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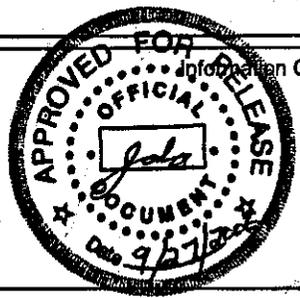
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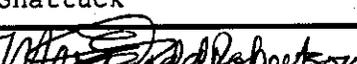
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Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management



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P.O. Box 550
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EXECUTIVE SUMMARY

The purpose of this remedial investigation (RI) report is to present the data collected during the RI characterization activities for the Plutonium/Organic-Rich Process Condensate/Process Waste Group Operable Unit (OU) (Plutonium/Organic-Rich Group OU). The Plutonium/Organic-Rich Group OU includes three operable units where liquid wastes were disposed into cribs, french drains, trenches, injection wells, settling tanks, and drain/tile fields and at unplanned release sites.

- 200-PW-1 OU waste sites primarily received plutonium-rich and organic-rich wastes (mainly carbon tetrachloride, tributyl phosphate, and lard oil) from processes within the Z Plant complex (now referred to as the Plutonium Finishing Plant complex).
- 200-PW-3 OU waste sites received organic-rich wastes (primarily refined kerosene, tributyl phosphate, and butanol) from other separation facilities such as S Plant (reduction-oxidation process), A Plant (plutonium-uranium extraction process), U Plant (uranium recovery process), and the 201-C Building (hot semiworks process).
- 200-PW-6 OU waste sites received plutonium-rich wastes from the Plutonium Finishing Plant complex, but did not receive organic-rich wastes from that complex.

The data quality objectives process for the Plutonium/Organic-Rich Group OU was performed to determine the environmental measurements necessary to refine the preliminary site conceptual models, support an evaluation of risk, and support an evaluation of remedial alternatives. The data presented as part of this RI report were evaluated against the data quality requirements to determine if sufficient data have been collected to (1) satisfy the optimized sampling designs in the data quality objectives summary reports as implemented by the remedial investigation/feasibility study Work Plan (DOE/RL-2001-01, *Plutonium/Organic-Rich Process Condensate/Process Waste Group Operable Unit RI/FS Work Plan, Includes: 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units*), (2) support risk assessment, and (3) support remedial decision making. This evaluation, documented in D&D-30565, *Data Quality Assessment Report for the 200-PW-1 and 200-PW-3 Operable Units*, and summarized in this RI report, determined that sufficient data were collected to satisfy the optimized sampling designs in the data quality

objectives summary reports as implemented by the Work Plan, and that the data are the right type, quality, and quantity to support risk-assessment activities and evaluation of remedial alternatives in the feasibility study.

The data presented in this RI report were screened for contaminants of potential concern that were not detected, and against background soil concentrations, and were used to refine the contaminant distribution models, which are presented in Chapter 3.0. The baseline risk assessment that usually is included in an RI report will be included in the Plutonium/Organic-Rich Group OU feasibility study.

The Plutonium/Organic-Rich Group OU consists of 30 *Comprehensive Environmental Response, Compensation and Liability Act of 1980* past-practice waste sites and unplanned release sites.

This RI report focuses on the characterization of four representative waste sites:

- 216-Z-1A Tile Field
- 216-Z-9 Trench
- 241-Z-361 Settling Tank
- 216-A-8 Crib.

In addition, this RI report also focuses on the significant characterization activities conducted to define the nature and extent of the “dispersed” carbon tetrachloride vadose-zone plume that has migrated away from the 200-PW-1 OU waste sites.

Data collection requirements were followed as defined in DOE/RL-2001-01. The characterization activities and results for carbon tetrachloride as a dense, nonaqueous-phase liquid (DNAPL) in the 200 West Area, defined in DOE/RL-2004-78, *Work Plan for Integrated Approach for Carbon Tetrachloride Source Term Location in the 200 West Area of the Hanford Site*, also are included in this RI report. Several RI activities could not be completed in sufficient time for inclusion in this RI report, including soil sampling around the 216-Z-9 Trench and 216-Z-1A Tile Field to define the potential presence and extent of carbon tetrachloride DNAPL, borehole geophysical logging at these waste sites, vadose-zone transport modeling, and passive soil-vapor surveys in fiscal year 2006 monitoring wells and the 200 West Area Burial Grounds.

The results of these activities will be included in the evaluation of the contaminant distribution models in the Plutonium/Organic-Rich Group OU feasibility study.

Field investigations and data collection from the four representative waste sites and the dispersed carbon tetrachloride vadose-zone plume included in this RI report were conducted primarily from 1999 to August 2006. Data collected before the RI also are discussed in this report. During the data quality objectives process, the existing data at the 216-Z-1A Tile Field and the 241-Z-361 Settling Tank were determined to be sufficient to support selection of remedial alternatives, but RIs were required at the 216-Z-9 Trench and the 216-A-8 Crib to resolve data gaps. RIs also were required to characterize the nature and extent of the dispersed carbon tetrachloride vadose-zone plume and to define the potential presence and extent of carbon tetrachloride DNAPL at the 216-Z-9 Trench and the 216-Z-1A Tile Field.

The RIs at the 216-Z-9 Trench and the 216-A-8 Crib included drilling vadose-zone boreholes (one vertical and one slant borehole at the 216-Z-9 Trench and one vertical borehole at the 216-A-8 Crib), subsurface soil and soil-vapor sampling, and borehole geophysical logging in the RI boreholes and nearby wells to define the vertical and lateral extent of contamination at these waste sites. The RIs for the dispersed carbon tetrachloride vadose-zone plume and the carbon tetrachloride DNAPL investigation involved a variety of field and non-field activities, including the following:

- Passive soil-vapor surveys
- Subsurface soil and soil-vapor sampling in direct-push holes, boreholes, and wells
- Cross-well seismic reflection surveys at the 216-Z-9 Trench and 216-Z-1A Tile Field to develop subsurface topographic maps of fine-grained layers that may be carbon tetrachloride DNAPL accumulation areas
- Soil-vapor and shallow-groundwater sampling in existing monitoring wells at eight areas of persistent carbon tetrachloride concentrations ("hot spots") in the carbon tetrachloride groundwater plume to evaluate whether vadose-zone soil vapor is impacting the groundwater in these areas

- Modeling studies of carbon tetrachloride DNAPL transport in the vadose zone beneath the 216-Z-9 Trench
- Particle-tracking analysis of the movement of the carbon tetrachloride groundwater plume to help identify potential vadose-zone source areas other than the known 200-PW-1 OU waste sites
- Geostatistical analysis of the persistence of carbon tetrachloride groundwater concentrations in the eight “hot spot” areas of the carbon tetrachloride groundwater plume.

The summaries of these RI activities are provided in Chapter 2.0, and the results are provided in Chapter 3.0.

Since 1992, an interim action in the 200-PW-1 OU has used soil-vapor extraction to minimize the migration of the dispersed carbon tetrachloride vadose-zone plume away from the 200-PW-1 OU waste sites. A summary of the performance evaluation of this interim action is included in Chapter 2.0.

The preliminary conceptual contaminant distribution models developed in the Work Plan (DOE/RL-2001-01) were refined based on the data collected during the RI. The refined contaminant distribution models depict current contaminant distribution beneath the representative waste sites and the dispersed carbon tetrachloride vadose-zone plume and were used to qualitatively evaluate current and future impacts to groundwater. These models will be used in the feasibility study to apply the analogous-site approach to the remaining waste sites (analogous sites). The analogous-site approach streamlines the RI by applying the contaminant distribution models for the investigated waste sites (representative waste sites) to the waste sites in these OUs that are analogous to the representative waste sites. DOE/RL-98-28, *200 Areas Remedial Investigation/Feasibility Study Implementation Plan – Environmental Restoration Program*, provides additional information on the analogous site approach.

The results of the RI characterization of the 216-Z-1A Tile Field, 216-Z-9 Trench, and 216-A-8 Crib indicate that the vadose zone is contaminated by both radiological and nonradiological contaminants of potential concern. Groundwater has been impacted by these sites in the past, but

these sites are not likely to be significant current sources of groundwater contamination. The RI characterization results of the 241-Z-361 Settling Tank indicate that although the tank contains approximately 75 m³ of sludge contaminated with radionuclides, metals, organics, and polychlorinated biphenyls, the tank has not leaked, so this site is not considered to be a past or current source of groundwater contamination. The results of the RI characterization of the dispersed carbon tetrachloride vadose-zone plume indicate that the highest carbon tetrachloride concentrations are near the 216-Z-9 Trench and 216-Z-1A Tile Field. These concentrations are being reduced by the interim-action soil-vapor extraction, and away from these waste sites the concentrations that were found are not considered to have the potential for significant current or future groundwater impacts.

Chapter 4.0 presents the conclusions, indicates the ongoing RI activities that will be included in the evaluation of the contaminant distribution models in the feasibility study, and discusses the path forward for the Plutonium/Organic-Rich Group OU. In the feasibility study, the baseline risk assessment will identify the contaminants of potential concern that will be retained for further analysis, and remedial alternatives will be developed and evaluated with regard to meeting potential applicable-or-relevant-and-appropriate requirements, performance standards, and evaluation criteria. The decision-making process for the Plutonium/Organic-Rich Group OU will be based on the use of a proposed plan and record of decision. The record of decision for this OU Group will cover all of the waste sites in the three OUs, not just the representative waste sites characterized under the RI. After the record of decision has been issued, a remedial design report and remedial action work plan will be prepared to detail the scope of the remedial action.

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TERMS

ARAR	applicable or relevant and appropriate requirement
bgs	below ground surface
CCU	Cold Creek unit
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
COPC	contaminant of potential concern
CPP	CERCLA past-practice
CPT	cone-penetrometer test
DBBP	dibutyl butyl phosphonate
DBP	dibutyl phosphate
DNAPL	dense, nonaqueous-phase liquid
DOE	U.S. Department of Energy
DQA	data quality assessment
DQO	data quality objective
EAPS	Enhanced Access Penetration System
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
FS	feasibility study
GAC	granular activated carbon
GPS	Global Positioning System
Guzzler	Guzzler Vacuum Extraction System
HEIS	<i>Hanford Environmental Information System</i> database
HEPA	high-efficiency particulate air (filter)
HHR	hydraulic hammer rig
HVAC	heating, ventilation, and air conditioning
HWIS	<i>Hanford Well Information System</i> database
Implementation Plan	DOE/RL-98-28
N/A	not applicable
NPH	normal paraffin hydrocarbon
OU	operable unit
OVA	organic vapor analyzer
PFP	Plutonium Finishing Plant
PNNL	Pacific Northwest National Laboratory
PRF	Plutonium Reclamation Facility
PUREX	Plutonium-Uranium Extraction (Plant or process)
QA	Quality Assurance
QC	Quality Control
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
RECUPLEX	Recovery of Uranium and Plutonium by Extraction (Plant or process)
REDOX	Reduction-Oxidation (Plant or process)
RI	remedial investigation
RL	(DOE) Richland Operations Office
ROD	record of decision

SAP	sampling and analysis plan
SGLS	Spectra Gamma Logging System
SIM	soil inventory model
STOMP	Subsurface Transport over Multiple Phases (PNNL-12028)
SVE	soil-vapor extraction
TBP	tributyl phosphate
Tri-Parties	Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy
Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order</i> (Ecology et al. 1989, as amended)
UPR	unplanned release
VOC	volatile organic compound
WIDS	<i>Waste Information Data System</i> database
Work Plan	DOE/RL-2001-01

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METRIC CONVERSION CHART

Into Metric Units			Out of Metric Units		
<i>If You Know</i>	<i>Multiply By</i>	<i>To Get</i>	<i>If You Know</i>	<i>Multiply By</i>	<i>To Get</i>
Length			Length		
inches	25.4	Millimeters	millimeters	0.039	inches
inches	2.54	Centimeters	centimeters	0.394	inches
feet	0.305	Meters	meters	3.281	feet
yards	0.914	Meters	meters	1.094	yards
miles	1.609	Kilometers	kilometers	0.621	miles
Area			Area		
sq. inches	6.452	sq. centimeters	sq. centimeters	0.155	sq. inches
sq. feet	0.093	sq. meters	sq. meters	10.76	sq. feet
sq. yards	0.0836	sq. meters	sq. meters	1.196	sq. yards
sq. miles	2.6	sq. kilometers	sq. kilometers	0.4	sq. miles
acres	0.405	Hectares	hectares	2.47	acres
Mass (weight)			Mass (weight)		
ounces	28.35	Grams	grams	0.035	ounces
pounds	0.454	Kilograms	kilograms	2.205	pounds
ton	0.907	metric ton	metric ton	1.102	ton
Volume			Volume		
teaspoons	5	Milliliters	milliliters	0.033	fluid ounces
tablespoons	15	Milliliters	liters	2.1	pints
fluid ounces	30	Milliliters	liters	1.057	quarts
cups	0.24	Liters	liters	0.264	gallons
pints	0.47	Liters	cubic meters	35.315	cubic feet
quarts	0.95	Liters	cubic meters	1.308	cubic yards
gallons	3.8	Liters			
cubic feet	0.028	cubic meters			
cubic yards	0.765	cubic meters			
Temperature			Temperature		
Fahrenheit	subtract 32, then multiply by 5/9	Celsius	Celsius	multiply by 9/5, then add 32	Fahrenheit
Radioactivity			Radioactivity		
picocuries	37	Millibecquerel	millibecquerel	0.027	picocuries

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1.0 INTRODUCTION

The purpose of this remedial investigation (RI) report is to present the data collected during the RI and other characterization activities for the Plutonium/Organic-Rich Group Operable Unit (OU). The Plutonium/Organic-Rich Group OU includes three operable units where liquid wastes were disposed into cribs, french drains, trenches, injection wells, settling tanks, and drain/tile fields and at unplanned release (UPR) sites.

- 200-PW-1 OU waste sites primarily received plutonium-rich and organic-rich wastes (mostly carbon tetrachloride, tributyl phosphate [TBP], and lard oil) from processes within the Z Plant complex (now referred to as the Plutonium Finishing Plant or PFP complex).
- 200-PW-3 OU waste sites received organic-rich wastes (primarily refined kerosene [normal petroleum hydrocarbon or NPH], TBP, and butanol) from other separations facilities such as S Plant (Reduction-Oxidation or REDOX process), A Plant (Plutonium-Uranium Extraction or PUREX process), U Plant (uranium recovery process), and the 201-C Building (Hot Semiworks process).
- 200-PW-6 OU waste sites received plutonium-rich wastes from the PFP complex, but did not receive organic-rich wastes from that complex.

The data quality objectives (DQO) process for the Plutonium/Organic-Rich Group OU was performed to determine the environmental measurements necessary to refine the preliminary site conceptual models, support an evaluation of risk, and support an evaluation of remedial alternatives. The data presented as part of this RI report were evaluated against the data quality requirements to determine if sufficient data had been collected to support risk assessment and remedial decision making. This evaluation, documented in D&D-30565, *Data Quality Assessment Report for the 200-PW-1 and 200-PW-3 Operable Units*, and summarized in Section 1.3.1, determined that the data are the right type, quality, and quantity to support risk-assessment activities and evaluation of remedial alternatives in the feasibility study (FS).

