ND
54-27642	232–237.5	Dichloroethane[1,1-]	5000	ND
54-27642	232–237.5	Dichloroethane[1,2-]	2200	ND
54-27642	232–237.5	Dichloroethene[1,1-]	71000	72000
54-27642	232–237.5	Dichloropropane[1,2-]	6800	ND
54-27642	232–237.5	Hexane	3400	—
54-27642	232–237.5	Methylene Chloride	53000	63000
54-27642	232–237.5	Tetrachloroethene	10000	19000
54-27642	232–237.5	Toluene	16000	18000

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-27642	232–237.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	230000	250000
54-27642	232–237.5	Trichloroethane[1,1,1-]	580000	690000
54-27642	232–237.5	Trichloroethene	140000	210000
54-27642	232–237.5	Trichlorofluoromethane	31000	29000
54-27642	272–277.5	Benzene	1800	ND
54-27642	272–277.5	Carbon Tetrachloride	3400	ND
54-27642	272–277.5	Chloroform	7700	8700
54-27642	272–277.5	Dichlorodifluoromethane	2500	ND
54-27642	272–277.5	Dichloroethane[1,1-]	2000	ND
54-27642	272–277.5	Dichloroethene[1,1-]	48000	48000
54-27642	272–277.5	Dichloropropane[1,2-]	2100	ND
54-27642	272–277.5	Hexane	2400	—
54-27642	272–277.5	Methylene Chloride	22000	25000
54-27642	272–277.5	Tetrachloroethene	7900	9900
54-27642	272–277.5	Toluene	11000	6500
54-27642	272–277.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	97000	150000
54-27642	272–277.5	Trichloroethane[1,1,1-]	260000	330000
54-27642	272–277.5	Trichloroethene	95000	110000
54-27642	272–277.5	Trichlorofluoromethane	14000	15000
54-27642	335–341	Benzene	540	ND
54-27642	335–341	Carbon Tetrachloride	1600	ND
54-27642	335–341	Chloroform	1800	1600
54-27642	335–341	Dichlorodifluoromethane	1500	ND
54-27642	335–341	Dichloroethane[1,1-]	480	ND
54-27642	335–341	Dichloroethene[1,1-]	21000	24000
54-27642	335–341	Hexane	1400	—
54-27642	335–341	Methylene Chloride	4000	3400
54-27642	335–341	Tetrachloroethene	2400	2600
54-27642	335–341	Toluene	2400	ND
54-27642	335–341	Trichloro-1,2,2-trifluoroethane[1,1,2-]	43000	53000
54-27642	335–341	Trichloroethane[1,1,1-]	82000	89000
54-27642	335–341	Trichloroethene	31000	35000
54-27642	335–341	Trichlorofluoromethane	5600	5000
54-27643	27.5–32.5	Carbon Disulfide	2000	ND
54-27643	27.5–32.5	Carbon Tetrachloride	1700	3100
54-27643	27.5–32.5	Chloroform	8600	13000
54-27643	27.5–32.5	Cyclohexane	5800	5100(J+)
54-27643	27.5–32.5	Dichlorodifluoromethane	ND	800
54-27643	27.5–32.5	Dichloroethane[1,1-]	4200	6000

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-27643	27.5–32.5	Dichloroethane[1,2-]	2900	5200
54-27643	27.5–32.5	Dichloroethene[1,1-]	9900	100000
54-27643	27.5–32.5	Dichloropropane[1,2-]	15000	25000
54-27643	27.5–32.5	Methylene Chloride	1900	410
54-27643	27.5–32.5	Propanol[2-]	2800	ND
54-27643	27.5–32.5	Tetrachloroethene	11000	28000
54-27643	27.5–32.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	53000	54000
54-27643	27.5–32.5	Trichloroethane[1,1,1-]	320000	340000
54-27643	27.5–32.5	Trichloroethene	55000	93000
54-27643	27.5–32.5	Trichlorofluoromethane	8500	10000
54-27643	71.5–76.5	Benzene	ND	1100
54-27643	71.5–76.5	Carbon Disulfide	1700	ND
54-27643	71.5–76.5	Carbon Tetrachloride	ND	4300
54-27643	71.5–76.5	Chlorobenzene	ND	980
54-27643	71.5–76.5	Chloroform	14000	19000
54-27643	71.5–76.5	Cyclohexane	ND	7000(J+)
54-27643	71.5–76.5	Dichlorodifluoromethane	ND	1200
54-27643	71.5–76.5	Dichloroethane[1,1-]	6800	7900
54-27643	71.5–76.5	Dichloroethane[1,2-]	7800	13000
54-27643	71.5–76.5	Dichloroethene[1,1-]	21000	130000
54-27643	71.5–76.5	Dichloropropane[1,2-]	23000	32000
54-27643	71.5–76.5	Methylene Chloride	16000	10000
54-27643	71.5–76.5	Tetrachloroethene	14000	30000
54-27643	71.5–76.5	Tetrahydrofuran	12000	20000
54-27643	71.5–76.5	Toluene	2000	1900
54-27643	71.5–76.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	93000	78000
54-27643	71.5–76.5	Trichloroethane[1,1,1-]	500000	470000
54-27643	71.5–76.5	Trichloroethene	87000	130000
54-27643	71.5–76.5	Trichlorofluoromethane	15000	18000
54-27643	71.5–76.5	Xylene[1,2-]	ND	1800
54-27643	114.5–119.5	Benzene	1500	1800
54-27643	114.5–119.5	Carbon Disulfide	1200	ND
54-27643	114.5–119.5	Carbon Tetrachloride	2700	4400
54-27643	114.5–119.5	Chlorobenzene	ND	1100
54-27643	114.5–119.5	Chloroform	17000	22000
54-27643	114.5–119.5	Cyclohexane	ND	7200(J+)
54-27643	114.5–119.5	Dichlorodifluoromethane	ND	1700
54-27643	114.5–119.5	Dichloroethane[1,1-]	6900	7900
54-27643	114.5–119.5	Dichloroethane[1,2-]	11000	16000

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-27643	114.5–119.5	Dichloroethene[1,1-]	26000	140000
54-27643	114.5–119.5	Dichloropropane[1,2-]	22000	30000
54-27643	114.5–119.5	Hexane	ND	520
54-27643	114.5–119.5	Methylene Chloride	34000	26000
54-27643	114.5–119.5	Tetrachloroethene	13000	28000
54-27643	114.5–119.5	Tetrahydrofuran	2800	2100
54-27643	114.5–119.5	Toluene	6100	6000
54-27643	114.5–119.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	120000	98000
54-27643	114.5–119.5	Trichloroethane[1,1,1-]	570000	500000
54-27643	114.5–119.5	Trichloroethene	100000	150000
54-27643	114.5–119.5	Trichlorofluoromethane	21000	23000
54-27643	114.5–119.5	Xylene[1,2-]	ND	2500
54-27643	164–170	Benzene	1900	—
54-27643	164–170	Carbon Disulfide	1300	—
54-27643	164–170	Carbon Tetrachloride	2400	—
54-27643	164–170	Chloroform	16000	—
54-27643	164–170	Dichlorodifluoromethane	2000	—
54-27643	164–170	Dichloroethane[1,1-]	5000	—
54-27643	164–170	Dichloroethane[1,2-]	6800	—
54-27643	164–170	Dichloroethene[1,1-]	35000	—
54-27643	164–170	Dichloropropane[1,2-]	13000	—
54-27643	164–170	Hexane	1200	—
54-27643	164–170	Methylene Chloride	46000	—
54-27643	164–170	Tetrachloroethene	8200	—
54-27643	164–170	Toluene	9700	—
54-27643	164–170	Trichloro-1,2,2-trifluoroethane[1,1,2-]	140000	—
54-27643	164–170	Trichloroethane[1,1,1-]	450000	—
54-27643	164–170	Trichloroethene	91000	—
54-27643	164–170	Trichlorofluoromethane	22000	—
54-27643	232.5–237.5	Benzene	1900	2700
54-27643	232.5–237.5	Carbon Disulfide	1300	ND
54-27643	232.5–237.5	Carbon Tetrachloride	3200	4700
54-27643	232.5–237.5	Chloroform	13000	16000
54-27643	232.5–237.5	Cyclohexane	ND	5300(J+)
54-27643	232.5–237.5	Dichlorodifluoromethane	2200	3000
54-27643	232.5–237.5	Dichloroethane[1,1-]	3200	3600
54-27643	232.5–237.5	Dichloroethane[1,2-]	1700	2700
54-27643	232.5–237.5	Dichloroethene[1,1-]	41000	91000
54-27643	232.5–237.5	Dichloropropane[1,2-]	5000	7400

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-27643	232.5–237.5	Hexane	1900	2200
54-27643	232.5–237.5	Methylene Chloride	39000	37000
54-27643	232.5–237.5	Tetrachloroethene	6200	16000
54-27643	232.5–237.5	Toluene	10000	9100
54-27643	232.5–237.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	150000	120000
54-27643	232.5–237.5	Trichloroethane[1,1,1-]	340000	360000
54-27643	232.5–237.5	Trichloroethene	84000	140000
54-27643	232.5–237.5	Trichlorofluoromethane	19000	22000
54-27643	272.5–278.5	Benzene	1800	1800
54-27643	272.5–278.5	Carbon Tetrachloride	2700	3800
54-27643	272.5–278.5	Chloroform	8000	9900
54-27643	272.5–278.5	Cyclohexane	4200	3100(J+)
54-27643	272.5–278.5	Dichlorodifluoromethane	1800	2700
54-27643	272.5–278.5	Dichloroethane[1,1-]	1800	2100
54-27643	272.5–278.5	Dichloroethane[1,2-]	ND	490
54-27643	272.5–278.5	Dichloroethene[1,1-]	34000	88000
54-27643	272.5–278.5	Dichloropropane[1,2-]	2100	2400
54-27643	272.5–278.5	Hexane	1600	2200
54-27643	272.5–278.5	Methylene Chloride	19000	22000
54-27643	272.5–278.5	Tetrachloroethene	9400	11000
54-27643	272.5–278.5	Toluene	13000	4600
54-27643	272.5–278.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	100000	96000
54-27643	272.5–278.5	Trichloroethane[1,1,1-]	230000	190000
54-27643	272.5–278.5	Trichloroethene	81000	99000
54-27643	272.5–278.5	Trichlorofluoromethane	12000	17000
54-27643	272.5–278.5	Xylene[1,3-]+Xylene[1,4-]	1100	ND
54-27643	351–356.5	Benzene	390	480
54-27643	351–356.5	Carbon Tetrachloride	1100	1800
54-27643	351–356.5	Chloroform	820	1400
54-27643	351–356.5	Cyclohexane	ND	1100(J+)
54-27643	351–356.5	Dichlorodifluoromethane	1000	1500
54-27643	351–356.5	Dichloroethane[1,1-]	200	320
54-27643	351–356.5	Dichloroethene[1,1-]	14000	21000
54-27643	351–356.5	Dichloropropane[1,2-]	ND	87
54-27643	351–356.5	Hexane	1000	1200
54-27643	351–356.5	Methylene Chloride	1400	2200
54-27643	351–356.5	n-Heptane	150	ND
54-27643	351–356.5	Tetrachloroethene	1400	2700
54-27643	351–356.5	Toluene	1200	530

Table 5.0-1 (continued)

Location ID	Depth (ft)	VOC	FY07 Result	1QFY08 Result
54-27643	351–356.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	35000	34000
54-27643	351–356.5	Trichloroethane[1,1,1-]	45000	62000
54-27643	351–356.5	Trichloroethene	16000	25000
54-27643	351–356.5	Trichlorofluoromethane	3700	5400

Note: VOC samples analyzed using EPA Method TO-15. Units are $\mu g/m^3$.