In addition to the data quality assessment (DQA), this RI report for the Plutonium/Organic-Rich Group OU consists of three main components: summary of the investigation approach (Chapter 2.0), presentation of the results (Chapter 3.0), and the refined conceptual models of contaminant distribution (Chapter 3.0).

The Plutonium/Organic-Rich Group OU consists of 30 *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) past-practice (CPP) waste sites and UPR sites. This RI report focuses on the characterization of four representative waste sites:

- 216-Z-1A Tile Field
- 216-Z-9 Trench
- 241-Z-361 Settling Tank
- 216-A-8 Crib.

In 2002, the U.S. Department of Energy (DOE), Richland Operations Office (RL); the U.S. Environmental Protection Agency (EPA); and Washington State Department of Ecology (Ecology) conducted a thorough review of the cleanup approach that was being applied through DOE/RL-98-28, *200 Areas Remedial Investigation/Feasibility Study Implementation Plan - Environmental Restoration Program*, (Implementation Plan) and identified improvements to accelerate cleanup of these waste sites. As part of this improved approach to accelerating waste site cleanup, these three agencies (the Tri-Parties) agreed to consolidate the 23 process-based operable units into 12 groups based on similarities between contaminant sources (02-RCA-0341, 2002, "Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Change Requests for the Central Plateau Project (CPP) Activities"; contains Modifications M-013-02-01, M-015-02-01, M-016-02-01, and M-020-02-01, approved in June 2002). As a result of this process, the 200-PW-1 Plutonium/Organic-Rich Process Condensate/Process Waste Group OU, the 200-PW-3 Organic-Rich Process Condensate/Process Waste Group OU, and the 200-PW-6 Plutonium-Rich Process Condensate/Process Waste Group OU were consolidated into one group – the Plutonium/Organic-Rich Group OU – because the waste sites in all three OUs received plutonium- and/or organic-rich process condensates and process wastes. As part of the consolidation effort, all of the waste sites in the 200-PW-1, 200-PW-3, and 200-PW-6 OUs were aligned with representative waste sites based on similarities between their contaminant distribution models. This analogous site approach, which is fundamental to the Implementation Plan, allows data collected from representative sites to be extrapolated to similar or analogous sites in the early stages of assessment to support remedial alternative evaluation and selection (DOE/RL-98-28, Section 2.5.1).

The Plutonium/Organic-Rich Group OU representative waste sites were selected for characterization, because the available data concerning waste stream inventories and effluent volumes received suggest that contaminant levels present in the subsurface beneath these receiving sites represent average or worst case conditions for the waste sites in the OU. The representative waste sites were evaluated by implementing the DQO process. The DQO process was used to determine the data that should be collected to assess site conditions and support remedial decision making. During the DQO process, the existing data at the 216-Z-1A Tile Field and the 241-Z-361 Settling Tank were determined to be sufficient to support selection of remedial alternatives, but remedial investigations were required at the 216-Z-9 Trench and the 216-A-8 Crib to resolve data gaps (CP-15371, *Remedial Investigation Data Quality Objectives Summary Report for the Plutonium/Organic-Rich Process Condensate/Process Waste Group Operable Unit Representative Waste Sites*). This RI report summarizes the historical or existing data from the four representative waste sites in addition to the RI data collected as a result of the DQO process.

The characterization and remediation of waste sites at the Hanford Site are addressed in *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) (Ecology et al. 1989). This agreement addresses the integration of cleanup programs under CERCLA and the *Resource Conservation and Recovery Act of 1976* (RCRA) to provide a standard approach to directing cleanup activities and to ensure that applicable regulatory requirements are met. The Tri-Party Agreement requires that both CERCLA remedial actions and RCRA corrective actions processes be satisfied simultaneously. Details of this integration for the 200 Areas are presented in the Implementation Plan (DOE/RL-98-28, Chapter 2.0) and in DOE/RL-2001-01, *Plutonium/Organic-Rich Process Condensate/Process Waste Group Operable Unit RI/FS Work*

Plan: Includes the 200-PW-1, 200-PW-3 and 200-PW-6 Operable Units (Work Plan, Section 1.1). This paragraph documents that this Tri-Party Agreement requirement was considered when preparing the RI report.

The Plutonium/Organic-Rich Group OU waste sites are located in the 200 East and 200 West Areas near the center of the Hanford Site in south-central Washington State (Figure 1-1). The 200-PW-1 and 200-PW-6 OU waste sites are all located in the 200 West Area; therefore, the three representative waste sites selected for the 200-PW-1 OU are located in the 200 West Area. The 200-PW-3 OU waste sites are located in both the 200 East and 200 West Areas; the representative waste site selected for the 200-PW-3 OU is located in the 200 East Area. The waste sites in the Plutonium/Organic-Rich Group OU are listed in Table 1-1, and their locations are shown on Figures 1-2 through 1-5.

The RI field work was conducted in accordance with the Work Plan (DOE/RL-2001-01). Data were collected to characterize the nature and extent of chemical and radiological contamination and the physical conditions in the vadose zone underlying the historical boundaries of the 216-Z-9 Trench (200-PW-1 OU) and the 216-A-8 Crib (200-PW-3 OU). Surface radiological surveys, borehole drilling, soil and soil-vapor sampling, dense, nonaqueous-phase liquid (DNAPL) characterization, and borehole geophysical surveys were conducted during the field activities. These activities are summarized in *WMP-26264, Borehole Summary Report for Well 299-W15-46 (C3426) Drilled at the 216-Z-9 Trench*; *WMP-30566, Borehole Summary Report for Well 299-W15-48 (C3427) Drilled at the 216-Z-9 Trench*; and *WMP-27020, Borehole Summary Report for Characterization Borehole C4545 Drilled at the 216-A-8 Crib*. The data from the activities conducted at the representative waste sites, as well as existing data, will support the evaluation of remedial alternatives in the FS.

In addition to characterization of the representative waste sites, the RI included characterization of the dispersed carbon tetrachloride vadose-zone plume. As previously noted, the primary organic contaminants discharged to the 200-PW-1 OU waste sites were carbon tetrachloride, TBP, and commercial lard oil. The carbon tetrachloride has migrated beyond the 200-PW-1 OU waste site boundaries, resulting in a dispersed carbon tetrachloride vadose-zone plume. The purpose of the RI of the dispersed plume was to determine whether there are carbon tetrachloride sources in the vadose zone that are current or may be future sources of groundwater contamination. The dispersed-plume RI activities, which were conducted in two phased steps included the following:

- Passive and active soil-vapor surveys at engineered facilities that could be potential sources of carbon tetrachloride
- Modeling studies of carbon tetrachloride DNAPL transport in the vadose zone beneath the 216-Z-9 Trench
- Geostatistical analyses
- Particle tracking
- Sampling in the top of the aquifer and deep vadose zone to evaluate whether vadose-zone sources currently are impacting groundwater

- Delineating the subsurface topography of fine-grained layers that could have influenced the contaminant migration pathways, such as the top of the Cold Creek unit, in the area surrounding the three primary carbon tetrachloride waste sites.

These activities are summarized in CP-13514, *200-PW-1 Operable Unit Report on Step I Sampling and Analysis of the Dispersed Carbon Tetrachloride Vadose Zone Plume*; DOE/RL-2006-58, Draft A, *Carbon Tetrachloride Dense Non-Aqueous Phase Liquid (DNAPL) Source Term Interim Characterization Report*; D&D-30838, *200-PW-1 Operable Unit Report on Step II Sampling and Analysis of the Dispersed Carbon Tetrachloride Vadose Zone Plume*, and other reports that are referenced in this RI report.

The comprehensive strategy for investigation of DNAPL in the 200 West Area was developed in fiscal year 2003 (Work Plan, Chapter 6.0 [DOE/RL-2001-01]). The DNAPL strategy included borehole drilling at the 216-Z-9 Trench, investigation of any continuing sources indicated by the dispersed carbon tetrachloride plume investigation, and activities implemented by the Alternatives for Carbon Tetrachloride Source Term Location Project. This Project included (1) development of a viable conceptual model for the presence/absence of DNAPL in the vadose zone and unconfined aquifer, (2) evaluation/proposal of characterization technologies to validate the model, and (3) performance of the selected characterization activities to confirm the conceptual model that will describe the nature, extent, and mass of DNAPL. These characterization activities are summarized in DOE/RL-2006-58.

This RI report was prepared in fulfillment of Tri-Party Agreement Milestone M-015-45A (Submit Plutonium/Organic-Rich OU Remedial Investigation Report Including the Past Practice Waste Sites in the 200-PW-1 OU Plutonium/Organic-Rich Process Condensate/Process Waste Group OU, 200-PW-3 Organic-Rich Process Condensate/Process Waste Group OU, and 200-PW-6 Plutonium-Rich Process Condensate/Process Waste Group OU) Ecology et al. 1989).

1.1 PURPOSE

This RI report focuses on the characterization of the 216-Z-1A Tile Field, 216-Z-9 Trench, 241-Z-361 Settling Tank, 216-A-8 Crib, the dispersed carbon tetrachloride vadose-zone plume, and the investigation of the presence and distribution of DNAPL carbon tetrachloride in the vadose zone. Data from these investigations include both existing data and data collected as part of the RI process from May 2002 to August 2006.

The data presented as part of this RI report also were evaluated to determine if sufficient data had been collected to support risk assessment and remedial decision making. The RI data evaluation is documented in D&D-30565 and summarized in Section 1.3.1. However, the baseline risk assessment will be included in the FS for this Group OU per Tri-Party Agreement Change Notice TPA-CN-146, *Change Notice for Modifying Approved Documents/Work Plans In Accordance with the Tri-Party Agreement Action Plan, Section 9.0, Documentation and Records, DOE/RL-2001-01, Plutonium/Organic-Rich Process Condensate/Process Waste Group Operable Unit RI/FS Work Plan: Includes the 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units*. This RI report also provides data to support the evaluation of alternatives in the FS with regard to meeting potential applicable or relevant and appropriate requirements (ARAR) and

identifies the potential for any significant data gaps that might need to be addressed prior to remedial action decision-making.

1.2 DATA EVALUATION METHODOLOGY

The data presented as part of this RI report were evaluated to determine if sufficient data had been collected to support risk assessment, the FS development and evaluation of remedial alternatives, and selection of a preferred remedy or remedies. The data evaluation process was preceded by collection and validation of the data. A DQA of the RI data was performed, and the results are presented in D&D-30565. The data were collected under the Work Plan (DOE/RL-2001-01, Chapter 4.0), based on the DQOs established for this OU (BHI-01544, *Remedial Investigation Data Quality Objective Summary Report for the 200-PW-1 Operable Unit Dispersed Carbon Tetrachloride Vadose Zone Plume – Step I*; CP-15371; CP-15372, *Remedial Investigation Data Quality Objectives Summary Report for the 200-PW-1 Operable Unit Dispersed Carbon Tetrachloride Vadose Zone Plume – Step II*; and CP-15373, *Data Quality Objectives Summary Report for Investigation of Dense, Nonaqueous-Phase Liquid Carbon Tetrachloride in the 200 West Area*). In accordance with the quality assurance/quality control (QA/QC) procedures specified in the sampling and analysis plans in the Work Plan (DOE/RL-2001-01, Appendices B through E), at least 5 percent of all laboratory data were validated. A summary of the data validation is presented in the DQA report, D&D-30565. Summary tables providing the frequency of detection and minimum and maximum detected values are provided in Appendix A of this RI report. In Chapter 3.0, only the analytes that were detected above background values are presented in the tables; however, all of the analyte results are presented in Appendix B.

1.2.1 Summary of the Data Quality Assessment Report for the 200-PW-1 and 200-PW-3 Operable Units

The results of the DQA of the RI data are presented in D&D-30565. The report includes assessment of the sampling and the analytical results from Boreholes C3426 and C3427 at the 216-Z-9 Trench and Borehole C4545 at the 216-A-8 Crib. It also includes an assessment of the field screening data collected for the dispersed carbon tetrachloride vadose-zone plume investigation. This subsection summarizes the key findings from the DQA report (D&D-30565).

A quality assessment was performed on two groups of data. The first data group consisted of data from the three boreholes sampled for the RI/FS (Boreholes C3426, C3427, and C4545). The second data group consisted of data from field screening conducted to determine the extent of the dispersed carbon tetrachloride vapor plume in the vadose zone. This assessment found that, on the whole, the data collected are of the right type, quality, and quantity to support the decisions required in the RI/FS. Specific findings of this assessment, including the exceptions to the general good quality of the data and the impacts of those exceptions, are summarized in the following paragraphs.

1.2.1.1 Borehole C3426 (Vertical Well at the 216-Z-9 Trench)

For Borehole C3426, an adequate amount (93.2 percent) of the primary soil data required was obtained. However, Tc-99, Sr-90, and Th-232 results were not obtained at most of the planned depths. Nevertheless, measurements were obtained at reasonably nearby depths, so that adequate coverage of the subsurface lithologies was achieved. No data were obtained for hexavalent chromium at the depths corresponding to the Cold Creek unit (CCU) (33 to 35.5 m or 108.5 to 116.5 ft bgs), so it may be necessary to use total chromium as an upper bound for hexavalent chromium in this depth range. Total chromium values are typically 30 or more times greater than the hexavalent chromium concentrations in the borehole. Except for hexavalent chromium in the CCU, modeling of contaminant distributions should not be unduly hindered by lack of data.

Detection limits exceeded the preliminary action limits for about 12.5 percent of the determinations. This is not an unreasonably large number of exceedances, and the data are distributed over a number of contaminants of potential concern (COPC) and depths, so the usability of the data is not severely impacted. Blank sample results showed that contamination from sampling and/or laboratory operations was infrequent and minor. Overall precision, as assessed from field duplicate and split-sample results, was higher than desired, but nevertheless was judged to be usable.

Holding times for select tests were exceeded by more than a factor of two, resulting in rejection of one sample analyzed for semivolatiles, total petroleum hydrocarbons, mercury, and anions. The impact of this rejection is still under evaluation and will be discussed further in the subsequent revision of this report.

1.2.1.2 Borehole C3427 (Slant Well at the 216-Z-9 Trench)

All samples specified in the sampling and analysis plan (SAP) were collected. However, because the base of the upper gravel sequence (H1) of the Hanford formation was not as deep as expected, no samples were taken in this stratum or at the contact of the H1 with the underlying sand-dominated unit (H2) of the Hanford formation. Therefore, data from other boreholes (e.g., C3426) must be used to characterize the H1 unit and its contact with the H2 unit.

All required analytical data were obtained for the samples, except for Aroclors¹ at the 25.8 m (84.8 ft) bgs depth. The lack of some data at this interval is not critical, because the interval is bounded by other samples in the same unit, and radical variations are not expected.

Laboratory precision and accuracy are acceptable, as determined from formal validation and examination of the field duplicate and split-sample data. However, the field duplicate analyses for the field screening vapor samples did not meet the 25 percent precision requirement of the SAP. Because these data are used to support the laboratory data, which will be used for risk evaluation and evaluation of remedial alternatives, the overall impact will not prevent decision

¹ Aroclor is an expired trademark.

making. The sampling and analysis precision was sufficient to detect concentration differences between sample locations, which satisfies the purpose for these samples.

Detection limits generally were satisfactory. However, because of high Pu-239 and Am-241 concentrations, detection limits for other alpha emitters were not always achieved. This is not a serious problem; the plutonium and americium will be considered in the remediation decisions because of their significant detections as alpha emitters.

Contamination of the methanol used to preserve the high-range volatile organic analyte (VOA) samples analyzed in the laboratory may result in artificially elevated values for some volatile organic compounds (VOC). However, the low-range results for most analytes at most depths were acceptable. The low-concentration range results can be used for decision making.

No analytical results were rejected in formal data validation. However, a number of vapor sample results from field screening for the 36 to 37.6 m (118.3 to 123.4 ft) bgs sampling interval were rejected in the DQA process. Because there are many other vapor measurements at the same depth, and because these field screening data are used to support the laboratory data in the RI decision-making process, these rejections will have little impact.

1.2.1.3 Borehole C4545 (Vertical Well at the 216-A-8 Crib)

All primary soil data and QC data required were obtained for Borehole C4545. Precision and accuracy were acceptable. Detection limits exceeded limits set in the SAP only infrequently. Contamination from sampling and/or laboratory operations was infrequent and minor. No analytical results were rejected for use in the RI/FS decision-making process.

1.2.1.4 Dispersed-Plume Field Screening

For the dispersed plume, two subsets of carbon tetrachloride soil-vapor data were selected for assessment. Seven data points exhibiting high concentrations of carbon tetrachloride vapor in 1993 near the 216-Z-9 Trench were selected as representative of historical concentrations deep in the vadose zone near the release sites. Carbon tetrachloride vapor data, collected inside the security fence surrounding the PFP in accordance with the 200-PW-1 OU Work Plan (DOE/RL-2001-01), were selected as representative of concentrations at shallower depths and farther removed from the release sites.

The data subset collected under the Work Plan fully met the goals established in the Work Plan for that data set. The required detection limit of 1.0 ppmv was met in all measurements. Blank sample results demonstrated that the measurements were not affected by contamination from sources other than the samples. Accuracy, as assessed by measurement of standard gas samples, and precision, as assessed by measurement of field duplicate samples, met the intent of the SAPs.

QC data were not available to support the historical data subset. Without QC data, a complete and rigorous DQA could not be performed. However, substantial indirect evidence was found to show that the data provide reasonable measures of carbon tetrachloride in the soil gas.

- The active sampling methods and QC practices used in 1993 for field screening measurements of down-hole soil vapors are similar to those used today. As documented

in the DQA for Borehole C3427 and other sources, these methods easily are capable of producing quality data.

- The VOC monitoring instruments used were checked frequently and challenged periodically with calibrated gas standards (BHI-00720, *Performance Evaluation Report for Soil Vapor Extraction Operations at the Carbon Tetrachloride Site, February 1992 - September 2001*, p. 5-1).
- A spatial evaluation of the dispersed-plume results/data was conducted and the data reasonably trend from high concentrations where carbon tetrachloride was known to be discharged to negligible concentrations in areas away from the points of discharge. These trends are qualitatively consistent with the knowledge of the release history and the physical properties of the soil.

Thus, although numerical QC data are not available, documentation provides adequate evidence that suitable equipment, sampling, and measurement methods were employed and that reasonable results were obtained. These field screening results will not be used for risk evaluation. Given the large volume of soil-vapor data with consistent concentrations, the quality of the field screening is usable to support the evaluation of remedial alternatives.

The identification of COPCs is deferred to the baseline risk assessment, which will be included in the FS.

1.2.2 Human-Health Risk Evaluation

The human-health risk evaluation is deferred to the FS.

1.2.3 Modeling Approach

The fate and transport evaluation of COPCs is deferred to the FS.

1.2.4 Ecological Risk Evaluation Methodology

The ecological risk evaluation is deferred to the FS.

1.2.5 Representative Waste Site Approach

The concept and rationale for using representative waste sites is discussed in the 200 Areas Implementation Plan (DOE/RL-98-28, Section 2.5.1). By grouping sites with similar waste site history, contaminants, location, and geology, and by then choosing one or more representative waste sites for comprehensive field investigations, including sampling, the amount of site characterization can be reduced. Findings from site investigations at representative waste sites are extended to apply to other sites in the OU waste group that were not characterized. Sites for which field data have not been collected are assumed to have chemical and radioactive characteristics similar to those sites that were characterized. Pre-record of decision (ROD) or

post-ROD confirmatory investigations of limited scope, rather than full characterization activities, can be performed at the sites not selected as representative waste sites. The regulatory pathway and documentation requirements are streamlined, and the time and cost required to characterize nonrepresentative waste sites is greatly reduced.

Data from representative waste sites are used to evaluate remedial alternatives and to select one or more alternatives to apply for the entire OU waste group. Although a degree of uncertainty exists in employing the analogous-site concept, substantial benefit is realized in the early selection of a remedy that allows early cleanup action to be performed.

Selection of representative waste sites is fundamental to the implementation of the analogous site approach. These sites often are indicative of worst case and typical conditions in an OU and, in some cases, have been characterized extensively. The representative waste sites evaluated in this RI report were identified as being representative of sites within their OU in the 200 Areas Implementation Plan (DOE/RL-98-28, Appendix G) and during the OU consolidation process and were confirmed through the DQO process (CP-15371); therefore, data collected from these sites and the resulting contaminant distribution models are anticipated to be representative of the analogous waste sites in the OUs.

Existing data on each representative waste site have been assembled and evaluated to develop a conceptual understanding of the contaminant distribution beneath these waste sites. The approach that was used to further investigate, characterize, and evaluate the representative waste sites is presented in the Work Plan (DOE/RL-2001-01, Chapter 4.0). The preliminary remediation strategy for carbon tetrachloride also was identified in the Work Plan (DOE/RL-2001-01, Chapter 6.0). This preliminary remediation strategy will be further developed in the FS, the proposed plan, and the eventual ROD for this OU. Four separate DQO processes were conducted for the Plutonium/Organic-Rich Group OU (BHI-01544, CP-15371, CP-15372, and CP-15373) to define the radiological and nonradiological contaminants to be characterized and to specify the number, type, and location of samples to be collected at the representative waste sites and the dispersed carbon tetrachloride vadose-zone plume. The results of these DQO processes formed the basis for the Work Plan (DOE/RL-2001-01, Chapter 4.0).

A proposed plan and ROD will be written to identify the proposed remedy (or remedies) for all waste sites in the OU. The ROD will include criteria for any post-ROD confirmatory sampling and analysis needed to verify that all remaining (or analogous) sites in the OU meet the conceptual model for the waste group. If a waste site is significantly different from, and fails to meet, the contaminant distribution model, and the selected remedy is not appropriate, the site will be reevaluated based on historical and any new information. The reevaluation could result in a decision to use a contaminant distribution model established for a different OU. The reevaluation also could result in a decision to do additional confirmatory sampling. Changes to the preferred alternative would be evaluated as needed, based on confirmatory data. The analogous site approach focuses on the typical and worst case sites as representative waste sites; therefore, data from the representative waste sites should bound the analogous sites within the OU. Also, the ability to use data and information from applicable waste sites outside the OUs helps reduce the potential to reassign waste sites between OUs. A separate DQO process will be conducted to identify data needs and quality requirements to support the confirmatory sampling design.

1.3 WASTE SITE DESCRIPTION AND HISTORY

The Plutonium/Organic-Rich Group OU consists of cribs, tile fields, settling tanks, trenches, UPR waste sites, borrow pits, control structures, injection/ reverse wells, french drains and receiving vaults that received plutonium and/or organic-rich process condensates and process wastes. Carbon tetrachloride, TBP, and commercial lard oil are the primary organic-rich contaminants discharged to the 200-PW-1 OU, which resulted in the release of carbon tetrachloride DNAPL at the waste sites and the migration of the dispersed carbon tetrachloride vadose-zone plume away from the waste sites.

Representative waste sites were selected based on similarities between contaminant distribution models. A waste site might be aligned with a representative waste site of the same OU or in a different OU because of the resemblance between contaminant distribution models in a different OU (DOE/RL-2001-01, Chapter 1.0). Data collection at representative waste sites emphasized verifying the conceptual contaminant distribution model, in addition to supporting preparation of a risk evaluation and feasibility study. Data collection also will support remedial action decision-making for the representative waste sites and the sites aligned with their conceptual contaminant distribution models (CP-15371).

The following sections describe the representative waste sites and the dispersed carbon tetrachloride vadose-zone plume in detail. Information was obtained from the Work Plan (DOE/RL-2001-01, Sections 2.2, 2.3, and 2.4). The four waste sites were selected as representative waste sites for the following reasons.

- The 216-Z-1A Tile Field was selected as the “typical” representative source term waste site in the 200-PW-1 OU because of its plutonium and carbon tetrachloride inventory and its current level of characterization.
- The 216-Z-9 Trench was selected as the “worst case” representative source term waste site in the 200-PW-1 OU, because it has the highest plutonium inventory and a high carbon tetrachloride inventory in terms of the volume of carbon tetrachloride released, compared to the infiltration area of the receiving site.
- The 241-Z-361 Settling Tank was selected as a representative waste site in the 200-PW-1 OU, because it has a high plutonium inventory that has not been released to the environment and because of its current level of characterization.
- The 216-A-8 Crib was selected as the “worst case” representative waste site in the 200-PW-3 OU, because it has a relatively high fission product inventory compared to other waste sites in the Plutonium/Organic-Rich Group OU and a significant inventory of organic solvents including compounds other than carbon tetrachloride.

All of the 200-PW-1, 200-PW-3, and 200-PW-6 OU waste sites are located within the 200 Areas industrial-exclusive land-use area (Figure 1-1). The 200-PW-1 OU includes eight CPP waste sites and two UPR sites that received mostly acidic aqueous and organic (primarily carbon tetrachloride) process and laboratory wastes containing large amounts of americium and plutonium and some uranium. The waste discharged to the soil column in this OU was generated at the Z Plant complex (PFP complex) from 1949 through 1973.

The 200-PW-3 OU includes 10 CPP waste sites not counting the 216-U-15 Trench, which has been deleted since the Work Plan was issued. However, the 200-E-23 Depression/Pit has been classified as rejected by the *Waste Information Data System* (WIDS). The 200-PW-3 OU also contains two UPRs, one of which (UPR-200-W-125) has been reclassified as rejected by WIDS. Waste sites in the 200-PW-3 OU received solvent-rich discharges from several 200 Areas processing facilities. The waste can be classified as ranging from acidic to basic with moderate amounts of uranium and plutonium and small amounts of fission products (except the 216-A-8 and 216-A-24 Cribs, which received larger amounts of fission products).

The 200-PW-6 OU includes seven CPP waste sites, and one UPR. The waste sites received neutral/basic process wastes from the Plutonium Isolation Facility, which operated from approximately 1945 to 1949, and from the Recovery of Uranium and Plutonium by Extraction (RECUPLEX) process, which recovered plutonium from Z Plant liquid and solid scraps from 1955 to 1962.

Summary information on the four representative waste sites is presented in Tables 1-2 and 1-3.

1.3.1 216-Z-9 Trench

The 216-Z-9 Trench is located in the 200 West Area, about 213 m (700 ft) east of the 234-5Z Building and 152 m (500 ft) south of 19th Street. The 216-Z-9 Trench consists of a 6 m (20-ft)-deep excavation with a 37 by 27 m (120- by 90-ft) concrete cover. The walls of the trench slope inward and downward to the 18 by 9 m (60 by 30-ft) floor space, which had a slight slope to the south. The sloping walls of the cavern and the underside of the slab were paved with acid-resistant brick/tiles. The cover of the trench is supported by six concrete columns. Figure 1-6 shows the 216-Z-9 Trench construction.

From July 1955 through June 1962, the 216-Z-9 Trench received all solvent and aqueous wastes from the RECUPLEX process that operated in the 234-5Z Building (e.g., Z Plant). To help present how the plutonium-rich and organic-rich contaminants were commingled in the liquid wastes discharged to the 216-Z-9 Trench, the following brief description of the RECUPLEX operation is summarized from WHC-SD-EN-TI-248, *Conceptual Model of the Carbon Tetrachloride Contamination in the 200 West Area at the Hanford Site*.

The RECUPLEX process used nitric and hydrofluoric acids to produce soluble plutonium as plutonium nitrate and a carbon tetrachloride-TBP solvent to recover the plutonium from the plutonium nitrate solutions. A criticality accident forced the closure of the RECUPLEX process in April 1962.

Two solvents were used for the entire period of RECUPLEX operation. An 85:15 ratio (by volume) of carbon tetrachloride to TBP was used in the extraction and stripping columns for the bulk of the separations. A 50:50 ratio of carbon tetrachloride to dibutyl butyl phosphonate (DBBP) was used for batch rework of process liquids that did not meet waste-discharge specifications because of plutonium concentrations. With exposure to ionizing radiation and nitric acid, the TBP in the solvent gradually would degrade to dibutyl phosphate (DBP). DBP has a much greater affinity for plutonium than TBP and would not work in the process because of its poor stripping properties. The degraded solvent was periodically discharged batch-wise

and replaced with fresh solvent. The DBBP solution was discharged after each use. The chemical processes used to recover plutonium resulted in the production of actinide-bearing aqueous and organic waste liquids. The primary radionuclide components of these liquids were Pu-239/240 and Am-241.

Tetrachloroethylene and tetrabromoethane were used at different times in combination with carbon tetrachloride as a diluent for TBP or for cleaning agents (ARH-2915, *Nuclear Reactivity Evaluations of 216-Z-9 Enclosed Trench*). Degradation products of carbon tetrachloride include chloroform and methylene chloride. Breakdown products of TBP include DBP, monobutyl phosphate, and butyl alcohol.

Another source of carbon tetrachloride discharged to the soil was in a cutting oil used in Z Plant. "Fabrication oil," (a 75:25 volumetric mixture of carbon tetrachloride and lard oil) was used as a lubricant on Z Plant plutonium cutting and milling tools. In 1967, the composition of stored fabrication oil was estimated to be a 50:50 volumetric mixture of carbon tetrachloride and lard oil from the evaporation of carbon tetrachloride. The carbon tetrachloride also was used to clean the cutting oil from the millings and work surfaces. The carbon tetrachloride/oil mixture was disposed to the same waste sites where solvent was disposed of.

The 216-Z-9 Trench received approximately 4.1 million L (1.1 Mgal) of high-salt, acidic, aqueous, and organic liquid waste from the RECUPLEX process. Material discharged to the trench reportedly included 130,000 to 480,000 kg (286,600 to 1,058,219 lb) of carbon tetrachloride, 8,580 Ci of Am-241, and 500,000 kg of nitrate (DOE/RL-91-58, *Z Plant Source Aggregate Area Management Study Report*; DOE/RL-96-81, *Waste Site Grouping for 200 Areas Soil Investigations*). The carbon tetrachloride was discharged to the 216-Z-9 Trench in combination with other organics, and as a small entrained fraction of process aqueous wastes, and as DNAPL.

When the 216-Z-9 Trench was retired in 1962, it had received approximately 50 to 150 kg (110 to 330 lb) of plutonium. The bulk of this material was expected to be bound to the upper few inches of sediments and sludge in the bottom of the trench. Subsequent sampling and soil removal activities have shown that soil penetration was more extensive than expected.