[a] — = The analysis was not requested.

[b] ND = The analyte was not detected.

Table 5.0-2
Pore-Gas Tritium Results at MDA L

Location ID	Depth (ft)	FY07 Result	1QFY08 Result
54-27641	30–34	18200	3773.28
54-27641	80–84	10980	906.295
54-27641	110–114	ND[a]	1754.44
54-27641	180–185	ND	ND
54-27641	230–235	ND	6527.27
54-27641	269–273	ND	172893
54-27641	330–335	4170	11545.2
54-27642	27.5–32.5	1320	11415.2
54-27642	72.5–77.5	4960	ND
54-27642	113.5–118.5	8420	2562.98
54-27642	172.5–177	570	—[b]
54-27642	232–237.5	1340	12278.2
54-27642	272–277.5	370	13496.6
54-27642	335–341	ND	1382.13
54-27643	27.5–32.5	ND	1371.73
54-27643	71.5–76.5	470	2677.47
54-27643	114.5–119.5	510	623
54-27643	164–170	540	—
54-27643	232.5–237.5	440	2776.15
54-27643	272.5–278.5	510	1577.05
54-27643	351–356.5	630	1861.13

Note: Units are pCi/L.

[a] ND = The analyte was not detected.

[b] — = The analysis was not requested.

Table 5.4-1
Comparison of Detected Pore-Gas Concentrations to Screening Concentrations at MDA L

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-02001	40–40	Dichlorodifluoromethane	10000	4.1	390	0.00625	1599000
54-02001	40–40	Dichloroethane[1,1-]	59000	0.23	1220	0.21	280600
54-02001	40–40	Dichloroethane[1,2-]	83000	0.0401	5	414	200.5
54-02001	40–40	Dichloroethene[1,1-]	240000	1.1	5	43.6	5500
54-02001	40–40	Dichloropropane[1,2-]	2900	0.11	5	5.27	550
54-02001	40–40	Tetrachloroethene	180000	0.754	5	47.7	3770
54-02001	40–40	Trichloroethane[1,1,1-]	1300000	0.705	60	30.7	42300
54-02001	40–40	Trichloroethene	410000	0.422	5	194	2110
54-02001	40–40	Trichlorofluoromethane	8700	4	1300	0.00167	5200000
54-02001	100–100	Dichlorodifluoromethane	3300	4.1	390	0.00206	1599000
54-02001	100–100	Dichloroethane[1,1-]	15000	0.23	1220	0.0535	280600
54-02001	100–100	Dichloroethane[1,2-]	27000	0.0401	5	135	200.5
54-02001	100–100	Dichloroethene[1,1-]	100000	1.1	5	18.2	5500
54-02001	100–100	Dichloropropane[1,2-]	1400	0.11	5	2.55	550
54-02001	100–100	Tetrachloroethene	54000	0.754	5	14.3	3770
54-02001	100–100	Trichloroethane[1,1,1-]	430000	0.705	60	10.2	42300
54-02001	100–100	Trichloroethene	99000	0.422	5	46.9	2110
54-02001	100–100	Trichlorofluoromethane	2600	4	1300	0.0005	5200000
54-02001	120–120	Dichlorodifluoromethane	5400	4.1	390	0.00338	1599000
54-02001	120–120	Dichloroethane[1,1-]	28000	0.23	1220	0.0998	280600
54-02001	120–120	Dichloroethane[1,2-]	52000	0.0401	5	259	200.5
54-02001	120–120	Dichloroethene[1,1-]	230000	1.1	5	41.8	5500
54-02001	120–120	Dichloropropane[1,2-]	4300	0.11	5	7.82	550
54-02001	120–120	Tetrachloroethene	52000	0.754	5	13.8	3770
54-02001	120–120	Trichloroethane[1,1,1-]	1100000	0.705	60	26	42300

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-02001	120–120	Trichloroethene	230000	0.422	5	109	2110
54-02001	120–120	Trichlorofluoromethane	4900	4	1300	0.000942	5200000
54-02001	200–200	Dichlorodifluoromethane	4200	4.1	390	0.00263	1599000
54-02001	200–200	Dichloroethane[1,1-]	13000	0.23	1220	0.0463	280600
54-02001	200–200	Dichloroethane[1,2-]	6000	0.0401	5	29.9	200.5
54-02001	200–200	Dichloroethene[1,1-]	140000	1.1	5	25.5	5500
54-02001	200–200	Dichloropropane[1,2-]	920	0.11	5	1.67	550
54-02001	200–200	Tetrachloroethene	21000	0.754	5	5.57	3770
54-02001	200–200	Trichloroethane[1,1,1-]	550000	0.705	60	13	42300
54-02001	200–200	Trichloroethene	150000	0.422	5	71.1	2110
54-02001	200–200	Trichlorofluoromethane	4200	4	1300	0.000808	5200000
54-02022	40–40	Chloroform	1600	0.15	1.65	6.46	247.5
54-02022	40–40	Cyclohexane	6000 (J+)	8.2	13000	0.0000563	1.07E+08
54-02022	40–40	Dichlorodifluoromethane	1800	4.1	390	0.00113	1599000
54-02022	40–40	Dichloroethane[1,1-]	8400	0.23	1220	0.0299	280600
54-02022	40–40	Dichloroethane[1,2-]	13000	0.0401	5	64.8	200.5
54-02022	40–40	Dichloroethene[1,1-]	99000	1.1	5	18	5500
54-02022	40–40	Dichloropropane[1,2-]	1300	0.11	5	2.36	550
54-02022	40–40	Methylene Chloride	740	0.09	5	1.64	450
54-02022	40–40	Tetrachloroethene	13000	0.754	5	3.45	3770
54-02022	40–40	Trichloro-1,2,2-trifluoroethane[1,1,2-]	5200	21.4	59000	0.00000412	1.26E+09
54-02022	40–40	Trichloroethane[1,1,1-]	380000	0.705	60	8.98	42300
54-02022	40–40	Trichloroethene	72000	0.422	5	34.1	2110
54-02022	40–40	Trichlorofluoromethane	1600	4	1300	0.000308	5200000
54-02022	100–100	Chloroform	2200	0.15	1.65	8.89	247.5

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-02022	100–100	Cyclohexane	8400 (J+)	8.2	13000	0.0000788	1.07E+08
54-02022	100–100	Dichlorodifluoromethane	2300	4.1	390	0.00144	1599000
54-02022	100–100	Dichloroethane[1,1-]	11000	0.23	1220	0.0392	280600
54-02022	100–100	Dichloroethane[1,2-]	18000	0.0401	5	89.8	200.5
54-02022	100–100	Dichloroethene[1,1-]	140000	1.1	5	25.5	5500
54-02022	100–100	Dichloropropane[1,2-]	1700	0.11	5	3.09	550
54-02022	100–100	Methylene Chloride	5400	0.09	5	12	450
54-02022	100–100	Tetrachloroethene	13000	0.754	5	3.45	3770
54-02022	100–100	Trichloro-1,2,2-trifluoroethane[1,1,2-]	6800	21.4	59000	0.00000539	1.26E+09
54-02022	100–100	Trichloroethane[1,1,1-]	540000	0.705	60	12.8	42300
54-02022	100–100	Trichloroethene	100000	0.422	5	47.4	2110
54-02022	100–100	Trichlorofluoromethane	2200	4	1300	0.000423	5200000
54-02022	120–120	Chloroform	2200	0.15	1.65	8.89	247.5
54-02022	120–120	Cyclohexane	8900 (J+)	8.2	13000	0.0000835	1.07E+08
54-02022	120–120	Dichlorodifluoromethane	2400	4.1	390	0.0015	1599000
54-02022	120–120	Dichloroethane[1,1-]	11000	0.23	1220	0.0392	280600
54-02022	120–120	Dichloroethane[1,2-]	14000	0.0401	5	69.8	200.5
54-02022	120–120	Dichloroethene[1,1-]	120000	1.1	5	21.8	5500
54-02022	120–120	Dichloropropane[1,2-]	1500	0.11	5	2.73	550
54-02022	120–120	Methylene Chloride	5500	0.09	5	12.2	450
54-02022	120–120	Tetrachloroethene	12000	0.754	5	3.18	3770
54-02022	120–120	Trichloro-1,2,2-trifluoroethane[1,1,2-]	4600	21.4	59000	0.00000364	1.26E+09
54-02022	120–120	Trichloroethane[1,1,1-]	580000	0.705	60	13.7	42300
54-02022	120–120	Trichloroethene	110000	0.422	5	52.1	2110
54-02022	120–120	Trichlorofluoromethane	2300	4	1300	0.000442	5200000
54-02022	200–200	Carbon Tetrachloride	620	1.25	5	0.0992	6250

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-02022	200–200	Chloroform	870	0.15	1.65	3.52	247.5
54-02022	200–200	Cyclohexane	3900 (J+)	8.2	13000	0.0000366	1.07E+08
54-02022	200–200	Dichlorodifluoromethane	2500	4.1	390	0.00156	1599000
54-02022	200–200	Dichloroethane[1,1-]	3600	0.23	1220	0.0128	280600
54-02022	200–200	Dichloroethane[1,2-]	850	0.0401	5	4.24	200.5
54-02022	200–200	Dichloroethene[1,1-]	50000	1.1	5	9.09	5500
54-02022	200–200	Methylene Chloride	4100	0.09	5	9.11	450
54-02022	200–200	Tetrachloroethene	5400	0.754	5	1.43	3770
54-02022	200–200	Trichloro-1,2,2-trifluoroethane[1,1,2-]	6500	21.4	59000	0.00000515	1.26E+09
54-02022	200–200	Trichloroethane[1,1,1-]	240000	0.705	60	5.67	42300
54-02022	200–200	Trichloroethene	56000	0.422	5	26.5	2110
54-02022	200–200	Trichlorofluoromethane	2400	4	1300	0.000462	5200000
54-24238	83–85	Chloroform	35000	0.15	1.65	141	247.5
54-24238	83–85	Dichloroethane[1,1-]	35000	0.23	1220	0.125	280600
54-24238	83–85	Dichloroethane[1,2-]	37000	0.0401	5	185	200.5
54-24238	83–85	Dichloroethene[1,1-]	68000	1.1	5	12.4	5500
54-24238	83–85	Dichloropropane[1,2-]	240000	0.11	5	436	550
54-24238	83–85	Tetrachloroethene	51000	0.754	5	13.5	3770
54-24238	83–85	Trichloro-1,2,2-trifluoroethane[1,1,2-]	480000	21.4	59000	0.00038	1.26E+09
54-24238	83–85	Trichloroethane[1,1,1-]	2100000	0.705	60	49.6	42300
54-24238	83–85	Trichloroethene	510000	0.422	5	242	2110
54-24238	83–85	Trichlorofluoromethane	23000	4	1300	0.00442	5200000
54-24239	24–26	Carbon Tetrachloride	4300	1.25	5	0.688	6250
54-24239	24–26	Chloroform	14000	0.15	1.65	56.6	247.5
54-24239	24–26	Cyclohexane	7400 (J+)	8.2	13000	0.0000694	1.07E+08
54-24239	24–26	Dichlorodifluoromethane	1000	4.1	390	0.000625	1599000

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-24239	24–26	Dichloroethane[1,1-]	13000	0.23	1220	0.0463	280600
54-24239	24–26	Dichloroethane[1,2-]	5400	0.0401	5	26.9	200.5
54-24239	24–26	Dichloroethene[1,1-]	94000	1.1	5	17.1	5500
54-24239	24–26	Dichloropropane[1,2-]	7400	0.11	5	13.5	550
54-24239	24–26	Tetrachloroethene	520000	0.754	5	138	3770
54-24239	24–26	Trichloro-1,2,2-trifluoroethane[1,1,2-]	45000	21.4	59000	0.0000356	1.26E+09
54-24239	24–26	Trichloroethane[1,1,1-]	500000	0.705	60	11.8	42300
54-24239	24–26	Trichloroethene	210000	0.422	5	99.5	2110
54-24239	24–26	Trichlorofluoromethane	4400	4	1300	0.000846	5200000
54-24239	98.5–100.5	Benzene	770	0.228	5	0.675	1140
54-24239	98.5–100.5	Carbon Tetrachloride	6100	1.25	5	0.976	6250
54-24239	98.5–100.5	Chloroform	20000	0.15	1.65	80.8	247.5
54-24239	98.5–100.5	Cyclohexane	11000 (J+)	8.2	13000	0.000103	1.07E+08
54-24239	98.5–100.5	Dichlorodifluoromethane	1700	4.1	390	0.00106	1599000
54-24239	98.5–100.5	Dichloroethane[1,1-]	18000	0.23	1220	0.0641	280600
54-24239	98.5–100.5	Dichloroethane[1,2-]	11000	0.0401	5	54.9	200.5
54-24239	98.5–100.5	Dichloroethene[1,1-]	140000	1.1	5	25.5	5500
54-24239	98.5–100.5	Dichloropropane[1,2-]	11000	0.11	5	20	550
54-24239	98.5–100.5	Tetrachloroethene	580000	0.754	5	154	3770
54-24239	98.5–100.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	75000	21.4	59000	0.0000594	1.26E+09
54-24239	98.5–100.5	Trichloroethane[1,1,1-]	770000	0.705	60	18.2	42300
54-24239	98.5–100.5	Trichloroethene	270000	0.422	5	128	2110
54-24239	98.5–100.5	Trichlorofluoromethane	7700	4	1300	0.00148	5200000
54-24240	27–29	Benzene	1900	0.228	5	1.67	1140
54-24240	27–29	Carbon Tetrachloride	5600	1.25	5	0.896	6250
54-24240	27–29	Chloroform	15000	0.15	1.65	60.6	247.5

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-24240	27–29	Cyclohexane	33000 (J+)	8.2	13000	0.00031	1.07E+08
54-24240	27–29	Dichlorodifluoromethane	39000	4.1	390	0.0244	1599000
54-24240	27–29	Dichloroethane[1,1-]	100000	0.23	1220	0.356	280600
54-24240	27–29	Dichloroethane[1,2-]	420000	0.0401	5	2090	200.5
54-24240	27–29	Dichloroethene[1,1-]	570000	1.1	5	104	5500
54-24240	27–29	Dichloropropane[1,2-]	3200	0.11	5	5.82	550
54-24240	27–29	Methylene Chloride	60000	0.09	5	133	450
54-24240	27–29	Tetrachloroethene	280000	0.754	5	74.3	3770
54-24240	27–29	Trichloro-1,2,2-trifluoroethane[1,1,2-]	79000	21.4	59000	0.0000626	1.26E+09
54-24240	27–29	Trichloroethane[1,1,1-]	1600000	0.705	60	37.8	42300
54-24240	27–29	Trichloroethene	850000	0.422	5	403	2110
54-24240	27–29	Trichlorofluoromethane	32000	4	1300	0.00615	5200000
54-24240	102–104	Benzene	950	0.228	5	0.833	1140
54-24240	102–104	Carbon Tetrachloride	2300	1.25	5	0.368	6250
54-24240	102–104	Chloroform	8300	0.15	1.65	33.5	247.5
54-24240	102–104	Cyclohexane	16000 (J+)	8.2	13000	0.00015	1.07E+08
54-24240	102–104	Dichlorodifluoromethane	5400	4.1	390	0.00338	1599000
54-24240	102–104	Dichloroethane[1,1-]	32000	0.23	1220	0.114	280600
54-24240	102–104	Dichloroethane[1,2-]	53000	0.0401	5	264	200.5
54-24240	102–104	Dichloroethene[1,1-]	300000	1.1	5	54.5	5500
54-24240	102–104	Dichloropropane[1,2-]	4200	0.11	5	7.64	550
54-24240	102–104	Hexane	630	5	420	0.0003	2100000
54-24240	102–104	Methylene Chloride	18000	0.09	5	40	450
54-24240	102–104	Tetrachloroethene	73000	0.754	5	19.4	3770
54-24240	102–104	Toluene	600	0.272	750	0.00294	204000
54-24240	102–104	Trichloro-1,2,2-trifluoroethane[1,1,2-]	38000	21.4	59000	0.0000301	1.26E+09

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-24240	102–104	Trichloroethane[1,1,1-]	760000	0.705	60	18	42300
54-24240	102–104	Trichloroethene	270000	0.422	5	128	2110
54-24240	102–104	Trichlorofluoromethane	6200	4	1300	0.00119	5200000
54-24240	127–129	Benzene	580	0.228	5	0.509	1140
54-24240	127–129	Carbon Tetrachloride	2000	1.25	5	0.32	6250
54-24240	127–129	Chloroform	5500	0.15	1.65	22.2	247.5
54-24240	127–129	Cyclohexane	14000 (J+)	8.2	13000	0.000131	1.07E+08
54-24240	127–129	Dichlorodifluoromethane	4000	4.1	390	0.0025	1599000
54-24240	127–129	Dichloroethane[1,1-]	23000	0.23	1220	0.082	280600
54-24240	127–129	Dichloroethane[1,2-]	24000	0.0401	5	120	200.5
54-24240	127–129	Dichloroethene[1,1-]	220000	1.1	5	40	5500
54-24240	127–129	Dichloropropane[1,2-]	2800	0.11	5	5.09	550
54-24240	127–129	Methylene Chloride	4600	0.09	5	10.2	450
54-24240	127–129	Tetrachloroethene	46000	0.754	5	12.2	3770
54-24240	127–129	Trichloro-1,2,2-trifluoroethane[1,1,2-]	33000	21.4	59000	0.0000261	1.26E+09
54-24240	127–129	Trichloroethane[1,1,1-]	670000	0.705	60	15.8	42300
54-24240	127–129	Trichloroethene	230000	0.422	5	109	2110
54-24240	127–129	Trichlorofluoromethane	5200	4	1300	0.001	5200000
54-24240	152–154	Benzene	510	0.228	5	0.447	1140
54-24240	152–154	Carbon Tetrachloride	1900	1.25	5	0.304	6250
54-24240	152–154	Chloroform	5000	0.15	1.65	20.2	247.5
54-24240	152–154	Cyclohexane	12000 (J+)	8.2	13000	0.000113	1.07E+08
54-24240	152–154	Dichlorodifluoromethane	4200	4.1	390	0.00263	1599000
54-24240	152–154	Dichloroethane[1,1-]	20000	0.23	1220	0.0713	280600
54-24240	152–154	Dichloroethane[1,2-]	15000	0.0401	5	74.8	200.5
54-24240	152–154	Dichloroethene[1,1-]	240000	1.1	5	43.6	5500

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-24240	152–154	Dichloropropane[1,2-]	2300	0.11	5	4.18	550
54-24240	152–154	Methylene Chloride	1600	0.09	5	3.56	450
54-24240	152–154	Tetrachloroethene	41000	0.754	5	10.9	3770
54-24240	152–154	Trichloro-1,2,2-trifluoroethane[1,1,2-]	35000	21.4	59000	0.0000277	1.26E+09
54-24240	152–154	Trichloroethane[1,1,1-]	600000	0.705	60	14.2	42300
54-24240	152–154	Trichloroethene	210000	0.422	5	99.5	2110
54-24240	152–154	Trichlorofluoromethane	5200	4	1300	0.001	5200000
54-24241	92–94	Chloroform	12000	0.15	1.65	48.5	247.5
54-24241	92–94	Dichloroethane[1,1-]	9200	0.23	1220	0.0328	280600
54-24241	92–94	Dichloroethene[1,1-]	30000	1.1	5	5.45	5500
54-24241	92–94	Tetrachloroethene	50000	0.754	5	13.3	3770
54-24241	92–94	Trichloro-1,2,2-trifluoroethane[1,1,2-]	110000	21.4	59000	0.0000871	1.26E+09
54-24241	92–94	Trichloroethane[1,1,1-]	610000	0.705	60	14.4	42300
54-24241	92–94	Trichloroethene	160000	0.422	5	75.8	2110
54-24241	112–114	Chloroform	12000	0.15	1.65	48.5	247.5
54-24241	112–114	Dichloroethane[1,1-]	9700	0.23	1220	0.0346	280600
54-24241	112–114	Dichloroethane[1,2-]	8800	0.0401	5	43.9	200.5
54-24241	112–114	Dichloroethene[1,1-]	28000	1.1	5	5.09	5500
54-24241	112–114	Tetrachloroethene	54000	0.754	5	14.3	3770
54-24241	112–114	Trichloro-1,2,2-trifluoroethane[1,1,2-]	110000	21.4	59000	0.0000871	1.26E+09
54-24241	112–114	Trichloroethane[1,1,1-]	630000	0.705	60	14.9	42300
54-24241	112–114	Trichloroethene	150000	0.422	5	71.1	2110
54-24241	192–194	Chloroform	22000	0.15	1.65	88.9	247.5
54-24241	192–194	Dichloroethane[1,1-]	25000	0.23	1220	0.0891	280600
54-24241	192–194	Dichloroethane[1,2-]	17000	0.0401	5	84.8	200.5
54-24241	192–194	Dichloroethene[1,1-]	31000	1.1	5	5.64	5500