Mining took place at the 216-Z-9 Trench in 1976 and 1977 to remove plutonium. The upper 0.3 m (1 ft) of soil was removed from the floor of the trench. The mining operation removed an estimated 58 kg (128 lb) of plutonium. Based on data acquired during the mining operation, an estimated 48 kg (106 lb) of plutonium remains in the 216-Z-9 Trench (RHO-ST-21, *Report on Plutonium Mining Activities at 216-Z-9 Enclosed Trench*). The plutonium-contaminated sediment and sludge recovered during the mining operation was drummed and disposed of in trench T-01 of the 218-W-4C Burial Ground. The 6.4 m (21-ft)-deep open space beneath the concrete cover over the 216-Z-9 Trench remains void of soil and contains only the mining equipment (DOE/RL-91-58, RHO-ST-21, ARH-2915). The concrete cover has an uncertain life-span.

No UPRs were associated with this trench.

1.3.2 216-Z-1A Tile Field

The 216-Z-1A Tile Field is located in the 200 West Area, about 153 m (500 ft) south of the 234-5Z Building and immediately south of the 216-Z-1 and 216-Z-2 Cribs. The tile field piping consists of 20 cm (8-in.)-diameter perforated vitrified clay pipe placed on a 1.5 m (5-ft)-deep gravel bed, 4 m (14 ft) bgs (Figure 1-7). The piping consists of a 79 m (260-ft)-long north-south trunk or main pipeline with seven pairs of 21 m (70-ft) laterals spaced at 11 m (35-ft) intervals in a centered, herringbone pattern. The piping system was overlaid with 15 cm (6 in.) of cobbles and 1.5 m (5 ft) of sand and gravel.

The tile field was used in this configuration from 1949 to 1959. The waste stream discharged to the adjacent 216-Z-1 and 216-Z-2 Cribs (1949-1952) and the 216-Z-3 Crib (1952-1959) that overflowed to the tile field consisted of neutral to basic (pH 8 to 10) process waste and analytical and development laboratory waste from the Z Plant via the 241--361 Settling Tank. The total volume discharged from 1949 to 1959 was approximately 1 million L (264,172 gal).

Before the 216-Z-1A Tile Field was reactivated in 1964, a sheet of 0.05 cm (0.02-in.)-thick polyethylene and a 30 cm (1-ft)-thick layer of sand and gravel were added, and the liquid waste discharge piping was routed directly to the central distributor pipe in the tile field. Between 1964 and 1969, a 5 cm (2-in.)-diameter stainless steel pipe was progressively inserted inside the central distributor pipe to divide the tile field into three operational sections (216-Z-1AA, -1AB, and -1AC). During that period, the tile field received the aqueous and organic waste from the Plutonium Reclamation Facility (PRF). No other waste disposal site received PRF wastes during that period, except on two brief occasions while modifications were being made to the piping system. On those two occasions, the waste was discharged to the adjacent 216-Z-1 and 216-Z-2 Cribs.

Wastes from the PRF were discharged from 1964 to 1969 to the 216-Z-1A Tile Field (and the associated 216-Z-1 and 216-Z-2 Cribs). The PRF replaced RECUPLEX in 1964 and operated until 1979. The PRF had essentially the same mission as RECUPLEX and used similar but superior solvent-extraction-column technology. An 80:20 ratio (by volume) of carbon tetrachloride to TBP was used as the extractant. An americium recovery system was installed in the 242-Z Waste Treatment Facility in 1964. The process used a 70:30 volumetric mixture of carbon tetrachloride and DBBP. Between 1964 and 1970, americium was recovered by a batch operation.

From 1964 to 1969, the 216-Z-1A Tile Field received approximately 5.2 million L (1.37 Mgal) of liquid waste from 234-5Z (PFP), 236-Z (PRF), 242-Z (Waste Treatment Facility), and miscellaneous laboratory waste. Material discharged to the tile field reportedly included 57 kg (126 lb) of plutonium, 268,000 kg (591,000 lb) of carbon tetrachloride, 30,000 kg (66,000 lb) of TBP, 20,300 kg (44,800 lb) of DBBP, 3,430 Ci of Am-241, and 3,000 kg of nitrate (DOE/RL-91-58, DOE/RL-96-81). The carbon tetrachloride was discharged to the 216-Z-1A Tile Field in combination with other organics, and as a small entrained fraction of process aqueous wastes, and as DNAPL.

No UPRs were associated with the 216-Z-1A Tile Field.

1.3.3 241-Z-361 Settling Tank

The 241-Z-361 Settling Tank is located approximately 35 m (115 ft) north of the 216-Z-1A Tile Field. The 241-Z-361 Settling Tank is an underground reinforced-concrete structure 8.5 m (28 ft) long and 4.5 m (15 ft) wide, with a 1 cm (3/8-in.)-thick steel liner. The tank has inside dimensions of 7.9 by 4.0 m (26 by 13 ft) with 0.3 m (1-ft)-thick walls (HNF-8735, *241-Z-361 Tank Characterization Report*). The bottom slopes, resulting in an internal height variation between 5.2 and 5.5 m (17 and 18 ft). The top is 0.6 m (2 ft) below grade. Two 15 cm (6-in.)-diameter stainless steel inlet pipes from the 241-Z Facility enter the settling tank from the north. A single 20 cm (8-in.)-diameter stainless steel pipe exits the tank from the south. Several risers are visible above grade (Figures 1-8 and 1-9).

The tank served as the primary solids settling tank for liquid waste from the 234-5Z, 236-Z, and 242-Z Buildings from 1949 to 1973. Effluent in the tank was discharged to the 216-Z-1A Tile Field and several Z Area cribs. The tank currently contains approximately 75 m³ (82 yd³) of water-insoluble precipitates/sludge from past PFP operations. The 241-Z-361 Settling Tank is regulated as a CPP unit.

After 25 years of service, approximately 239 cm (94 in.) (75 m³ [82.05 yd³]) of solids remain in the tank. Sludge samples collected from various depths in the tank from 1975 to 1985 indicate that plutonium concentrations range from 0.09 g/L to 1.00 g/L of sludge. Based on these measurements, the inventory in the tank was estimated to be between 26 and 75 kg of plutonium. Additional sampling was conducted from 1999 to 2001 in accordance with HNF-4371, *241-Z-361 Sludge Characterization Sampling and Analysis Plan*; and HNF-2867, *Tank 241-Z-361 Vapor Sampling and Analysis Plan*. The results of the recent characterization are provided in HNF-8735. Characterization of the tank and sludge indicates the following.

- About 25 kg of Pu-239 and about 4 kg of other fissile isotopes (primarily Pu-240) remain in the tank.
- The pH of the sludge suggests that the plutonium is insoluble, thus limiting mobility in the event of a leak.
- Very low concentrations of potentially hazardous materials such as ammonia, nitrates, and organic compounds are in the sludge.
- Headspace sampling indicates that flammable gas concentrations are far below the lower flammability limit.

In-tank video records suggest that imminent structural failure of the tank is not credible (HNF-8735).

1.3.4 Dispersed Carbon Tetrachloride Vadose-Zone Plume

Before the dispersed-plume RI, carbon tetrachloride had been found throughout the vadose zone within a 0.2 km² area that included the known carbon tetrachloride waste sites near PFP

(BHI-00720). Within this area, carbon tetrachloride had been found both within and beyond the boundaries of the known waste sites. Because one of the main purposes of the dispersed-plume RI was to determine its extent, the size and scale of the dispersed carbon tetrachloride vadose-zone plume can best be described by the RI area. Laterally, the investigation area was defined as the area outside of the known waste sites to the boundaries of the carbon tetrachloride groundwater plume that underlies an 11 km² area within the 200 West Area. Vertically, the investigation area included the entire vadose zone from the ground surface to the water table, which varies in depth from about 40.2 m (132 ft) to greater than 75 m (246 ft) in the 200 West Area.

The main contributor of carbon tetrachloride in the 200 West Area was releases of waste from the PFP complex. To focus the dispersed-plume RI, seven potential modes of carbon tetrachloride release were identified that may be associated with the carbon tetrachloride in the environment. These release modes included leaks from drums of carbon tetrachloride in the drum storage area, releases of heating, ventilation, and air conditioning system condensate to engineered waste sites, plant process releases to the ground, leaks from plant process piping and drains to the ground under the PFP, leaks from effluent-discharge pipelines, deliberate discharges through engineered liquid waste sites such as the 216-Z-1A Tile Field and the 216-Z-9 Trench, and releases from burial grounds. The release modes are depicted in Figure 1-10. In addition to investigating the seven potential release modes, the dispersed-plume RI included investigation of the deep vadose zone and the top of the aquifer in eight areas of persistent carbon tetrachloride concentrations in the groundwater plume. The scope of these investigations is described in Section 2.4.

Since 1992, an interim action in the 200-PW-1 OU has used soil-vapor extraction to minimize the migration of the dispersed carbon tetrachloride vadose-zone plume away from the 200-PW-1 OU waste sites. A summary of the performance evaluation of this interim action is included in Section 2.5.

1.3.5 216-A-8 Crib

The 216-A-8 Crib is located approximately 177 m (580 ft) east of the A Tank Farm. The bottom dimensions of the crib are 259 x 6 m (850 x 20 ft). The long axis of the crib trends to the east-northeast. A 61 cm (24-in.)-diameter, schedule 20, perforated distribution line extends the length of the crib and rests on a 2 m (6.5-ft)-thick layer of rock capped by a 30 cm (12-in.)-thick layer of gravel (Figure 1-11). The gravel fill is mounded over the distribution line. Two layers of Sisalkraft paper² cover the gravel and prevent overlying native sand backfill from filling the void space. The crib floor was excavated to a uniform elevation of 195 m (639.5 ft) above mean sea level. The depth of the excavation varied from 4.9 to 5.8 m (16 to 19 ft.) below the 1955 ground surface. The site was surface stabilized in September 1990 by the addition of 0.6 m (2 ft) of clean fill (DOE/RL-92-04, *PUREX Plant Source Aggregate Area Management Study Report*). Water entered the crib through the 216-A-508 Diversion Box, located due west of the crib. The

² Sisalkraft (paper) is a trademark of Fortifiber Corporation, Los Angeles, California.

crib was permanently isolated in April 1995 by filling the 216-A-508 Control Structure with concrete.

The 216-A-8 Crib received vapor condensate from the operation of several ventilation systems associated with the A, AX, AY, and AZ Tank Farms. The A Tank Farms complex first received self-boiling waste from PUREX in early 1956. The self-boiling waste generated a vapor phase that contained radioactive, organic, and inorganic contaminants. Between 1955 and 1958, the vapor phase was mixed directly with cooling water in two contact condensers, resulting in a large volume of liquid waste. During this time, the crib received over 99 percent of its reported uranium load, 98 percent of its plutonium load, and 83 percent of its beta fission-product load. Approximately 87 percent of the liquid waste, by volume, that the crib received over its 30-year-long operational life came from the contact condenser system during these 30 months (DOE/RL-92-04).

In 1960, a surface condenser system was installed in the 241-A-401 Tank Farm Condenser Pit to replace the contact condenser system. This system used cooling water in pipe coils to indirectly contact (i.e., chill) the vapor phase. This condensation system reduced the volume of liquid waste sent to the crib but increased the concentration of most contaminants in the waste. Between 1966 and 1976, the 216-A-8 Crib received over 149 million L of liquid waste from the surface condenser system. During this time, the AY and AZ Tank Farms were added to the then-active A and AX Tank Farms. Process changes at PUREX, or in tank farm operations, reduced the concentration of uranium and plutonium transported in vapors to the surface condenser system. The 216-A-8 Crib also received 600 L of surface condenser liquid waste in 1978.

In the early 1980s, surface condenser systems were installed on individual tanks in the AY and AZ Tank Farms. In these systems, the condensed vapor was routed back to the tank. Because the cooling water in the pipe coils could become contaminated by a coil failure or pinhole leak, the waste stream was discharged to cribs. The cooling water routinely would have no, or minimal amounts of, contamination. The 216-A-8 Crib received cooling water from the individual surface condensers in 1983 and from 1984 to 1985.

The 241-A-702 Tank Farm Fan House replaced the 241-A-401 Tank Farm Condenser Pit in 1969 and provided deentrainment filters to control noncondensable vapors exiting the surface condensers.

Over its operational life, the 216-A-8 Crib received an estimated 1.15 billion L (303.8 Mgal) of process effluent, which is estimated to be greater than 30 times the pore volume beneath the site (DOE/RL-92-04, DOE/RL-96-81). The hazardous chemical inventory for the 216-A-8 Crib was previously estimated as 320,000 kg of ammonium carbonate, 130,000 kg of DBP, and 50,000 kg of hexone (WHC-EP-0287, *Waste Stream Characterization Report*). Earlier estimates of the inventory also included 46,000 kg of NPH (refined kerosene) (DOE/RL-96-81). However, when the potential dilution factor from the contact condenser system and the potential concentration factor from the improved surface condenser system are taken into account, the calculated quantities of DBP and NPH are only approximately 24,030 kg and 8,400 kg, respectively. Based on additional evaluations, the inventory of hexone at the 216-A-8 Crib is believed to be negligible (DOE/RL-2001-01, Section 2.3.2.4)

The Work Plan (DOE/RL-2001-01, Section 2.3.2.4) listed the organic inventory for the 216-A-8 Crib, based on BHI-01496, *Groundwater/Vadose Zone Integration Project Hanford Soil Inventory Model* (SIM, Rev. 0). The organic inventory (mean values), based on RPP-26744, *Hanford Soil Inventory Model, Rev. 1* (SIM, Rev. 1), includes 128,582 kg of TBP; 55,107 kg of NPH; 1,364 kg of butanol; and 0.16 kg of ammonia, which is significantly larger than the SIM, Rev. 0, values (BHI-01496). The reason for the difference in the organic inventory between the two models is the changes in the SIM inventory conceptual model for the waste site. The 216-A-8 Crib was considered at its capacity in 1958, but it was intermittently reactivated over a period of years until 1985. During the review and revision of waste-site definitions between the publication of SIM, Rev. 0 (BHI-01496), and SIM, Rev. 1 (RPP-26744), it was discovered that there was uncertainty concerning whether wastes had been discharged to the 216-A-8 Crib or the 216-A-24 Crib during the times that the 216-A-8 Crib was either inactive or intermittently active (1971-1978). The 216-A-24 Crib received PUREX organic waste. These uncertainties were the result of operational issues at the 216-A-508 Diversion Box during the period and, because of the ambiguity surrounding these occurrences, the SIM, Rev. 1, assumed that a significant volume of PUREX organic waste was diverted to, and discharged at, the 216-A-8 Crib.

The Work Plan (DOE/RL-2001-01, Section 2.3.2.4) listed the radionuclide inventory for the 216-A-8 Crib, based on BHI-01496. The radionuclide inventory (mean values), based on RPP-26744, decayed through January 1, 2001, includes 8.6 Ci of Sr-90; 2,410.3 Ci of Cs-137; 24,560.8 Ci of H-3 (tritium); 390.8 kg of total uranium; and 3.9 Ci of Pu-241 (RPP-26744). The radionuclide inventory also increased as a result of the changes in the SIM inventory conceptual model for the waste site.