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-24241	192–194	Tetrachloroethene	97000	0.754	5	25.7	3770
54-24241	192–194	Trichloro-1,2,2-trifluoroethane[1,1,2-]	180000	21.4	59000	0.000143	1.26E+09
54-24241	192–194	Trichloroethane[1,1,1-]	1300000	0.705	60	30.7	42300
54-24241	192–194	Trichloroethene	260000	0.422	5	123	2110
54-24242	24–26	Benzene	520	0.228	5	0.456	1140
54-24242	24–26	Carbon Tetrachloride	3900	1.25	5	0.624	6250
54-24242	24–26	Chloroform	15000	0.15	1.65	60.6	247.5
54-24242	24–26	Cyclohexane	9200 (J+)	8.2	13000	0.0000863	1.07E+08
54-24242	24–26	Dichlorodifluoromethane	1400	4.1	390	0.000876	1599000
54-24242	24–26	Dichloroethane[1,1-]	16000	0.23	1220	0.057	280600
54-24242	24–26	Dichloroethane[1,2-]	6000	0.0401	5	29.9	200.5
54-24242	24–26	Dichloroethene[1,1-]	180000	1.1	5	32.7	5500
54-24242	24–26	Dichloropropane[1,2-]	8600	0.11	5	15.6	550
54-24242	24–26	Tetrachloroethene	250000	0.754	5	66.3	3770
54-24242	24–26	Trichloro-1,2,2-trifluoroethane[1,1,2-]	77000	21.4	59000	0.000061	1.26E+09
54-24242	24–26	Trichloroethane[1,1,1-]	470000	0.705	60	11.1	42300
54-24242	24–26	Trichloroethene	190000	0.422	5	90	2110
54-24242	24–26	Trichlorofluoromethane	5900	4	1300	0.00113	5200000
54-24242	99–101	Benzene	940	0.228	5	0.825	1140
54-24242	99–101	Carbon Tetrachloride	4400	1.25	5	0.704	6250
54-24242	99–101	Chloroform	18000	0.15	1.65	72.7	247.5
54-24242	99–101	Cyclohexane	12000 (J+)	8.2	13000	0.000113	1.07E+08
54-24242	99–101	Dichlorodifluoromethane	2000	4.1	390	0.00125	1599000
54-24242	99–101	Dichloroethane[1,1-]	17000	0.23	1220	0.0606	280600
54-24242	99–101	Dichloroethane[1,2-]	10000	0.0401	5	49.9	200.5
54-24242	99–101	Dichloroethene[1,1-]	220000	1.1	5	40	5500

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-24242	99–101	Dichloropropane[1,2-]	8700	0.11	5	15.8	550
54-24242	99–101	Tetrachloroethene	230000	0.754	5	61	3770
54-24242	99–101	Trichloro-1,2,2-trifluoroethane[1,1,2-]	100000	21.4	59000	0.0000792	1.26E+09
54-24242	99–101	Trichloroethane[1,1,1-]	620000	0.705	60	14.7	42300
54-24242	99–101	Trichloroethene	240000	0.422	5	114	2110
54-24242	99–101	Trichlorofluoromethane	8500	4	1300	0.00163	5200000
54-24243	24–26	Carbon Tetrachloride	2900	1.25	5	0.464	6250
54-24243	24–26	Chloroform	17000	0.15	1.65	68.7	247.5
54-24243	24–26	Cyclohexane	11000 (J+)	8.2	13000	0.000103	1.07E+08
54-24243	24–26	Dichlorodifluoromethane	1100	4.1	390	0.000688	1599000
54-24243	24–26	Dichloroethane[1,1-]	20000	0.23	1220	0.0713	280600
54-24243	24–26	Dichloroethane[1,2-]	3700	0.0401	5	18.5	200.5
54-24243	24–26	Dichloroethene[1,1-]	210000	1.1	5	38.2	5500
54-24243	24–26	Dichloropropane[1,2-]	40000	0.11	5	72.7	550
54-24243	24–26	Tetrachloroethene	17000	0.754	5	4.51	3770
54-24243	24–26	Trichloro-1,2,2-trifluoroethane[1,1,2-]	240000	21.4	59000	0.00019	1.26E+09
54-24243	24–26	Trichloroethane[1,1,1-]	590000	0.705	60	13.9	42300
54-24243	24–26	Trichloroethene	200000	0.422	5	94.8	2110
54-24243	24–26	Trichlorofluoromethane	8400	4	1300	0.00162	5200000
54-24243	99–101	Benzene	2000	0.228	5	1.75	1140
54-24243	99–101	Carbon Tetrachloride	5200	1.25	5	0.832	6250
54-24243	99–101	Chloroform	30000	0.15	1.65	121	247.5
54-24243	99–101	Cyclohexane	21000 (J+)	8.2	13000	0.000197	1.07E+08
54-24243	99–101	Dichlorodifluoromethane	2000	4.1	390	0.00125	1599000
54-24243	99–101	Dichloroethane[1,1-]	27000	0.23	1220	0.0962	280600
54-24243	99–101	Dichloroethane[1,2-]	24000	0.0401	5	120	200.5

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-24243	99–101	Dichloroethene[1,1-]	310000	1.1	5	56.4	5500
54-24243	99–101	Dichloropropane[1,2-]	110000	0.11	5	200	550
54-24243	99–101	Methylene Chloride	52000	0.09	5	116	450
54-24243	99–101	Tetrachloroethene	34000	0.754	5	9.02	3770
54-24243	99–101	Trichloro-1,2,2-trifluoroethane[1,1,2-]	330000	21.4	59000	0.000261	1.26E+09
54-24243	99–101	Trichloroethane[1,1,1-]	1100000	0.705	60	26	42300
54-24243	99–101	Trichloroethene	380000	0.422	5	180	2110
54-24243	99–101	Trichlorofluoromethane	22000	4	1300	0.00423	5200000
54-24243	124–126	Benzene	2500	0.228	5	2.19	1140
54-24243	124–126	Carbon Tetrachloride	5900	1.25	5	0.944	6250
54-24243	124–126	Chloroform	29000	0.15	1.65	117	247.5
54-24243	124–126	Cyclohexane	19000 (J+)	8.2	13000	0.000178	1.07E+08
54-24243	124–126	Dichlorodifluoromethane	2200	4.1	390	0.00138	1599000
54-24243	124–126	Dichloroethane[1,1-]	22000	0.23	1220	0.0784	280600
54-24243	124–126	Dichloroethane[1,2-]	26000	0.0401	5	130	200.5
54-24243	124–126	Dichloroethene[1,1-]	320000	1.1	5	58.2	5500
54-24243	124–126	Dichloropropane[1,2-]	71000	0.11	5	129	550
54-24243	124–126	Methylene Chloride	53000	0.09	5	118	450
54-24243	124–126	Tetrachloroethene	35000	0.754	5	9.28	3770
54-24243	124–126	Trichloro-1,2,2-trifluoroethane[1,1,2-]	310000	21.4	59000	0.000246	1.26E+09
54-24243	124–126	Trichloroethane[1,1,1-]	980000	0.705	60	23.2	42300
54-24243	124–126	Trichloroethene	350000	0.422	5	166	2110
54-24243	124–126	Trichlorofluoromethane	25000	4	1300	0.00481	5200000
54-27641	30–34	Benzene	840	0.228	5	0.737	1140
54-27641	30–34	Carbon Tetrachloride	2700	1.25	5	0.432	6250
54-27641	30–34	Chloroform	5500	0.15	1.65	22.2	247.5

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-27641	30–34	Cyclohexane	26000 (J+)	8.2	13000	0.000244	1.07E+08
54-27641	30–34	Dichlorodifluoromethane	12000	4.1	390	0.0075	1599000
54-27641	30–34	Dichloroethane[1,1-]	81000	0.23	1220	0.289	280600
54-27641	30–34	Dichloroethane[1,2-]	100000	0.0401	5	499	200.5
54-27641	30–34	Dichloroethene[1,1-]	400000	1.1	5	72.7	5500
54-27641	30–34	Dichloropropane[1,2-]	3300	0.11	5	6	550
54-27641	30–34	Hexane	930	5	420	0.000443	2100000
54-27641	30–34	Methylene Chloride	50000	0.09	5	111	450
54-27641	30–34	Tetrachloroethene	160000	0.754	5	42.4	3770
54-27641	30–34	Toluene	950	0.272	750	0.00466	204000
54-27641	30–34	Trichloro-1,2,2-trifluoroethane[1,1,2-]	51000	21.4	59000	0.0000404	1.26E+09
54-27641	30–34	Trichloroethane[1,1,1-]	1200000	0.705	60	28.4	42300
54-27641	30–34	Trichloroethene	560000	0.422	5	265	2110
54-27641	30–34	Trichlorofluoromethane	12000	4	1300	0.00231	5200000
54-27641	80–84	Benzene	810	0.228	5	0.711	1140
54-27641	80–84	Carbon Tetrachloride	1900	1.25	5	0.304	6250
54-27641	80–84	Chloroform	5700	0.15	1.65	23	247.5
54-27641	80–84	Cyclohexane	21000 (J+)	8.2	13000	0.000197	1.07E+08
54-27641	80–84	Dichlorodifluoromethane	7700	4.1	390	0.00482	1599000
54-27641	80–84	Dichloroethane[1,1-]	40000	0.23	1220	0.143	280600
54-27641	80–84	Dichloroethane[1,2-]	68000	0.0401	5	339	200.5
54-27641	80–84	Dichloroethene[1,1-]	330000	1.1	5	60	5500
54-27641	80–84	Dichloropropane[1,2-]	4100	0.11	5	7.45	550
54-27641	80–84	Hexane	1500	5	420	0.000714	2100000
54-27641	80–84	Methylene Chloride	66000	0.09	5	147	450
54-27641	80–84	Tetrachloroethene	140000	0.754	5	37.1	3770

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-27641	80–84	Tetrahydrofuran	900	0.002895	8.8	35.3	25.476
54-27641	80–84	Toluene	2700	0.272	750	0.0132	204000
54-27641	80–84	Trichloro-1,2,2-trifluoroethane[1,1,2-]	34000	21.4	59000	0.0000269	1.26E+09
54-27641	80–84	Trichloroethane[1,1,1-]	920000	0.705	60	21.7	42300
54-27641	80–84	Trichloroethene	240000	0.422	5	114	2110
54-27641	80–84	Trichlorofluoromethane	7900	4	1300	0.00152	5200000
54-27641	110–114	Chloroform	6700	0.15	1.65	27.1	247.5
54-27641	110–114	Cyclohexane	19000 (J+)	8.2	13000	0.000178	1.07E+08
54-27641	110–114	Dichlorodifluoromethane	7900	4.1	390	0.00494	1599000
54-27641	110–114	Dichloroethane[1,1-]	34000	0.23	1220	0.121	280600
54-27641	110–114	Dichloroethane[1,2-]	73000	0.0401	5	364	200.5
54-27641	110–114	Dichloroethene[1,1-]	260000	1.1	5	47.3	5500
54-27641	110–114	Dichloropropane[1,2-]	4600	0.11	5	8.36	550
54-27641	110–114	Methylene Chloride	37000	0.09	5	82.2	450
54-27641	110–114	Tetrachloroethene	98000	0.754	5	26	3770
54-27641	110–114	Trichloro-1,2,2-trifluoroethane[1,1,2-]	24000	21.4	59000	0.000019	1.26E+09
54-27641	110–114	Trichloroethane[1,1,1-]	1200000	0.705	60	28.4	42300
54-27641	110–114	Trichloroethene	260000	0.422	5	123	2110
54-27641	110–114	Trichlorofluoromethane	7000	4	1300	0.00135	5200000
54-27641	180–185	Carbon Tetrachloride	1600	1.25	5	0.256	6250
54-27641	180–185	Chloroform	3400	0.15	1.65	13.7	247.5
54-27641	180–185	Cyclohexane	12000 (J+)	8.2	13000	0.000113	1.07E+08
54-27641	180–185	Dichlorodifluoromethane	3700	4.1	390	0.00231	1599000
54-27641	180–185	Dichloroethane[1,1-]	16000	0.23	1220	0.057	280600
54-27641	180–185	Dichloroethane[1,2-]	9600	0.0401	5	47.9	200.5
54-27641	180–185	Dichloroethene[1,1-]	210000	1.1	5	38.2	5500

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-27641	180–185	Dichloropropane[1,2-]	1600	0.11	5	2.91	550
54-27641	180–185	Methylene Chloride	22000	0.09	5	48.9	450
54-27641	180–185	Tetrachloroethene	21000	0.754	5	5.57	3770
54-27641	180–185	Trichloro-1,2,2-trifluoroethane[1,1,2-]	27000	21.4	59000	0.0000214	1.26E+09
54-27641	180–185	Trichloroethane[1,1,1-]	550000	0.705	60	13	42300
54-27641	180–185	Trichloroethene	160000	0.422	5	75.8	2110
54-27641	180–185	Trichlorofluoromethane	4600	4	1300	0.000885	5200000
54-27641	230–235	Carbon Tetrachloride	1100	1.25	5	0.176	6250
54-27641	230–235	Chloroform	1500	0.15	1.65	6.06	247.5
54-27641	230–235	Cyclohexane	7000 (J+)	8.2	13000	0.0000657	1.07E+08
54-27641	230–235	Dichlorodifluoromethane	2900	4.1	390	0.00181	1599000
54-27641	230–235	Dichloroethane[1,1-]	6200	0.23	1220	0.0221	280600
54-27641	230–235	Dichloroethane[1,2-]	940	0.0401	5	4.69	200.5
54-27641	230–235	Dichloroethene[1,1-]	68000	1.1	5	12.4	5500
54-27641	230–235	Methylene Chloride	7000	0.09	5	15.6	450
54-27641	230–235	Tetrachloroethene	11000	0.754	5	2.92	3770
54-27641	230–235	Trichloro-1,2,2-trifluoroethane[1,1,2-]	23000	21.4	59000	0.0000182	1.26E+09
54-27641	230–235	Trichloroethane[1,1,1-]	320000	0.705	60	7.57	42300
54-27641	230–235	Trichloroethene	87000	0.422	5	41.2	2110
54-27641	230–235	Trichlorofluoromethane	3500	4	1300	0.000673	5200000
54-27641	269–273	Carbon Tetrachloride	820	1.25	5	0.131	6250
54-27641	269–273	Chloroform	570	0.15	1.65	2.3	247.5
54-27641	269–273	Cyclohexane	3200 (J+)	8.2	13000	0.00003	1.07E+08
54-27641	269–273	Dichlorodifluoromethane	2000	4.1	390	0.00125	1599000
54-27641	269–273	Dichloroethane[1,1-]	1800	0.23	1220	0.00641	280600
54-27641	269–273	Dichloroethene[1,1-]	21000	1.1	5	3.82	5500

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-27641	269–273	Hexane	130	5	420	0.0000619	2100000
54-27641	269–273	Methylene Chloride	1600	0.09	5	3.56	450
54-27641	269–273	Tetrachloroethene	5400	0.754	5	1.43	3770
54-27641	269–273	Trichloro-1,2,2-trifluoroethane[1,1,2-]	18000	21.4	59000	0.0000143	1.26E+09
54-27641	269–273	Trichloroethane[1,1,1-]	140000	0.705	60	3.31	42300
54-27641	269–273	Trichloroethene	37000	0.422	5	17.5	2110
54-27641	269–273	Trichlorofluoromethane	2700	4	1300	0.000519	5200000
54-27641	330–335	Carbon Tetrachloride	170	1.25	5	0.0272	6250
54-27641	330–335	Chloroform	44	0.15	1.65	0.178	247.5
54-27641	330–335	Cyclohexane	210 (J+)	8.2	13000	0.00000197	1.07E+08
54-27641	330–335	Dichlorodifluoromethane	460	4.1	390	0.000288	1599000
54-27641	330–335	Dichloroethane[1,1-]	120	0.23	1220	0.000428	280600
54-27641	330–335	Dichloroethane[1,2-]	36	0.0401	5	0.18	200.5
54-27641	330–335	Dichloroethene[1,1-]	3700	1.1	5	0.673	5500
54-27641	330–335	Methylene Chloride	54	0.09	5	0.12	450
54-27641	330–335	Tetrachloroethene	990	0.754	5	0.263	3770
54-27641	330–335	Trichloro-1,2,2-trifluoroethane[1,1,2-]	3400	21.4	59000	0.00000269	1.26E+09
54-27641	330–335	Trichloroethane[1,1,1-]	9600	0.705	60	0.227	42300
54-27641	330–335	Trichloroethene	4400	0.422	5	2.09	2110
54-27641	330–335	Trichlorofluoromethane	760	4	1300	0.000146	5200000
54-27642	27.5–32.5	Dichloroethene[1,1-]	43000	1.1	5	7.82	5500
54-27642	27.5–32.5	Dichloropropane[1,2-]	76000	0.11	5	138	550
54-27642	27.5–32.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	380000	21.4	59000	0.000301	1.26E+09
54-27642	27.5–32.5	Trichloroethane[1,1,1-]	3400000	0.705	60	80.4	42300
54-27642	27.5–32.5	Trichloroethene	250000	0.422	5	118	2110
54-27642	72.5–77.5	Chloroform	38000	0.15	1.65	154	247.5

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-27642	72.5–77.5	Dichloroethane[1,1-]	26000	0.23	1220	0.0927	280600
54-27642	72.5–77.5	Dichloroethane[1,2-]	28000	0.0401	5	140	200.5
54-27642	72.5–77.5	Dichloroethene[1,1-]	69000	1.1	5	12.5	5500
54-27642	72.5–77.5	Dichloropropane[1,2-]	91000	0.11	5	165	550
54-27642	72.5–77.5	Methylene Chloride	24000	0.09	5	53.3	450
54-27642	72.5–77.5	Tetrachloroethene	52000	0.754	5	13.8	3770
54-27642	72.5–77.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	390000	21.4	59000	0.000309	1.26E+09
54-27642	72.5–77.5	Trichloroethane[1,1,1-]	2100000	0.705	60	49.6	42300
54-27642	72.5–77.5	Trichloroethene	430000	0.422	5	204	2110
54-27642	72.5–77.5	Trichlorofluoromethane	32000	4	1300	0.00615	5200000
54-27642	113.5–118.5	Dichloroethene[1,1-]	59000	1.1	5	10.7	5500
54-27642	113.5–118.5	Dichloropropane[1,2-]	150000	0.11	5	273	550
54-27642	113.5–118.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	500000	21.4	59000	0.000396	1.26E+09
54-27642	113.5–118.5	Trichloroethane[1,1,1-]	2700000	0.705	60	63.8	42300
54-27642	113.5–118.5	Trichloroethene	430000	0.422	5	204	2110
54-27642	232–237.5	Chloroform	19000	0.15	1.65	76.8	247.5
54-27642	232–237.5	Dichloroethene[1,1-]	72000	1.1	5	13.1	5500
54-27642	232–237.5	Methylene Chloride	63000	0.09	5	140	450
54-27642	232–237.5	Tetrachloroethene	19000	0.754	5	5.04	3770
54-27642	232–237.5	Toluene	18000	0.272	750	0.0882	204000
54-27642	232–237.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	250000	21.4	59000	0.000198	1.26E+09
54-27642	232–237.5	Trichloroethane[1,1,1-]	690000	0.705	60	16.3	42300
54-27642	232–237.5	Trichloroethene	210000	0.422	5	99.5	2110
54-27642	232–237.5	Trichlorofluoromethane	29000	4	1300	0.00558	5200000
54-27642	272–277.5	Chloroform	8700	0.15	1.65	35.2	247.5
54-27642	272–277.5	Dichloroethene[1,1-]	48000	1.1	5	8.73	5500

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-27642	272–277.5	Methylene Chloride	25000	0.09	5	55.6	450
54-27642	272–277.5	Tetrachloroethene	9900	0.754	5	2.63	3770
54-27642	272–277.5	Toluene	6500	0.272	750	0.0319	204000
54-27642	272–277.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	150000	21.4	59000	0.000119	1.26E+09
54-27642	272–277.5	Trichloroethane[1,1,1-]	330000	0.705	60	7.8	42300
54-27642	272–277.5	Trichloroethene	110000	0.422	5	52.1	2110
54-27642	272–277.5	Trichlorofluoromethane	15000	4	1300	0.00288	5200000
54-27642	335–341	Chloroform	1600	0.15	1.65	6.46	247.5
54-27642	335–341	Dichloroethene[1,1-]	24000	1.1	5	4.36	5500
54-27642	335–341	Methylene Chloride	3400	0.09	5	7.56	450
54-27642	335–341	Tetrachloroethene	2600	0.754	5	0.69	3770
54-27642	335–341	Trichloro-1,2,2-trifluoroethane[1,1,2-]	53000	21.4	59000	0.000042	1.26E+09
54-27642	335–341	Trichloroethane[1,1,1-]	89000	0.705	60	2.1	42300
54-27642	335–341	Trichloroethene	35000	0.422	5	16.6	2110
54-27642	335–341	Trichlorofluoromethane	5000	4	1300	0.000962	5200000
54-27643	27.5–32.5	Carbon Tetrachloride	3100	1.25	5	0.496	6250
54-27643	27.5–32.5	Chloroform	13000	0.15	1.65	52.5	247.5
54-27643	27.5–32.5	Cyclohexane	5100 (J+)	8.2	13000	0.0000478	1.07E+08
54-27643	27.5–32.5	Dichlorodifluoromethane	800	4.1	390	0.0005	1599000
54-27643	27.5–32.5	Dichloroethane[1,1-]	6000	0.23	1220	0.0214	280600
54-27643	27.5–32.5	Dichloroethane[1,2-]	5200	0.0401	5	25.9	200.5
54-27643	27.5–32.5	Dichloroethene[1,1-]	100000	1.1	5	18.2	5500
54-27643	27.5–32.5	Dichloropropane[1,2-]	25000	0.11	5	45.5	550
54-27643	27.5–32.5	Methylene Chloride	410	0.09	5	0.911	450
54-27643	27.5–32.5	Tetrachloroethene	28000	0.754	5	7.43	3770
54-27643	27.5–32.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	54000	21.4	59000	0.0000428	1.26E+09

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-27643	27.5–32.5	Trichloroethane[1,1,1-]	340000	0.705	60	8.04	42300
54-27643	27.5–32.5	Trichloroethene	93000	0.422	5	44.1	2110
54-27643	27.5–32.5	Trichlorofluoromethane	10000	4	1300	0.00192	5200000
54-27643	71.5–76.5	Benzene	1100	0.228	5	0.965	1140
54-27643	71.5–76.5	Carbon Tetrachloride	4300	1.25	5	0.688	6250
54-27643	71.5–76.5	Chlorobenzene	980	0.15	100	0.0653	15000
54-27643	71.5–76.5	Chloroform	19000	0.15	1.65	76.8	247.5
54-27643	71.5–76.5	Cyclohexane	7000 (J+)	8.2	13000	0.0000657	1.07E+08
54-27643	71.5–76.5	Dichlorodifluoromethane	1200	4.1	390	0.00075	1599000
54-27643	71.5–76.5	Dichloroethane[1,1-]	7900	0.23	1220	0.0282	280600
54-27643	71.5–76.5	Dichloroethane[1,2-]	13000	0.0401	5	64.8	200.5
54-27643	71.5–76.5	Dichloroethene[1,1-]	130000	1.1	5	23.6	5500
54-27643	71.5–76.5	Dichloropropane[1,2-]	32000	0.11	5	58.2	550
54-27643	71.5–76.5	Methylene Chloride	10000	0.09	5	22.2	450
54-27643	71.5–76.5	Tetrachloroethene	30000	0.754	5	7.96	3770
54-27643	71.5–76.5	Tetrahydrofuran	20000	0.002895	8.8	785	25.476
54-27643	71.5–76.5	Toluene	1900	0.272	750	0.00931	204000
54-27643	71.5–76.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	78000	21.4	59000	0.0000618	1.26E+09
54-27643	71.5–76.5	Trichloroethane[1,1,1-]	470000	0.705	60	11.1	42300
54-27643	71.5–76.5	Trichloroethene	130000	0.422	5	61.6	2110
54-27643	71.5–76.5	Trichlorofluoromethane	18000	4	1300	0.00346	5200000
54-27643	71.5–76.5	Xylene[1,2-]	1800	0.213	10000	0.000845	2130000
54-27643	114.5–119.5	Benzene	1800	0.228	5	1.58	1140
54-27643	114.5–119.5	Carbon Tetrachloride	4400	1.25	5	0.704	6250
54-27643	114.5–119.5	Chlorobenzene	1100	0.15	100	0.0733	15000
54-27643	114.5–119.5	Chloroform	22000	0.15	1.65	88.9	247.5