Figure 1-1. Location of the Hanford Site.

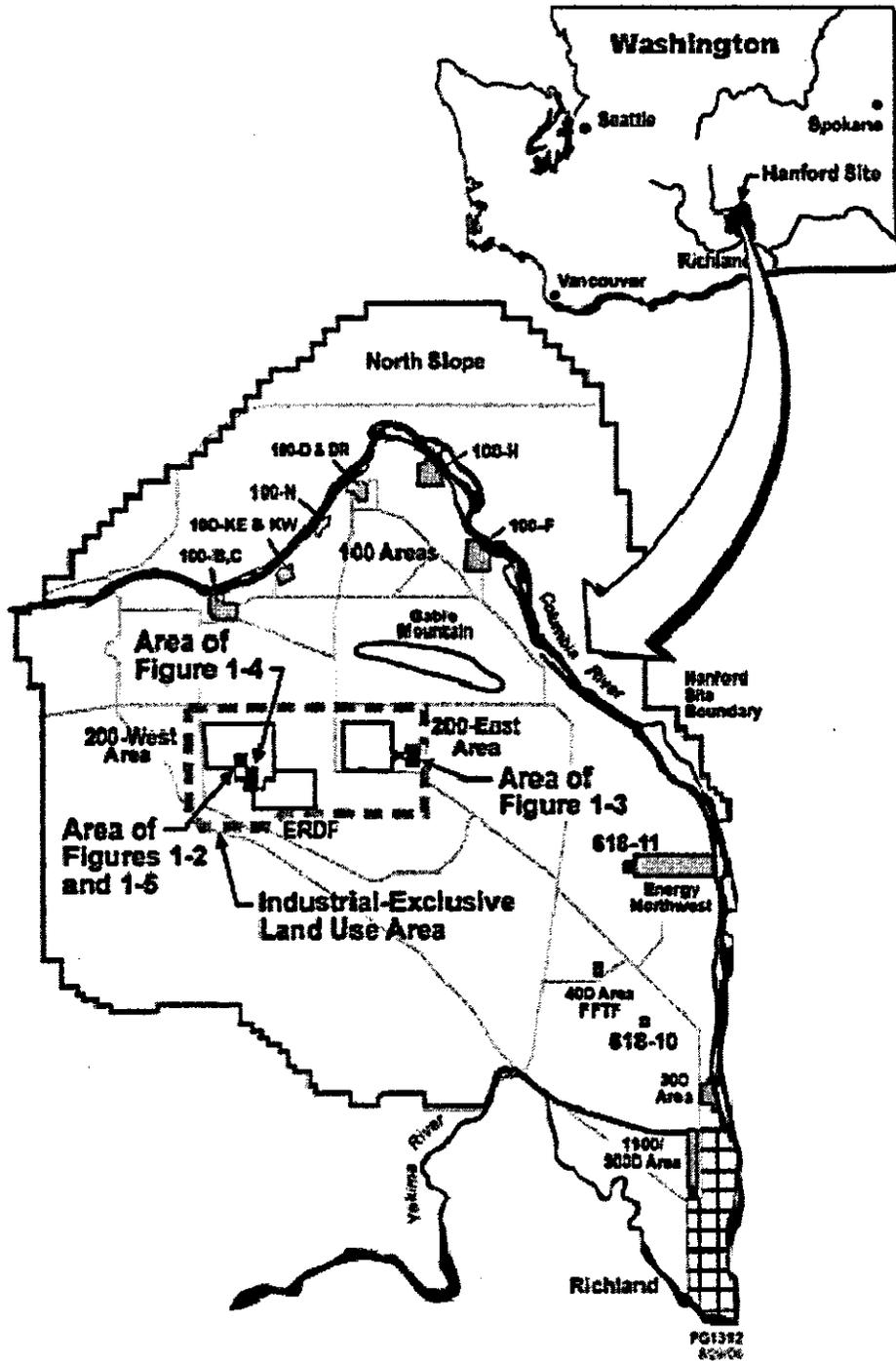
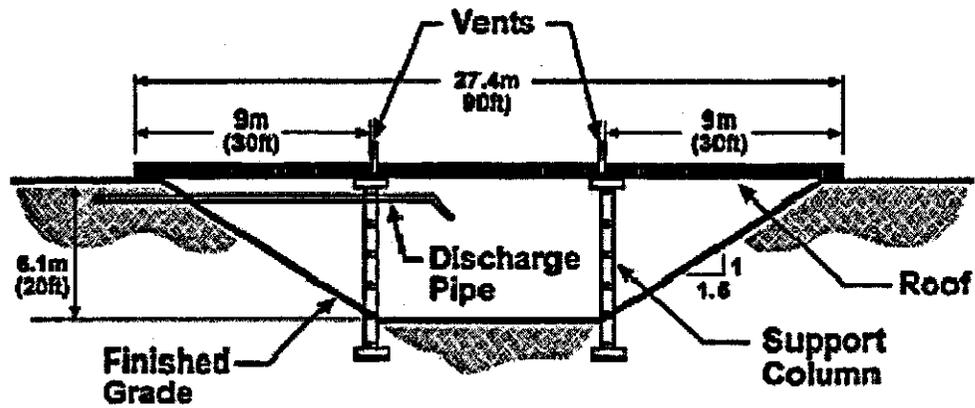
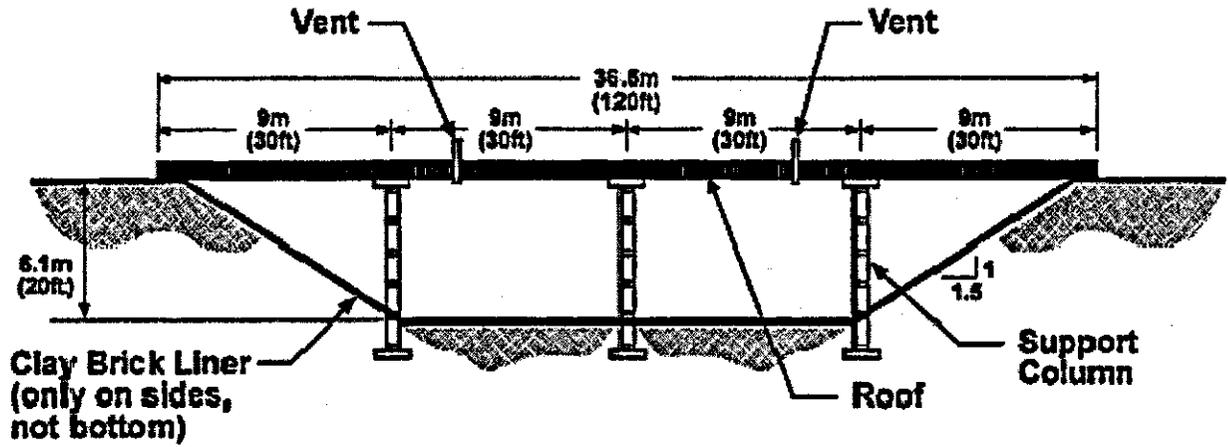


Figure 1-6. Section Views of the 216-Z-9 Trench.

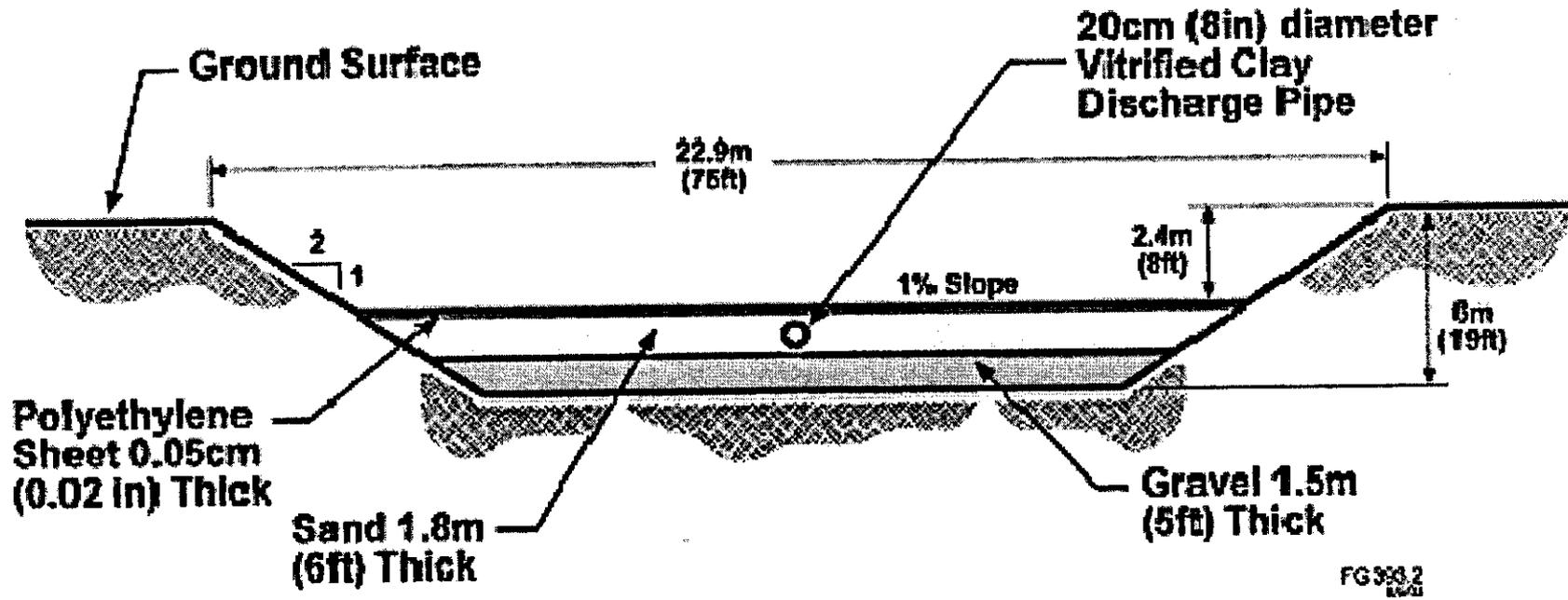
(From DOE/RL-2001-01; clay brick liner also is on the underside of the concrete roof)



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Figure 1-7. Section View of the 216-Z-1A Tile Field.

(From DOE/RL-2001-01)



1-24

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Figure 1-8. Plan View of the 241-Z-361 Settling Tank, Indicating Location and Identification of Tank Risers.

(From HNF-8735)

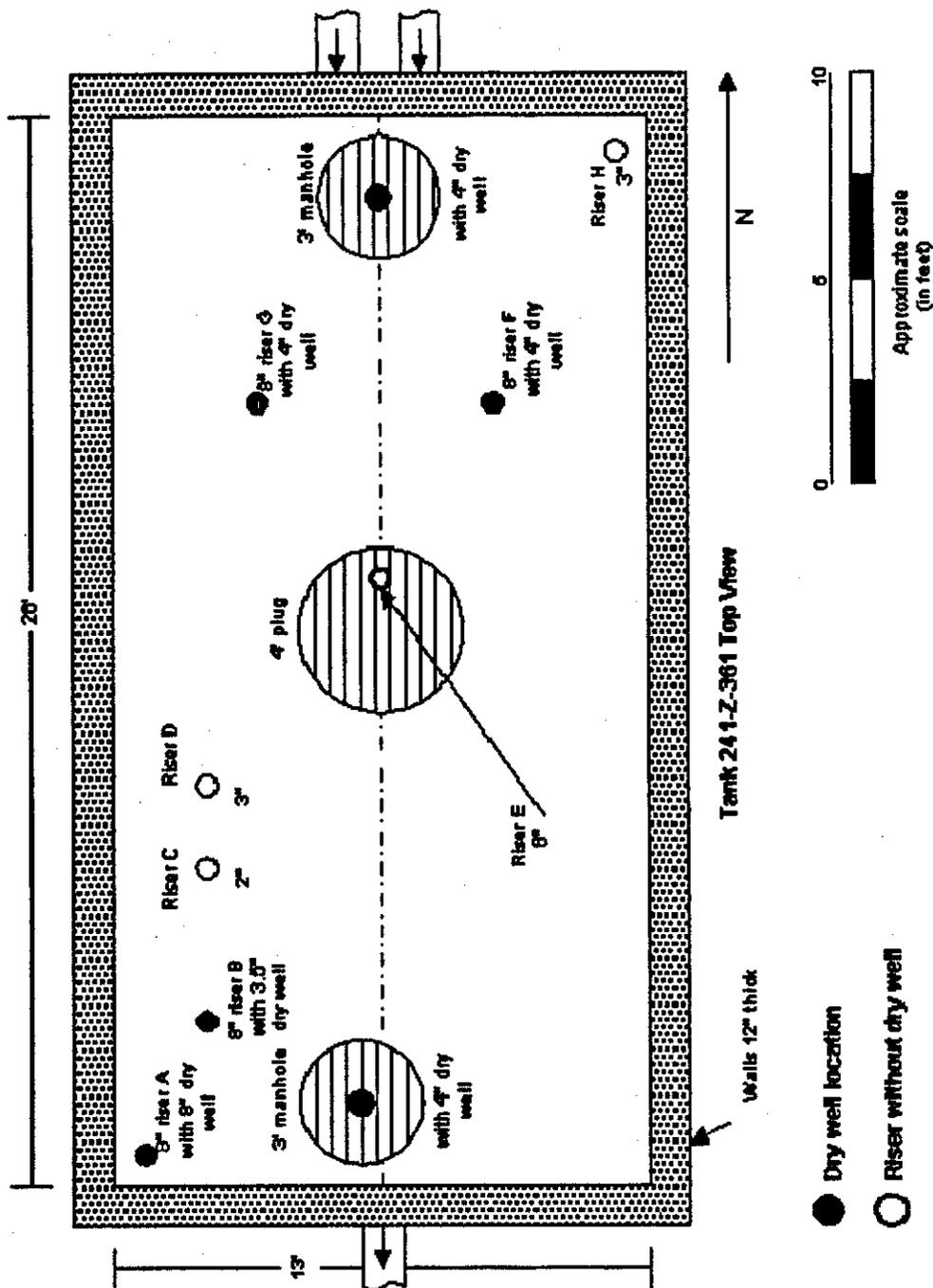


Figure 1-9. Side View of the 241-Z-361 Settling Tank.