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-27643	114.5–119.5	Cyclohexane	7200 (J+)	8.2	13000	0.0000675	1.07E+08
54-27643	114.5–119.5	Dichlorodifluoromethane	1700	4.1	390	0.00106	1599000
54-27643	114.5–119.5	Dichloroethane[1,1-]	7900	0.23	1220	0.0282	280600
54-27643	114.5–119.5	Dichloroethane[1,2-]	16000	0.0401	5	79.8	200.5
54-27643	114.5–119.5	Dichloroethene[1,1-]	140000	1.1	5	25.5	5500
54-27643	114.5–119.5	Dichloropropane[1,2-]	30000	0.11	5	54.5	550
54-27643	114.5–119.5	Hexane	520	5	420	0.000248	2100000
54-27643	114.5–119.5	Methylene Chloride	26000	0.09	5	57.8	450
54-27643	114.5–119.5	Tetrachloroethene	28000	0.754	5	7.43	3770
54-27643	114.5–119.5	Tetrahydrofuran	2100	0.002895	8.8	82.4	25.476
54-27643	114.5–119.5	Toluene	6000	0.272	750	0.0294	204000
54-27643	114.5–119.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	98000	21.4	59000	0.0000776	1.26E+09
54-27643	114.5–119.5	Trichloroethane[1,1,1-]	500000	0.705	60	11.8	42300
54-27643	114.5–119.5	Trichloroethene	150000	0.422	5	71.1	2110
54-27643	114.5–119.5	Trichlorofluoromethane	23000	4	1300	0.00442	5200000
54-27643	114.5–119.5	Xylene[1,2-]	2500	0.213	10000	0.00117	2130000
54-27643	232.5–237.5	Benzene	2700	0.228	5	2.37	1140
54-27643	232.5–237.5	Carbon Tetrachloride	4700	1.25	5	0.752	6250
54-27643	232.5–237.5	Chloroform	16000	0.15	1.65	64.6	247.5
54-27643	232.5–237.5	Cyclohexane	5300 (J+)	8.2	13000	0.0000497	1.07E+08
54-27643	232.5–237.5	Dichlorodifluoromethane	3000	4.1	390	0.00188	1599000
54-27643	232.5–237.5	Dichloroethane[1,1-]	3600	0.23	1220	0.0128	280600
54-27643	232.5–237.5	Dichloroethane[1,2-]	2700	0.0401	5	13.5	200.5
54-27643	232.5–237.5	Dichloroethene[1,1-]	91000	1.1	5	16.5	5500
54-27643	232.5–237.5	Dichloropropane[1,2-]	7400	0.11	5	13.5	550
54-27643	232.5–237.5	Hexane	2200	5	420	0.00105	2100000

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-27643	232.5–237.5	Methylene Chloride	37000	0.09	5	82.2	450
54-27643	232.5–237.5	Tetrachloroethene	16000	0.754	5	4.24	3770
54-27643	232.5–237.5	Toluene	9100	0.272	750	0.0446	204000
54-27643	232.5–237.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	120000	21.4	59000	0.000095	1.26E+09
54-27643	232.5–237.5	Trichloroethane[1,1,1-]	360000	0.705	60	8.51	42300
54-27643	232.5–237.5	Trichloroethene	140000	0.422	5	66.4	2110
54-27643	232.5–237.5	Trichlorofluoromethane	22000	4	1300	0.00423	5200000
54-27643	272.5–278.5	Benzene	1800	0.228	5	1.58	1140
54-27643	272.5–278.5	Carbon Tetrachloride	3800	1.25	5	0.608	6250
54-27643	272.5–278.5	Chloroform	9900	0.15	1.65	40	247.5
54-27643	272.5–278.5	Cyclohexane	3100 (J+)	8.2	13000	0.0000291	1.07E+08
54-27643	272.5–278.5	Dichlorodifluoromethane	2700	4.1	390	0.00169	1599000
54-27643	272.5–278.5	Dichloroethane[1,1-]	2100	0.23	1220	0.00748	280600
54-27643	272.5–278.5	Dichloroethane[1,2-]	490	0.0401	5	2.44	200.5
54-27643	272.5–278.5	Dichloroethene[1,1-]	88000	1.1	5	16	5500
54-27643	272.5–278.5	Dichloropropane[1,2-]	2400	0.11	5	4.36	550
54-27643	272.5–278.5	Hexane	2200	5	420	0.00105	2100000
54-27643	272.5–278.5	Methylene Chloride	22000	0.09	5	48.9	450
54-27643	272.5–278.5	Tetrachloroethene	11000	0.754	5	2.92	3770
54-27643	272.5–278.5	Toluene	4600	0.272	750	0.0225	204000
54-27643	272.5–278.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	96000	21.4	59000	0.000076	1.26E+09
54-27643	272.5–278.5	Trichloroethane[1,1,1-]	190000	0.705	60	4.49	42300
54-27643	272.5–278.5	Trichloroethene	99000	0.422	5	46.9	2110
54-27643	272.5–278.5	Trichlorofluoromethane	17000	4	1300	0.00327	5200000
54-27643	351–356.5	Benzene	480	0.228	5	0.421	1140
54-27643	351–356.5	Carbon Tetrachloride	1800	1.25	5	0.288	6250

Table 5.4-1 (continued)

Location ID	Depth (ft)	VOC	Std Result (µg/m³)	H'	SL (µg/L)	SV	Screen Concentration (µg/m³)
54-27643	351–356.5	Chloroform	1400	0.15	1.65	5.66	247.5
54-27643	351–356.5	Cyclohexane	1100 (J+)	8.2	13000	0.0000103	1.07E+08
54-27643	351–356.5	Dichlorodifluoromethane	1500	4.1	390	0.000938	1599000
54-27643	351–356.5	Dichloroethane[1,1-]	320	0.23	1220	0.00114	280600
54-27643	351–356.5	Dichloroethene[1,1-]	21000	1.1	5	3.82	5500
54-27643	351–356.5	Dichloropropane[1,2-]	87	0.11	5	0.158	550
54-27643	351–356.5	Hexane	1200	5	420	0.000571	2100000
54-27643	351–356.5	Methylene Chloride	2200	0.09	5	4.89	450
54-27643	351–356.5	Tetrachloroethene	2700	0.754	5	0.716	3770
54-27643	351–356.5	Toluene	530	0.272	750	0.0026	204000
54-27643	351–356.5	Trichloro-1,2,2-trifluoroethane[1,1,2-]	34000	21.4	59000	0.0000269	1.26E+09
54-27643	351–356.5	Trichloroethane[1,1,1-]	62000	0.705	60	1.47	42300
54-27643	351–356.5	Trichloroethene	25000	0.422	5	11.8	2110
54-27643	351–356.5	Trichlorofluoromethane	5400	4	1300	0.00104	5200000

Table 5.4-2
Summary of VOCs with SVs Greater Than 1

VOC	Number of Detections with SV >1	Maximum SV	Depth Interval of Maximum SV (ft bgs)
Benzene	6	2.37	232.5–237.5
Chloroform	35	154	72.5–77.5
1,2-Dichloroethane	33	2090	27–29
1,1-Dichloroethene	41	104	27–29
1,2-Dichloropropane	31	436	83–85
Methylene Chloride	25	147	80–84
Tetrachloroethene	37	154	98.5–100.5
Tetrahydrofuran	3	785	71.5–76.5
1,1,1-Trichloroethane	41	80.4	27.5–32.5
Trichloroethene	42	403	27–29

Appendix A

Quality Assurance/Quality Control Program

A-1.0 INTRODUCTION

In accordance with Section XI.D.13.b of the Compliance Order on Consent, this appendix discusses analytical methods, data quality objectives, and data quality review. Additionally, this appendix summarizes the effects of data quality exceptions on the acceptability of the field and laboratory analytical data as they impact the site status of Material Disposal Area (MDA) L at Los Alamos National Laboratory (the Laboratory).

Quality assurance (QA), quality control (QC), and data validation procedures were implemented in accordance with the Laboratory's "Quality Assurance Project Plan Requirements for Sampling and Analysis" (LANL 1996, 054609) and its statement of work for analytical services (LANL 2000, 071233). The results of the QA/QC activities were used to estimate the accuracy, bias, and precision of the analytical measurements. QC samples, including method blanks, blank spikes, matrix spikes, laboratory control samples (LCSs), internal standards, initial and continuing calibrations, surrogates, and tracers, were used to assess laboratory accuracy and bias.

The type and frequency of QC analyses are described in the analytical services contract. Other QC factors, such as sample preservation and holding times, were also assessed. The requirements for sample preservation and holding times are given in the Environmental Programs Directorate Standard Operating Procedure (SOP) 01.02, Sample Containers and Preservation. Evaluating these QC indicators allows estimates to be made of the accuracy, bias, and precision of the analytical suites. A focused data validation was also performed for all the data packages (identified by request number). The procedures used for data validation are given in Table A-1.0-1. The focused validation followed the same procedure discussed above and included a more detailed review of the raw data results generated by the analytical laboratory. Copies of the raw analytical data, laboratory logbooks, and instrument printouts used during focused validation are provided in data packages as part of Appendix B (on CD included with this document).

Analytical data were reviewed and evaluated based on U.S. Environmental Protection Agency (EPA) National Functional Guidelines for inorganic and organic chemical data review where applicable (EPA 1994, 048639; EPA 1999, 066649). Data have also been assessed using guidelines established in SW-846 (EPA 1997, 057589). As a result of the data validation and assessment efforts, qualifiers have been assigned to each analytical record. Definitions for the data qualifiers used in data validation are given in Table A-1.0-2. Data validators and reviewers made judgments about the following industry-accepted QA/QC analytical quality functions.

Maintenance of Chain of Custody

To maintain chain of custody (COC) is to document or demonstrate the possession of an item by only authorized individuals. The COC process provides confidence in, and documentation of, analytical data integrity by establishing the traceability of the sample from the time of collection through processing to final maintenance as a record.

Sample Documentation

Establishing sample documentation acceptability is the first step toward verifying that an analytical system has produced data of known quality. Documentation is dependent upon the accessibility of review items that accurately and completely describe the work performed. In the absence of adequate sample documentation, data quality cannot be independently verified.