(From HNF-8735)

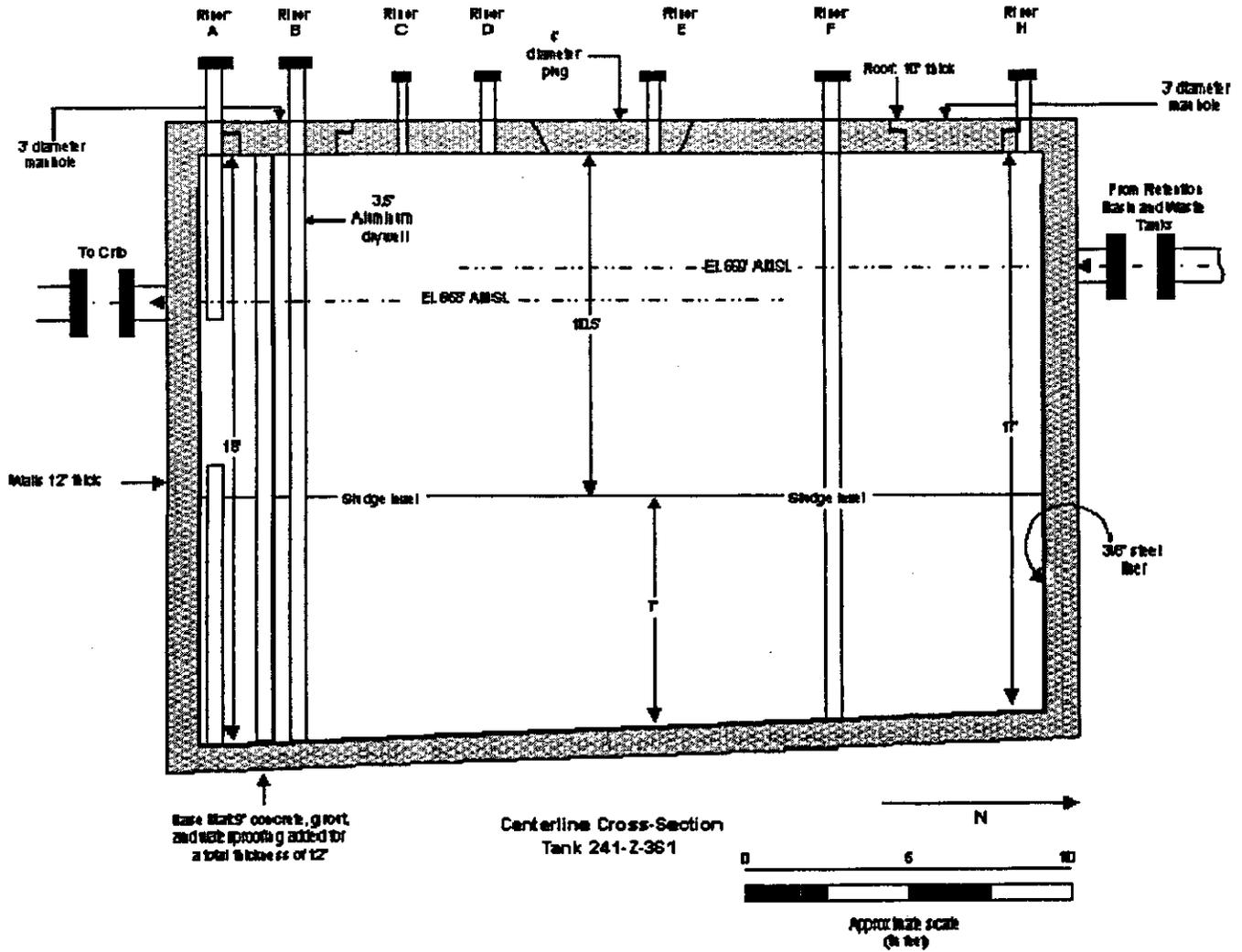


Figure 1-10. Potential Carbon Tetrachloride Release Modes in the 200 West Area.

(From DOE/RL-2001-01)

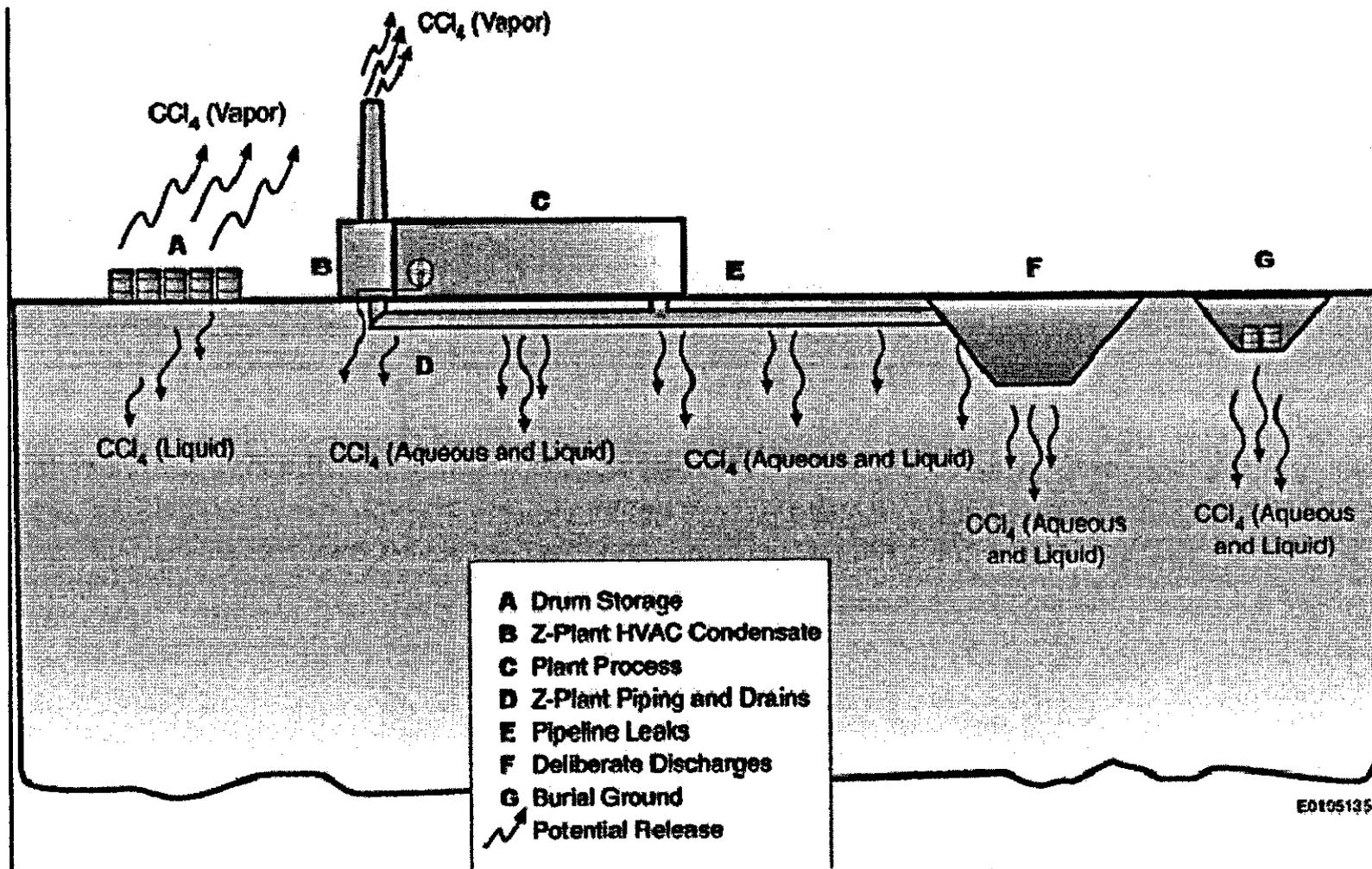


Figure 1-11. Section View of the 216-A-8 Crib.

(From DOE/RL-2001-01)

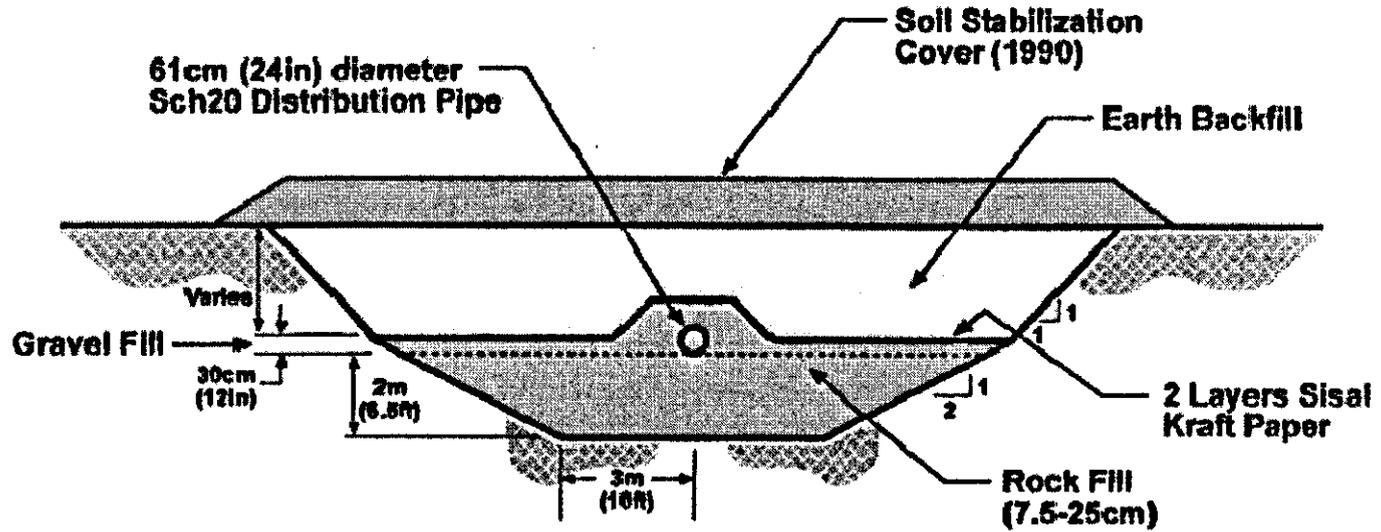


Table 1-1. Alignment of 200-PW-1, 200-PW-3, and 200-PW-6 Operable Unit Analogous Waste Sites with Representative Waste Sites. (2 Pages)

Site Code	Site Type	Representative Waste Site ^a / Operable Unit
200-PW-1 Operable Unit Waste Sites		
216-T-19	Crib	216-Z-9 / 200-PW-1
216-Z-1A	Drain/Tile Field	216-Z-1A / 200-PW-1
216-Z-1 and 216-Z-2	Crib	216-Z-9 / 200-PW-1
216-Z-3	Crib	216-Z-9 / 200-PW-1
216-Z-9	Trench	216-Z-9 / 200-PW-1
216-Z-12	Crib	216-Z-9 / 200-PW-1
216-Z-18	Crib	216-Z-1A / 200-PW-1
241-Z-361	Settling Tank	241-Z-361 / 200-PW-1
UPR-200-W-103	Unplanned release	216-Z-1A / 200-PW-1
UPR-200-W-110	Unplanned release	200-CW-5
200-PW-3 Operable Unit Waste Sites		
200-E-23	Depression/Pit (nonspecific)	Rejected ^b
216-A-2	Crib	216-Z-1A / 200-PW-1
216-A-7	Crib	216-A-8 / 200-PW-3
216-A-8	Crib	216-A-8 / 200-PW-3
216-A-24	Crib	216-A-8 / 200-PW-3
216-A-31	Crib	216-Z-1A / 200-PW-1
216-A-524	Control structure	207-A-SOUTH / 200-PW-4
216-C-4	Crib	216-Z-1A / 200-PW-1
216-S-13	Crib	216-Z-9 / 200-PW-1
216-S-14	Trench	216-Z-9 / 200-PW-1
UPR-200-E-56	Unplanned release	216-B-58 / 200-LW-1
UPR-200-W-125	Unplanned release	Rejected ^c
200-PW-6 Operable Unit Waste Sites		
216-Z-4	Trench	216-B-58 / 200-LW-1
216-Z-5	Crib	216-T-28 / 200-LW-1
216-Z-6	Crib	216-B-58 / 200-LW-1
216-Z-8	French Drain	216-U-3 / 200-MW-1
216-Z-10	Injection/Reverse Well	216-B-5 / 200-TW-2
231-W-151	Receiving Vault	207-A-SOUTH / 200-PW-4
241-Z-8	Settling Tank	216-U-3 / 200-MW-1
UPR-200-W-130	Unplanned release	207-A-SOUTH / 200-PW-4

Table 1-1. Alignment of 200-PW-1, 200-PW-3, and 200-PW-6 Operable Unit Analogous Waste Sites with Representative Waste Sites. (2 Pages)

Site Code	Site Type	Representative Waste Site ^a / Operable Unit
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^a The representative waste site for each waste site is based on the most applicable contaminant distribution model.

^b 200-E-23 Depression Pit was a borrow source and did not receive waste.

^c UPR-200-W-125 is a duplicate of the 216-U-15 Trench.

See Appendix A of the Work Plan (DOE/RL-2001-01, *Plutonium/Organic-Rich Process Condensate/Process Waste Group Operable Unit RI/FS Work Plan, Includes: 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units*) for a discussion of the alignment of waste sites with representative sites. This alignment will be reviewed in the feasibility study.

Table 1-2. 200-PW-1 Plutonium/Organic Rich Process Waste Group Operable Unit Representative Waste Sites. (2 Pages)

Site Code	Site Name	Location	Dates of Operation	Source Facility	Contaminant/ Volume Released	Depth	Waste Site Dimensions	General Description
216-Z-1A	216-Z-1A, 216-Z-1A Tile Field, 234-5 Tile Field, 216-Z-1AA, 216-Z-1AB, and 216-Z-1AC	South of the 234-5Z facility perimeter fence and immediately south of the 216-Z-1&2 Cribs	1949 to 1969	Process and laboratory wastes from 234-5Z via the 241-Z-361 Settling Tank Overflow from the 216-Z-1, 216-Z-2, and 216-Z-3 Cribs, originally from PRF PRF wastes Uranium wastes from 236-Z Americium recovery wastes from 242-Z	5,200,000 L (1.37 Mgal) of effluent waste containing uranium, americium, plutonium, and carbon tetrachloride	-	79 x 23 m (260 x 75 ft)	The tile field is a below-grade trunk line orientated north to south with seven pairs of lateral pipes spaced in a herringbone pattern. The vitrified clay pipes lie on a gravel bed. The tile field received overflow effluent waste from the 216-Z-1, 216-Z-2, and 216-Z-3 Cribs. It was expanded in three sections known as 216-Z-1AA, 216-Z-1AB, and 216-Z-1AC.
216-Z-9	216-Z-9, 216-Z-9 Cavern, 234-5Z RECUPLEX Cavern, 216-Z-9 Trench, and 216-Z-9 Covered Trench	South of 19 th Street and east of the 234-5Z Building	1955 to 1962	RECUPLEX waste including both aqueous and organics	4,090,000 L (1.1 Mgal) of effluent waste containing approximately 106 kg (234 lb) plutonium (of which an estimated 58 kg [128 lb] was later recovered, leaving 48 kg [106 lb] in the waste site), cadmium, nitrates, Am-241, and carbon tetrachloride; is highly acidic	6 m (21 ft)	37 x 27 m (120 x 90 ft)	The trench is a rectangular open structure with a concrete cover supported by six concrete columns. The trench walls, the underside of the cover, and the support columns are lined with an acid-resistant brick. Two stainless steel pipes were used to discharge waste to the trench. In 1973 characterization showed that it was necessary to reduce the amount of plutonium in the trench. Thus, the floor was mined for plutonium in 1976 and 1977. Approximately 58 kg (128 lb) of plutonium was recovered. In 1999, a gravel biobarrier was placed near the west side of the trench, because an alpha surface contamination adjacent to the west side of the crib resulted from an ant hill.

Table 1-2. 200-PW-1 Plutonium/Organic Rich Process Waste Group Operable Unit Representative Waste Sites. (2 Pages)

Site Code	Site Name	Location	Dates of Operation	Source Facility	Contaminant/Volume Released	Depth	Waste Site Dimensions	General Description
241-Z-361	241-Z-361 Settling Tank	South of the 236-Z Building; inside the Z Plant complex security fence	1949 to 1973	Rubber glove line, remote mechanical A line, and remote mechanical C line Plutonium Finishing Plant process Laboratory wastes from 234-5Z via the 241-Z-361 Settling Tank Solvent and acidic aqueous wastes from the PRF in the 236-Z Building Americium recovery operations from the 242-Z Building	Approximately 750 L (200 gal) of liquid remains in the tank after pumping in 1975. 75,000 L (20,000 gal) of sludge remain (FH-0002791), containing small quantities of Am-241 and uranium, approximately 25 kg of Pu-239, 4 kg of other fissile isotopes (primarily Pu-240), very low concentrations of organics (carbon tetrachloride, tributyl phosphate), and nitrates	5.2 m (17 ft) depth of tank at inlet and 5.5 m (18 ft) depth of tank at outlet Top of tank is 1 m (2 ft) bgs	7.9 x 4 m (26 x 13 ft) length and width of tank	The site contains an underground reinforced concrete settling tank with a 3/8-in. stainless steel liner. Two 15 cm (6-in.) diameter stainless steel pipes entered the tank from the 234-5Z, 242-Z, and 236-Z Buildings via the sump tanks in the 241-Z Facility. A 20 cm (8-in.) diameter stainless steel pipe exited the tank from the south. The tank was interim stabilized in 1985.

Updated from DOE/RL-2001-01, *Plutonium/Organic-Rich Process Condensate/Process Waste Group Operable Unit RI/FS Work Plan*, Includes: 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units.

FH-0002791, "Submittal of Documentation in Fulfillment of TPA Milestone M-15-37B."

PRF = Plutonium Reclamation Facility.

RECUPLEX = Recovery of Uranium and Plutonium by Extraction (Plant or process).

Table 1-3. 200-PW-3 Organic Rich Process Condensate/Process Waste Group Representative Waste Site.

Site Code	Site Name	Location	Dates of Operation	Source Facility	Contaminant/Volume Released	Depth	Waste Site Dimensions	General Description
216-A-8	216-A-8, 216-A-8 Crib and Overflow Pond	East of the 200 East Area perimeter fence, east of the A Tank Farm.	1955 to 1991	Vapor condensate from operation of several ventilation systems associated with the A, AX, AY, and AZ Tank Farms.	1,150,000,000 L (303,798,003 gal) of waste containing 390.8 kg uranium, 3.9 Ci Pu-241, 2,410.3 Ci Cs-137, 8.6 Ci Sr-90, 24,560.8 Ci tritium, 128,582 kg of tributyl phosphate, 55,107 kg of normal paraffin hydrocarbon, 1,364 kg butanol, and 0.16 kg ammonia.	4 m (14 ft)	259 x 6 m (850 x 20 ft)	<p>The crib has a 61 cm (24 in.) perforated distribution pipe placed horizontally 2 m (7 ft) below grade. The waste management unit contains 2 m (6.5 ft) of gravel fill and has been backfilled. The crib excavation is 1:2. The unit also contains four test risers, a vent riser, and two layers of Sisalkraft[®] paper for a barrier. The 216-A-508 Control Structure was used to divert effluent to either the 216-A-8 Crib or the 216-A-24 Crib. The 216-A-508 Control Structure is located west of the crib. Ancillary equipment includes Sampler Pit No. 2. The 216-A-8 Crib overflow occurred through a 41 cm (16 in.) diameter pipe exiting to the north at the east end of the crib. The pipe emptied into a narrow ditch that flowed northward. A small overflow pond was excavated at the northeast end of the ditch to receive the excess waste water from the crib. Tri-Party Agreement Milestone M-17-28 required that all discharge to the crib be ceased by September 1991. Condensate has not been discharged to the crib since early 1985. This site was surface stabilized in September 1990. The unit was permanently isolated on April 20, 1995, by filling the 216-A-508 Control Structure with concrete. The control structure filter and crib vent filters were removed and disposed of in August 1995.</p> <p>Radiological surveys are performed annually. Wells 299-E25-4, 299-E25-5, 299-E25-6, 299-E25-7, 299-E25-8, 299-E25-9, and 299-E25-14 monitor this unit. The data indicate that breakthrough to the groundwater has not occurred. However, the subsurface distribution of Cs-137 based on geophysical logging is uncertain. The crib and overflow areas are surrounded by chain and concrete AC-540 markers. They are posted with Underground Radioactive Material signs.</p>

Updated from DOE/RL-2001-01, *Plutonium/Organic-Rich Process Condensate/Process Waste Group Operable Unit RI/FS Work Plan, Includes: 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units.*

* Sisalkraft (paper) is a trademark of Fortifiber Corporation, Los Angeles, California.

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2.0 REMEDIAL INVESTIGATION APPROACH AND ACTIVITIES

This chapter summarizes the data collection activities performed during the Plutonium/Organic Rich Group OU RI at the four representative waste sites and for the dispersed carbon tetrachloride vadose-zone plume. This summary includes tables and figures showing where the investigations were conducted, the rationale for collecting samples at specific locations or depths, and other details about the sampling methodology. The results of these RI activities are presented and discussed in Chapter 3.0.

This chapter also includes a summary of the performance evaluation of the interim-action soil-vapor extraction (SVE) that has been used since 1992 in the 200-PW-1 OU to minimize the migration of the dispersed carbon tetrachloride vadose-zone plume away from the waste sites. Because the dispersed carbon tetrachloride vadose-zone plume and its current or future potential to impact the groundwater in the 200 West Area is one of the focus areas of this RI report, this chapter also includes a summary section on the carbon tetrachloride groundwater plume in the 200-ZP-1 Groundwater OU.

The RI data collection activities involved multiple DQO processes, SAPs, and resulting borehole summary or field reports. The following table shows the correlation between these various documents.

Investigation	Data Quality Objectives Report ^a	Sampling and Analysis Plan ^a	Field Report ^a
200-PW-1 OU Representative Site (216-Z-9 Borehole C3427)	CP-15371	DOE/RL-2001-01, Appendix B	WMP-30566
200-PW-3 OU Representative Site (216-A-8 Borehole C4545)	CP-15371	DOE/RL-2001-01, Appendix B	WMP-27020
200-PW-1 OU Step I Dispersed Plume	BHI-01544	DOE/RL-2001-01, Appendix C	CP-13514
200-PW-1 OU Step II Dispersed Plume	CP-15372	DOE/RL-2001-01, Appendix D	D&D-30838
200-PW-1 OU DNAPL (216-Z-9 Borehole C3426)	CP-15373	DOE/RL-2001-01, Appendix E	WMP-26264
200-PW-1 OU DNAPL Source Term	CP-15373	DOE/RL-2004-78	DOE/RL-2006-58 ^b

^a Full reference citations are located in Chapter 5.0.

^b DOE/RL-2006-58 includes the individually approved test plans for field investigations.

The DQO process is used to develop a data-collection strategy consistent with data uses and needs. The objectives identified include collecting data that will be used to define the nature and extent of radiological and chemical contamination, supporting evaluation of risks, and assisting in the evaluation, selection, and design of remediation alternatives.

Data were collected to characterize the nature and vertical extent of chemical and radiological contamination and the physical conditions in the vadose zone underlying the historical boundaries of the 216-Z-9 Trench (200-PW-1 OU) and the 216-A-8 Crib (200-PW-3 OU).

Data-collection activities that previously were conducted to characterize the 216-Z-1A Tile Field (200-PW-1 OU) and the 241-Z-361 Settling Tank (200-PW-1 OU) also are summarized in this chapter. Data also were collected to characterize the nature, lateral extent, and vertical extent of the dispersed carbon tetrachloride contamination in the vadose zone and the presence and distribution of DNAPL carbon tetrachloride in the vadose zone (200-PW-1 OU).

2.1 216-Z-9 TRENCH REMEDIAL INVESTIGATION, 200-PW-1 OPERABLE UNIT

2.1.1 Sampling and Analysis of Characterization Boreholes

2.1.1.1 Well 299-W15-46 (C3426)

The area south of the 216-Z-9 Trench was selected for the vertical borehole DNAPL investigation using well 299-W15-46 (C3426) for the following reasons (CP-15373). The wells around the 216-Z-9 Trench are shown in Figure 2-1.

- Groundwater collected from well 299-W15-8, on the south side of the trench, contained low concentrations of plutonium. It is unknown if the borehole annulus provided the preferential pathway or if the plutonium was carried through the vadose zone by a carbon tetrachloride organic mixture (i.e., DNAPL).
- There are fewer SVE wells on the south side compared to the west, north, and east sides (Figure 2-1). Therefore, SVE may have had a lesser impact on the soils on the south side.
- Characterization of the trench before plutonium mining indicated that the region of the lowest floor elevation was in the south half of the trench (ARH-2915, p. 11). Most of the surface plutonium was accumulated in this region.
- The top of the Cold Creek unit silt layer locally slopes to the southeast under the 216-Z-9 Trench site (BHI-01631, *Carbon Tetrachloride Field Investigation Report for Drilling in the Vicinity of PFP and the 216-Z-9 Trench*).
- Drilling and sampling to investigate DNAPL occurrence was conducted on the northeast corner of the 216-Z-9 Trench in 1995 at well 299-W15-32 (Figure 2-1). No DNAPL was detected (BHI-00431, *DNAPL Investigation Report*).
- Deepening of two wells through the Cold Creek unit to groundwater on the north (well 299-W15-95) and west (well 299-W15-84) sides of the trench in 2001 did not indicate high concentrations of carbon tetrachloride (BHI-01631).
- The steep bank of the west side of the trench limits the placement of a borehole close to the trench.

- Recent geophysical surveys indicate the presence of anomalies that potentially could indicate DNAPL on both the southwest and northwest sides of the 216-Z-9 Trench (Waddell et al., 2003, *Non-Invasive Determination of the Location and Distribution of Free-Phase Dense Nonaqueous Phase Liquids (DNAPL) by Seismic Reflection Techniques, Final Report*).
- The floor of the crib is smaller than the surface footprint, because the trench walls slope inward with depth. The middle of the south side was selected, to position the borehole as close as possible to the floor of the trench (Figure 2-1).

Well 299-W15-46 (C3426) was drilled from October 2003 to May 2005. The primary purpose of well 299-W15-46 was to support characterization of the subsurface near the 216-Z-9 Trench for evaluation of DNAPL carbon tetrachloride for both the 200-ZP-1 OU RI (groundwater) and the 200-PW-1 OU RI (vadose zone) (DOE/RL-2001-01, Appendix E). The drilling and sampling activities were completed as described in WMP-26264.

Borehole 299-W15-46 was drilled to a total depth of 160 m (525 ft) bgs, but only that portion of the borehole within the vadose zone (to 70 m or 229 ft depth) is discussed in this RI report. Groundwater samples and additional soil samples from the water table to total depth also were collected to support the 200-ZP-1 Groundwater OU RI. The results for these samples are discussed in DOE/RL-2006-24, *Remedial Investigation Report for 200-ZP-1 Groundwater Operable Unit*.

During advancement of the borehole, drill cuttings and samples were field screened for the presence of VOCs and radionuclides. Soil samples were collected at specific depths during the installation of Borehole C3426 in accordance with the sample design in the SAP (DOE/RL-2001-01, Appendix E), as shown in the following table. A total of 10 soil and 12 vapor samples were collected during drilling activities in the vadose zone. The soil samples were submitted to analytical laboratories for chemical and radiological analysis and determination of physical properties. As described in D&D-30565, duplicate and split soil samples and associated liquid QC samples (equipment and trip blanks) also were obtained for laboratory analysis. Additional samples were collected to support radiological screening, waste management, physical-property testing, and Science & Technology studies related to the 216-Z-9 Trench contamination migration.

Approximate Sample Depths (ft bgs)			Project / Rationale for Sample
Split-Spoon Samples ^a	Soil-Vapor Samples ^b	Groundwater Samples ^c	
25	25	N/A	Waste designation sample near base of trench; 200-PW-1 OU (SVE) soil-vapor profile
N/A	45	N/A	200-PW-1 OU (SVE) soil-vapor profile
69	69	N/A	Pacific Northwest National Laboratory sample for CCl ₄ mobility, plutonium mobility near H1/H2 contact (possible plutonium contamination); 200-PW-1 (SVE) soil-vapor profile
86	86	N/A	DNAPL sample above the CCU (possible plutonium contamination)
103	N/A	N/A	PNNL sample for CCl ₄ mobility, plutonium mobility, CCl ₄ transport above the CCU

Approximate Sample Depths (ft bgs)			Project / Rationale for Sample
Split-Spoon Samples ^a	Soil-Vapor Samples ^b	Groundwater Samples ^c	
106	106	N/A	DNAPL, 200-PW-1 OU sample at the top of CCU (zone of potential accumulation/sorption)
111	N/A	N/A	PNNL sample for CCl ₄ transport within the CCU
115	115	N/A	DNAPL sample within the CCU (zone of potential perching)
119	119	N/A	DNAPL, 200-PW-1 OU sample at the bottom of the CCU (evaluate gradient through CCU)
121.5	N/A	N/A	PNNL sample for CCl ₄ mobility, plutonium mobility below the CCU
N/A	138	N/A	200-PW-1 OU (SVE) soil-vapor profile
N/A	155	N/A	200-PW-1 OU (SVE) soil-vapor profile
170	170	N/A	200-PW-1 OU sample
180	180	N/A	DNAPL sample at historic high water table (top of historic high water table is 178 ft) (evaluate vertical distribution of carbon tetrachloride between CCU and water table)
220	220	N/A	DNAPL sample at capillary fringe (zone of potential accumulation)
222.5	N/A	N/A	200-PW-1 OU sample within capillary fringe
225	N/A	225	DNAPL, 200-ZP-1 Groundwater OU remedial investigation/ feasibility study sediment and groundwater sample interval in shallow portion of unconfined aquifer (aquifer zone most likely to have received DNAPL) (collect sample within top 3 ft of aquifer to evaluate presence of sharp vertical gradient)
227.5	N/A	227.5	PNNL sample for CCl ₄ mobility in upper portion of aquifer

All depths are approximate.

^a Depth of beginning of sample interval below ground surface. Additional samples may be collected if the geologic strata are not encountered in the specified sample.

^b Soil-vapor sample collected after split-spoon sampler is removed from borehole. Inflatable packer installed and soil-vapor sample collected. Soil-vapor samples collected only at specified intervals.

^c Assumes that the water table is at 225 ft for purpose of this design. The depth of the water sample would be recorded as the depth of the bottom of the temporary casing below ground surface. Each groundwater sample interval will include water for carbon tetrachloride field screening as well as for laboratory analysis.

CCU = Cold Creek unit.

OU = operable unit.

DNAPL = dense, nonaqueous-phase liquid.

SVE = soil-vapor extraction.

N/A = not applicable.

Soil-vapor samples were collected with a displacement pump from intervals isolated by an inflatable packer. The vapor samples were purged through TYGON¹ tubing into Tedlar² sampling bags. The soil-vapor samples then were analyzed for carbon tetrachloride using field screening instruments.