Sample Preservation

Sample preservation is the use of specific types of sample containers and preservation techniques. Sample preservation is mandatory for hazardous site investigations because the integrity of any sample decreases over time. Physical factors (light, pressure, temperature, etc.), chemical factors (changes in pH, volatilization, etc.), and biological factors may alter the original quality of a sample. Because the various target parameters are uniquely altered at varying rates, distinct sample containers, preservation techniques, and holding times have been established to maintain sample integrity for a reasonable and acceptable period of time.

Holding Time

Holding time is the maximum amount of time a sample can be stored without unacceptable changes in analyte concentrations. Holding times apply under prescribed conditions; deviations from these conditions may affect the holding time. Extraction holding time refers to the time that lapses between sample collection and sample preparation; analytical holding time refers to the time that lapses between sample preparation and analysis.

Initial and Continuing Calibration Verification (Including Interference-Check Standards)

Calibration verification is the establishment of a quantitative relationship between the response of the analytical procedure and the concentration of the target analyte. There are two aspects of calibration verification: initial and continuing. The initial calibration verifies the accuracy of the calibration curve as well as the individual calibration standards being used to perform the calibration. The continuing calibration ensures that the initial calibration is still holding and correct as the instrument is used to process samples. Interference-check samples are used to determine if a high concentration of a single analyte in a sample interferes with the accurate quantitation of other analytes.

Analyte Identification (Including Spectra Review and Thermal Ionization Cavity Review)

Analyte identification is the process of associating an instrument signal with a compound or analyte of interest. Evaluation of signal retention times, spectral overlap, multipeak pattern matching, and mass spectral library searches are tools to identify analytes.

Analyte Quantitation

Analyte quantitation is the association of an instrument signal with a concentration, and the determination that a recorded signal is detected or not detected. Detection limits, instrument calibration linear ranges, internal standards, and carrier recoveries are tools for making analyte quantitation evaluations.

Organic and inorganic chemical results are considered to be not detected if reported results are less than or equal to the method detection limit adjusted by sample-specific dilution or concentration factors.

Radiochemical results reported with values less than the minimum detectable activity are considered to be not detected (U). Each radiochemical result is also compared to the corresponding 1-sigma total propagated uncertainty (TPU). If the result is not greater than 3 times the TPU, it is also qualified as not detected.

Method Blank

A method blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as those used in the environmental sample processing and which is extracted and analyzed in the same manner as the corresponding environmental samples. Method blanks are used to assess the potential for sample contamination during extraction and analysis. All target analytes should be below the contract-required detection limit in the method blank (LANL 2000, 071233).

Matrix Spike Recoveries

A matrix spike is an aliquot of sample spiked with a known concentration of the target analyte(s). Matrix spike samples are used to measure the ability to recover prescribed analytes from a native sample matrix. Spiking typically occurs before sample preparation and analysis. Acceptable percentage recoveries for matrix spikes vary by method but should generally be greater than 10% for an analytical result to be usable (LANL 2000, 071233).

Surrogate and Tracer Recoveries

A surrogate (an organic chemical compound) and a tracer (a radiochemical isotope) are similar in composition and behavior to target analytes but are not typically found in environmental samples. Surrogates and tracers are added to every blank, sample, and spike to evaluate the efficiency with which target analytes are recovered during extraction and analysis. The recovery percentages of the surrogates and tracers vary by method but should generally be greater than 10% for an analytical result to be usable (LANL 2000, 071233).

Internal Standard Responses and Carrier Recoveries

Internal standards and carriers are chemical compounds that are added to blank, sample, and standard extracts at known concentrations. They are used to compensate for (1) analyte concentration changes that might occur during storage of the extract and (2) quantitation variations that can occur during analysis. Internal standard responses and carrier recoveries are used to adjust the reported concentrations for the quantitation of target analytes. The response factors for internal standards vary by method but should generally be within the range of $\geq$50% to $\leq$200%. The recoveries for carriers vary by method but should generally be greater than 10% for an analytical result to be usable (LANL 2000, 071233).

LCS Recoveries

An LCS is a known matrix that has been spiked with compound(s) which are representative of the target analytes. The LCS is used to document laboratory performance. The acceptance criteria for LCSs are method-specific but should generally be greater than 10% for an analytical result to be usable (LANL 2000, 071233).

Laboratory and Field Duplicates (Including Serial Dilutions)

Laboratory duplicates are two portions of a sample taken from the same sample container (prepared for analysis and analyzed independently but under identical conditions) and are used to assess or demonstrate acceptable laboratory-method precision at the time of analysis. Each duplicate sample is equally representative of the original material. Duplicate analyses are also performed to generate data and to determine the long-term precision of an analytical method on various matrices. All relative percent differences (RPDs) between samples and field duplicates should be $\pm$35% (LANL 2000, 071233). RPD is

defined by the equation RPD = [|D1 – D2| / (D1 + D2)] × 100%, where *D1* and *D2* represent analytical measurements on duplicate samples.

For radionuclides, the duplicate error ratio (DER) may also be used to quantify precision. DER is defined by the equation DER = |S–D| / sqrt($2\sigma S^2 + 2\sigma D^2$), where *S* represents the original sample value, *D* represents the duplicate value, and *2σS* and *2σD* represent the 2-sigma uncertainties surrounding the original and duplicate samples, respectively. A DER below 3 indicates sample-to-field-duplicate precision that is in control.

Field duplicates are independent samples that are collected as closely as possible to the same point in space and time. They are two separate samples taken from the same source, stored in separate containers, and analyzed independently.

Serial dilution checks are performed for certain inorganic analyses to determine if dilutions have been prepared correctly, and to identify any effects that may arise from characteristics of the sample matrix.

Trip Blanks, Field Blanks, and Rinsate Blanks

Trip blanks, field blanks, and rinsate blanks are all collected and analyzed to establish whether concentration values assigned to an analyte or compound are attributable to contamination of the analytical system or to the presence of the analyte in the samples collected.

Trip blank—a sample of analyte-free medium that is taken to the sampling site and returned unopened to an analytical laboratory. Trip blanks are used to identify contamination attributable to shipping or handling procedures in the field. Trip blanks are required for all field events that include collecting volatile samples.

Field blank—a sample of analyte-free medium that is taken to the sampling site and exposed to the atmosphere during sample-collection activities. Field blanks are used to measure contamination introduced during sample collection.

Equipment rinsate blank—a sample of analyte-free medium that has been used to rinse the sampling equipment. It is collected after completion of decontamination and before sampling. Equipment rinsate blanks are used to assess the cleanliness of sampling equipment.

A-2.0 LABORATORY ANALYSIS SUMMARY

During the first quarter of fiscal year (FY) 2008, 42 pore-gas samples, 2 field duplicate samples, 3 field blank samples, and 2 performance evaluation samples were collected for volatile organic compounds (VOCs), and 19 pore-gas samples and one field duplicate sample were collected for tritium at Solid Waste Management Unit (SWMU) 54-006. Analysis of pore gas was conducted for VOCs using EPA Method TO-15 and for tritium using EPA Method 906.0. All QC procedures were followed as required by the analytical services contract. Table A-2.0-1 lists the analytical methods used for radiochemical and organic chemical analyses.

The data, including the qualified data, are usable for evaluation and interpretive purposes. The entire data set meets the standards set for use in this report.

The analytical methods used for radionuclides, inorganic chemicals, and organic chemicals are summarized in the following sections. The required estimated detection limit (EDL) or estimated quantitation limit (EQL) for each analyte is defined in the analytical services contract.

A-3.0 ORGANIC CHEMICAL ANALYSES

The summaries for these analyses are presented in the sections below. All QC procedures were followed as required by the analytical services contract.

Maintenance of COC

COC was properly maintained for all samples.

Sample Documentation and Dilutions

Samples were properly documented in the field.

Sample Preservation

Preservation criteria were met for all samples.

Holding Time

Holding times were met for all samples.

Initial and Continuing Calibration Verification

Initial acceptance criteria were met for all sample analyses. Continuing calibration percent differences (%D) were greater than 25% affecting EPA Method TO-15 analyses of 114 nondetected organic chemical analytical records. Affected records were qualified as being an estimate of their sample-specific quantitation limit.

Analyte Identification (Including Internal Standards, Spectra Review, and Thermal Ionization Cavity Review)

Analyte identification criteria were met for internal standard and thermal ionization cavity criteria for each sample analyses. Results for 19 records are considered not detected (U) because their associated mass spectra did not meet method specifications.

Analyte Quantitation

Analyte quantitation criteria were met for all sample analyses.

Method Blank

Method blank results for organic chemical analyses were within acceptable limits for all sample analyses.

Matrix Spike Recoveries

All matrix spike recoveries for organic chemical analyses were within acceptable limits.

Surrogate Recoveries

All surrogate recoveries for organic chemical analyses were within acceptable limits.

Internal Standard Responses

All internal standard responses for organic chemical analyses were within acceptable limits.

LCS Recoveries

LCS recoveries were within acceptable limits for all EPA Method TO-15 chemical analyses.

Laboratory and Field Duplicates

Laboratory and field duplicates collected for organic chemical analyses indicate acceptable precision for all analyses.

Trip Blanks, Field Blanks, and Rinsate Blanks

Trip blank and rinsate blank samples are not collected during VOC SUMMA sampling.

Two equipment blanks collected on December 27, 2007, for EPA Method TO-15 analysis contained detectable amounts of tetrachloroethene; 1,1,1-trichloroethane (TCA); and trichloroethene (TCE). Equipment blank concentrations within 5 times the concentration of samples analyzed indicate that the analyte detected in these samples could be the result of contamination. Detected field blank results do not impact the investigation or site status. No sample records were affected by field blank contamination.

A-4.0 RADIONUCLIDE ANALYSES

Maintenance of COC

COC was properly maintained for all samples.

Sample Documentation and Dilutions

Samples were properly documented in the field.

Sample Preservation

Preservation criteria were met for all samples.

Holding Times

Holding times were met for all radionuclide analyses.

Initial and Continuing Calibration Verification

Initial and continuing calibrations are acceptable for all radionuclide analyses.

Analyte Identification

Analyte identification criteria were met for all radionuclide analyses.

Analyte Quantitation

Analyte quantitation criteria were met for all radionuclide analyses.

Method Blanks

The method blank results for radionuclide analyses were within acceptable limits all sample results.

Matrix Spike Recoveries

The matrix spike recoveries for radionuclide analyses were within acceptable limits for all the analyses.

Carrier and Tracer Recoveries

Tracer and carrier recoveries for radionuclide analyses were within acceptable limits for all analyses.

LCS Recoveries

The LCS recoveries for radionuclide analyses were within acceptable limits for all analyses.

Laboratory and Field Duplicates

Laboratory duplicates collected for all radionuclide analyses indicate acceptable precision.

Field duplicates collected for radionuclide analyses indicate acceptable precision for all results.

Trip, Field, and Rinsate Blanks

Field blank samples were not collected for radionuclide analyses.

A-5.0 FIELD-MONITORING SUMMARY

Field-monitoring data are less costly to generate than laboratory data and are immediately available to guide field decisions. Field-monitoring results are generated by rapid methods of analysis that provide less precision than laboratory analyses. Field-monitoring data provide analyte (or at least chemical class) identification and quantification, although the quantification may be relatively imprecise.

Field monitoring of subsurface vapor monitoring at MDA L is conducted using guidance provided in SOP-06.31, Sampling of Subatmospheric Air. This procedure covers the use of the Brüel and Kjær (B&K) Type 1302 multigas analyzer and Landtec GEM 500 photoionization detector (PID).

The B&K is calibrated annually by a certified calibration laboratory. The B&K is adjusted before each day's use to compensate for ambient pressure and temperature. Calibration is confirmed before each day's use by analyzing triplicate readings of ambient air and duplicate readings of known quantities of mixed organic analytes in nitrogen. These calibration verification check analyses confirm analytical stability, confirm that the instrument zero point for each analyte is correctly set, and confirm that the stored calibration curve remains applicable to current instrument response to the presence of organic analytes. Concentrations of calibration standards analyzed before each day's use are expected be within ±20% of their known values. Additionally, during each sample analyses a low sample flow condition triggers an alarm on the B&K and VOC measurement is then not completed.

The presence of nontarget organic chemicals bias B&K target analyte results if they have an acoustic response to infrared light that is similar to the target analyte. Trichlorofluoromethane (Freon 11) generates a measurable acoustic signal in response to light with a wavelength of 11.6 µm that is proportional to its concentration. Other VOCs generating an acoustic signal to light at this wavelength include Freon 114 (CAS 76-14-2; 1,2-dichloro-1,1,2,2-tetrafluoroethane) and Freon 21 (CAS 75-43-4), which is not reported by EPA Method TO-15. Tetrachloroethene (PCE) generates an acoustic signal in response to light with a wavelength of 11.1 µm. Other VOCs responding to light at this wavelength include styrene (CAS 100-42-5); Freon 113 (CAS 76-13-1), which is not reported by EPA Method TO-15; Freon 12 (CAS 75-71-8, dichlorodifluoromethane); ethanol (CAS 64-17-5); and 1,1-dichloroethene (CAS 75-35-4). EPA Method TO-15 analytical results indicate that 1,1-dichloroethene and Freon 113 are present in most samples at MDA L at detectable concentrations that would be included in the signal interpreted as PCE. Table A-4.0-1 presents VOCs that interfere with each of the four B&K target analytes.

Analytical data generated using the B&K Type 1302 are supported by annual calibration records that bracket the periods of analyses. Calibration information is reported below for each of the two B&K photoacoustic analyzers used to generate results presented in this periodic monitoring report.

- The B&K with serial number 1692083 was calibrated on July 3, 2007. The zero point was set for TCA, TCE, Freon 11, PCE, carbon dioxide (CO_2), and water (H_2O). Span concentrations of TCA at 61.4 parts per million (ppm), TCE at 8.1 ppm, Freon 11 at 53 ppm, PCE at 19.24 ppm, and CO_2 at 1265 ppm were used to generate calibration response curves.
- The B&K with serial number 1732805 was calibrated on July 12, 2007. The zero point was set for TCA, TCE, Freon 11, PCE, CO_2, and H_2O. Span concentrations of TCA at 47.1 ppm, TCE at 49.7 ppm, Freon 11 at 53.0 ppm, PCE at 48.4 ppm, and CO_2 at 0.126% were used to generate calibration response curves.

The Landtec GEM 500 PID is calibrated annually by a certified calibration laboratory. During calibration, methane (CH_4), oxygen (O_2), and CO_2 zero points are set, and each analyte's calibration response curves are developed. The CH_4 reading is filtered to an infrared absorption frequency of 3.41 mm (nominal), the frequency specific to hydrocarbon bonds. Landtec instruments are calibrated using certified CH_4 mixtures and will give correct readings provided no other hydrocarbon gasses are present in the sample (e.g., ethane, propane, butane, etc.). If other hydrocarbons are present, the CH_4 reading will be higher (never lower) than the actual CH_4 concentration being monitored. The extent to which the CH_4 reading is affected depends upon the concentration of the CH_4 in the sample and the concentration of the other hydrocarbons. The effect of other hydrocarbons is nonlinear and difficult to predict. The CO_2 reading is filtered to an infrared absorption frequency of 4.29 µm (nominal), the frequency specific to CO_2. Therefore, any other gases usually found on landfill sites will not affect the CO_2 reading. The O_2 sensor is a galvanic cell type and suffers no influence from CO_2, CO_2, hydrogen sulfide, nitrate, sulfide, or hydrogen.

Calibration is confirmed before each day's use by analyzing multiple readings of ambient air. Zero readings of CH_4 and CO_2 are expected. Oxygen is expected to read 20.9%. Oxygen readings within ± 25% of 20.9% are considered acceptable.

Analytical data generated using the Landtec GEM-500 PID is supported by annual calibration records that bracket the periods of analyses. Calibration is performed by Geotech's Colorado Service Center, in Denver, Colorado. Calibration information is reported below for the four Landtec PIDs used to generate results presented in this periodic monitoring report.

- Unit 1138 was calibrated on December 7, 2007 The zero point was set for CH_4, CO_2, and O_2. Calibration was performed so CH_4 and CO_2 reached ±15% of a known concentration, and O_2 was set to read ambient air at 20.9%. Pump flow was confirmed to be 525 cc/min.
- Unit 1062 was calibrated on December 6, 2007. The zero point was set for CH_4, CO_2, and O_2. Calibration was performed so CH_4 and CO_2 reached ±15% of a known concentration, and O_2 was set to read ambient air at 20.9%. Pump flow was confirmed to be 500 cc/min.
- Unit 915 was calibrated on October 8, 2007. The zero point was set for CH_4, CO_2, and O_2. Calibration was performed so CH_4 and $CO2_2$ reached ±15% of a known concentration, and O_2 was set to read ambient air at 20.9%. Pump flow was confirmed to be 500 cc/min.

A-6.0 REFERENCES

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

Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau; the U.S. Department of Energy–Los Alamos Site Office; the U.S. Environmental Protection Agency, Region 6; and the Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.

EPA (U.S. Environmental Protection Agency), February 1994. "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," EPA-540/R-94/013, Office of Emergency and Remedial Response, Washington, D.C. (EPA 1994, 048639)

EPA (U.S. Environmental Protection Agency), 1997. "Test Methods for Evaluating Solid Waste, Laboratory Manual, Physical/Chemical Methods," SW-846, 3rd ed., Update III, Office of Solid Waste and Emergency Response, Washington, D.C. (EPA 1997, 057589)

EPA (U.S. Environmental Protection Agency), October 1999. "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," EPA540/R-99/008, Office of Emergency and Remedial Response, Washington, D.C. (EPA 1999, 066649)

LANL (Los Alamos National Laboratory), March 1996. "Quality Assurance Project Plan Requirements for Sampling and Analysis," Los Alamos National Laboratory document LA-UR-96-441, Los Alamos, New Mexico. (LANL 1996, 054609)

LANL (Los Alamos National Laboratory), December 2000. "University of California, Los Alamos National Laboratory (LANL), I8980SOW0-8S, Statement of Work for Analytical Laboratories," Rev. 1, Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2000, 071233)

Table A-1.0-1
Data Analysis and Assessment Procedures

Procedure	Title	Effective Date
SOP-15.01, Rev. 1	Routine Validation of Volatile Organic Data	4/20/2004
SOP-15.07, Rev. 1	Routine Validation of Chemical Separation Alpha Spectrometry, Gas Proportional Counting, and Liquid Scintillation Data	4/20/2004

Table A-1.0-2
Definition of Data Qualifiers Used in Data Validation

Qualifier	Explanation
U	The analyte was analyzed for but not detected. Reported value is the sample-specific EQL or detection limit.
J	The reported value should be regarded as estimated.
J+	The reported value should be regarded as estimated and biased high.
J-	The reported value should be regarded as estimated and biased low.
UJ	The analyte was analyzed for but not detected. Reported value is an estimate of the sample-specific quantitation limit or detection limit.
R	The sample results were rejected because of serious deficiencies in the ability to analyze the sample and meet quality-control criteria; presence or absence cannot be verified.

Table A-2.0-1
Analytical Method Used for Organic Chemical Analyses

Analytical Method	Analytical Description	Target Compound List
EPA Method TO-15—Sampling and Analysis	VOCs in air	See analytical services statement of work (LANL 2000, 071233)
EPA Method 906.0	Tritium analysis	See analytical services statement of work (LANL 2000, 071233)

Table A-3.0-1
Sample Records Potentially Affected by Detected Field Blank Results

Sample Location ID	Sample Depth (ft)	Analyte	Field Blank Collection Date	Sample Collection Date	Field Blank Result* (µg/m^3)	Sample Result* (µg/m^3)
54-27642	335–341	Tetrachloroethene	12/27/2007	12/21/2007	830	2600
54-27641	330–335	Tetrachloroethene	12/27/2007	12/21/2007	830	990
54-27643	351–356.5	Tetrachloroethene	12/27/2007	12/21/2007	830	2700
54-27641	330–335	Trichloroethane[1,1,1-]	12/27/2007	12/21/2007	4500	9600
54-27641	330–335	Trichloroethene	12/27/2007	12/21/2007	2300	4400

* Analyte was detected without qualification.

Table A-4.0-1
B&K Target Analytes
and Potential Interfering Analytes

Target	Potential Interfering Analyte
PCE	Styrene
PCE	Freon 113
PCE	Freon 12
PCE	1,1-Dichloroethene
PCE	Ethylene oxide
PCE	Ethanol
PCE	Dipropylnitrosamine
PCE	1,1-Dimethylhydrazine
PCE	1,4-Diethylene dioxide
PCE	Cyclohexene
PCE	tert-Butyl alcohol
PCE	m-Vinyltoluene
PCE	Vinyl chloride
PCE	Tetrahydrofurane
PCE	Silicium tetrafluoride
PCE	Nitromethane
PCE	Nitrogen trifluoride
PCE	α-Methylstyrene
PCE	Monomethyl hydrazine
PCE	Methyl iodide
PCE	n-Hexane
PCE	Acetic anhydride
PCE	1,3-Butadiene
Freon 11	Freon 114
Freon 11	Freon 21
Freon 11	Carbonyl sulphide
Freon 11	Methyl acetate
Freon 11	Chloropicrine
Freon 11	Cyclohexane
Freon 11	Dimethylnitrosamine
Freon 11	Epichlorohydrine
Freon 11	Ethane
Freon 11	Ethylene oxide
Freon 11	Ethyl formate
Freon 11	2-Nitropropane
Freon 11	Phosgene

Table A-4.0-1 (continued)

Target	Potential Interfering Analyte
Freon 11	Vinyl acetate
TCA	Fluorobenzene
TCA	Ethyl benzene
TCA	Dimethyl formamide
TCA	Dichloromethane
TCA	1,2-Dichloroethane
TCA	o-Dichlorobenzene
TCA	Dibutyl phthalate
TCA	Chloromethane
TCA	m-Xylene
TCA	1,1,2-Trichloroethane
TCA	o-Toluidine
TCA	Toluene
TCA	Phenol
TCA	Chlorobenzene
TCA	Carbon dioxide
TCA	Boron trifluoride
TCA	Aniline
TCA	Acetophenone
TCA	Hydrogen cyanide
TCA	n-Heptane
TCE	Arsine
TCE	Butanone
TCE	Freon 152
TCE	Diethyl ketone
TCE	Dinitrogendifluoride
TCE	2-Pentanone
TCE	2-Propanol
TCE	Sulfur hexafluoride
TCE	Vinyl chloride

Appendix B

Data Packages and Chain-of-Custody Forms
(on CD included with this document)