¹ TYGON is a registered trademark of Norton Performance Plastics Corporation, a Saint-Gobain Company, Akron, Ohio.

² Tedlar is a registered trademark of E. I. du Pont de Nemours and Company, Wilmington, Delaware.

Because of the proximity of the borehole to the 216-Z-9 Trench, which is known to be radioactively contaminated, full-time radiological monitoring was conducted during drilling and sampling in the vadose zone. Several different radiation detectors were used as part of the monitoring activities.

A sample of sediment from each split-spoon interval (except for the samples from the Pacific Northwest National Laboratory [PNNL]) was tested for visual indications of the presence of DNAPL. A small quantity of sediment was placed in a vial, and sufficient deionized water was added to barely saturate the sediment sample. Each sample was gently shaken, and the behavior of the liquid was observed upon inversion of the capped vial. It has been observed during testing before drilling that the presence of carbon tetrachloride in water-saturated samples can result in a sheeting action along the inner walls of the vial, with little or no sediment adhering to the walls of the vial, whereas in water-saturated sediment samples with no carbon tetrachloride present, considerable fine sediment tends to adhere to the vial walls. The sheeting occurs because the carbon tetrachloride reduces the interfacial tension. Observable sheeting of varying degrees was found in all sediment samples tested in this manner at well 299-W15-46 (C3426). After shaking the vial and allowing the sediment in the vial to settle, five drops of a 5 percent aqueous iodine solution were added to the supernatant liquid. In the presence of pure carbon tetrachloride DNAPL, the magenta liquid forms a distinct layer between the sediments and the supernatant liquid.

Based on the field screening results of the vadose-zone samples and depth-discrete groundwater samples collected during well drilling (WMP-26264), the decision was made to complete the well as a groundwater monitoring well rather than as an SVE well. Additional details about the borehole drilling, sampling, field screening, and well completion are documented in the borehole summary report (WMP-26264).

Borehole geophysical logging records the vertical distribution of gamma-emitting radionuclides in the soil surrounding the borehole as a means of locating and quantifying contamination, in addition to aiding in interpretation of subsurface stratigraphy. The borehole-logging equipment is calibrated annually, with calibration data used to calculate casing attenuation factors that convert measured peak-area count rates to radionuclide concentrations (WMP-27020). Geophysical logging using the Spectral Gamma Logging System (SGLS) was conducted between May and September 2004 during drilling through the vadose zone. The SGLS logging system provided a continuous radiometric signature of the soils, measured through a single thickness of casing, throughout the entire interval of the vadose zone. Because of issues related to high radiation and carbon tetrachloride vapors, the need to downsize the casing at various depths, and safety reviews, it took several months to drill and sample this well through the vadose zone and complete the borehole geophysical logging.

2.1.1.2 Well 299-W15-48 (C3427)

The slant well (well 299-W15-48 [C3427]) is located 12.8 m (42 ft) north of the southern side of the 216-Z-9 Trench (at the surface), and 5.5 m (18 ft) east of the eastern side of the 216-Z-9 Trench (at the surface) (Figure 2-1). The well also is located 3.7 m (12 ft) north of the southern side of the 216-Z-9 Trench (at the base) and 14.6 m (48 ft) east of the eastern side of the 216-Z-9 Trench (at the base).

The decision to drill the slant borehole under the southern portion of the 216-Z-9 Trench was made for the following reasons.

- The highest soil concentrations of carbon tetrachloride during previous drilling were detected in wells on the southern side of the waste site (well 299-W15-217 in 1992; well 299-W15-46 in 2004).
- Characterization of the trench before plutonium mining indicated that the region of the lowest floor elevation was in the south half of the trench (ARH-2915, p. 11). Most of the surface plutonium was accumulated in this region.
- The top of the CCU silt layer locally slopes gently to the southwest under the 216-Z-9 Trench floor.
- Drilling and sampling to investigate DNAPL occurrence was conducted on the south side of the 216-Z-9 Trench at well 299-W15-46 in 2003-2004. Field-screening results and soil-equilibrium calculations (which are discussed in Section 3.2.1) indicate that DNAPL is present in the upper vadose zone.
- Drilling and sampling to investigate DNAPL occurrence was conducted on the northeast corner of the 216-Z-9 Trench in 1995 at well 299-W15-32 (Figure 2-1). No DNAPL was detected (BHI-00431).
- Deepening of two wells through the CCU to groundwater on the north (well 299-W15-95) and west (well 299-W15-84) sides of the trench in 2001 did not indicate high concentrations of carbon tetrachloride (BHI-01631).

The primary focus of sampling beneath the 216-Z-9 Trench was to characterize the CCU for the presence of DNAPL carbon tetrachloride. However, samples also were collected from each major geologic unit and analyzed for radiological and chemical contaminants and physical properties. In the SAP (DOE/RL-2001-01, Table B-12), 12 soil samples and 9 soil-vapor samples were planned. Of the 12 planned soil samples, 8 were to be collected to support the 216-Z-9 Trench remedial and DNAPL investigations, and 4 were to be collected to support the PNNL contaminant transport studies. Of the 9 planned soil-vapor samples, 5 were to be collected to support the 216-Z-9 Trench DNAPL investigation, and 4 were to be collected to support the groundwater remedial actions evaluation of the 200-PW-1 OU interim action (SVE). The rationale for each planned sample depth was as follows:

- 14.6 to 15.4 m (48 to 50.5 ft): Characterize the vadose zone for DNAPL at the depth that corresponds to the initial depth of elevated plutonium concentrations in well 299-W15-8 south of the 216-Z-9 Trench
- 20.3 to 21.0 m (66.5 to 69 ft): Characterize the Hanford formation upper gravel sequence for 200-PW-1 OU COPCs as close as possible to the area underneath the footprint of the 216-Z-9 Trench

- 21.0 to 21.8 m (69 to 71.5 ft): Characterize the contact between the Hanford formation upper gravel and sandy sequences for contaminant transport and evaluation of SVE interim action
- 24.4 to 27.0 m (86 to 88.5 ft): Characterize the vadose zone for DNAPL within the Hanford formation sandy sequence to evaluate vertical distribution of contaminants
- 30.3 to 31.1 m (99.5 to 102 ft): Characterize the vadose zone near the top of the CCU, a zone of potential perching, for contaminant transport and evaluation of SVE interim action
- 31.2 to 32.0 m (102.5 to 105 ft): Characterize the Hanford formation sandy sequence for 200-PW-1 COPCs near the contact with the CCU, a zone of potential perching
- 32.3 to 33 m (106 to 108.5 ft): Characterize the CCU silt, a potential zone of sorption, for DNAPL
- 33.8 to 34.6 m (111 to 113.5 ft): Characterize the CCU silt/carbonate contact for contaminant transport and evaluation of SVE interim action
- 35.1 to 35.8 m (115 to 117.5 ft): Characterize the CCU silt/carbonate contact for DNAPL
- 35.8 to 36.6 m (117.5 to 120 ft): Characterize the bottom of the CCU for 200-PW-1 OU COPCs; evaluate contaminant gradients within the CCU
- 36.7 to 37.5 m (120.5 to 123 ft): Characterize the contact between the CCU and the Ringold Formation for DNAPL
- 37.6 to 38.4 m (123.5 to 126 ft): Characterize the top of the Ringold Formation for contaminant transport and evaluation of SVE interim action; evaluate gradient through the CCU.

The depths of the planned samples were adjusted slightly, based on new information about the stratigraphy anticipated beneath the trench. The new information was obtained during drilling of well 299-W15-46 south of the trench in 2003-2004 and the cross-well seismic investigation of the stratigraphy in the vicinity of the trench conducted in March 2005 (see Section 2.4). The modified depths were selected to meet the objectives of the sampling rationale in the SAP. The correlation between the sample depths in the SAP and the modified depths is provided in Table 2-1.

From a position 5.5 m (18 ft) east of the eastern side of the trench (at the surface), the angle of the borehole was selected to maximize the number of samples collected beneath the footprint of the trench floor (Figure 2-2). An angle of 32 degrees from vertical (58 degrees from horizontal) was selected so that all 7 lower samples (from the 5th sample at 26.4 m vertical or 86.5 vertical ft bgs to the 11th sample at 36.2 m vertical or 118.7 vertical ft bgs) would be collected beneath the footprint of the trench.

On December 21, 2005, the EPA concurred with drilling and sampling the slant well in the southern half of the crib and expressed a preference for maximizing the number of samples to be collected beneath the footprint of the 216-Z-9 Trench.

Well 299-W15-48 (C3427) was drilled from February 2006 to May 2006. The primary purpose of this well was to gather data for further characterization of the distribution of radiological and chemical contamination directly beneath the 216-Z-9 Trench. The following sampling activities were completed as described in WMP-30566.

Well 299-W15-48 started on the east side of the 216-Z-9 Trench and was drilled at a 32-degree angle from vertical to the west to a total downhole depth of 44.3 m (145.5 ft) (Figures 2-1 and 2-2). During advancement of the borehole, drill cuttings and samples were field screened for the presence of VOCs and radionuclides. A total of 11 soil and 9 vapor samples were collected during drilling activities in the vadose zone. The soil samples were submitted to analytical laboratories for chemical and radiological analysis and determination of physical properties. As described in D&D-30565, duplicate and split soil samples and associated liquid QC samples (equipment and trip blanks) also were obtained for laboratory analysis. Additional samples were collected to support radiological screening, waste management, physical property testing, and Science & Technology studies related to the 216-Z-9 Trench contamination migration.

Soil-vapor samples were collected with a displacement pump from intervals isolated by an inflatable packer. The vapor samples were purged through TYGON tubing into Tedlar sampling bags. The soil-vapor samples then were analyzed for carbon tetrachloride using field-screening instruments.

Because of the proximity of the borehole beneath the 216-Z-9 Trench, which is known to be radioactively contaminated, full-time radiological monitoring was conducted during drilling and sampling in the vadose zone. Several different radiation detectors were used as part of the monitoring activities.

A sample of sediment from each split-spoon interval also was tested for visual indications of the presence of DNAPL, using the methodology previously described for well 299-W15-46.

Geophysical logging using the SGLS and the neutron moisture logging system were conducted in May 2006 after the borehole was drilled to a total depth of 44 m (145 ft) downhole.

Well 299-W15-48 was completed as an SVE well. The well is screened from 43.0 to 33.8 m (141 to 111 ft) downhole (36.6 to 28.7 m or 120 to 94 ft vertical depth) under the floor of the trench. The well was connected to the SVE system on August 1, 2006. With only this well online to the SVE system, the well produced approximately 4.0 to 4.2 m³/min (140 to 150 ft³/min) of vapor at a vacuum of 279.4 to 304.8 cm (110 to 120 in.) of water. The initial carbon tetrachloride vapor concentrations extracted from the well were 74 ppmv. This carbon tetrachloride concentration is within the range of concentrations (2 to 390 ppmv) measured during drilling through this interval. Carbon tetrachloride concentrations declined with continued extraction and were measured at 26 ppmv on August 2, 2006. The preliminary evaluation is that (1) the well is able to be used successfully for vapor extraction, and (2) the extracted concentrations are consistent with those observed during drilling.

2.1.2 Borehole Geophysical Logging

Borehole geophysical logging data were collected from select boreholes within and around the 216-Z-9 Trench. This included the new RI wells 299-W15-46 and 299-W15-48, and existing wells 299-W15-82, 299-W15-85, and 299-W15-218. Previous geophysical logs in several boreholes may have misidentified various radionuclides (e.g., Cs-137). The geophysical logging data is being re-evaluated in fiscal years 2006 and 2007, and a report is being prepared describing the nature of the observed contamination. Completion of final logs associated with the trench are being delayed pending resolution of analytical issues associated with the complex gamma energy spectra. The results of the borehole geophysical logging will be reviewed and incorporated into the contaminant distribution model for the trench presented in the FS.

Passive neutron logging was performed in the borehole to detect neutrons that may be generated by interactions of alpha particles with lighter elements such as iron, aluminum, sodium, magnesium, silicon, chlorine, and oxygen or from spontaneous fission. Where a transuranic radionuclide is in the form of a compound with one of these elements, the interaction most likely is because the distance that the alpha particle must travel is short. Many transuranic radionuclides decay predominantly by alpha particle emission, and the passive neutron system may be useful to identify the existence of these radionuclides where no gamma emissions are available for detection. No calibration is available for this logging system, and the data provided in Chapter 3.0 are to be used qualitatively.

2.1.3 Historical Contaminant Investigation

Figure 2-1 shows the location of wells around the 216-Z-9 Trench. Four borings were installed during 1954 (299-W15-8, 299-W15-82, 299-W15-84, and 299-W15-85) around the 216-Z-9 Trench and were used to monitor potential contamination spread from the structure during waste discharge operations. Additional drilling (e.g., new boreholes/well deepening) was performed in 1959 (wells 299-W15-6, 299-W15-9, 299-W15-86, and 299-W15-95), in 1966 (wells 299-W15-8, 299-W15-9, and 299-W15-86), and in 1967 (well 299-W15-101) to monitor for subsurface movement of disposed waste. The boreholes were monitored using scintillation surveys for detecting radioactive waste movement.

Additional borings were completed around the trench during 1992 (wells 299-W15-216 and 299-W15-217) and 1993 (wells 299-W15-218, 299-W15-219, 299-W15-220, and 299-W15-223). Borehole deepening was conducted in 2001 (wells 299-W15-84 and 299-W15-95). The boreholes drilled from 1992 to the present were sampled for soil, soil vapor, and/or groundwater during drilling. Drilling and sampling to investigate DNAPL occurrence was conducted on the northeast corner of the 216-Z-9 Trench in 1995 at well 299-W15-32. No DNAPL was detected in this well (BHI-00431).

During disposal of wastes to the 216-Z-9 Trench, accountability records indicated that plutonium was discharged to the trench. After the 216-Z-9 Trench was taken out of service in June 1962, it was postulated that errors had occurred in the estimate of the mass of plutonium discharged to the trench, and that criticality was possible because of the mass of plutonium within the trench. To refine the estimates of the mass of plutonium discharged to the 216-Z-9 Trench, to evaluate plutonium distribution within the trench, and to further evaluate criticality concerns, soil samples

were collected from the trench in 1961, 1963, and 1973 (Figures 2-3a and b). The soil samples were analyzed for Pu-239 and Am-241.

Soil samples were collected from eight vertical soil borings advanced in 1961 and 1963 through 10 cm-diameter access points (Figure 2-3a, Nos. 5 to 12) in the trench roof. In 1973, 14 additional vertical samples and 11 angled samples were collected using a split-tube sampler through 20 cm access points (Figure 2-3b). Samples from Areas A, B, and C were collected at the same locations as the samples collected from Boreholes 6, 7, and 8 in 1961 and 1963. No soil-sample results are reported for Areas E and F (ARH-2915). The angled soil borings were advanced at angles ranging from 3.5 to 5 degrees from vertical. Additional sampling details are provided in ARH-2915, Appendix A.

The soil samples from 1973 were nondestructively analyzed for Pu-239 and Am-241 with lithium-drifted germanium detectors and using gamma energy analysis techniques. Soil samples from 1961 and 1963 were analyzed for plutonium.

The 216-Z-9 Trench was mined (under the concrete cover) with remote mechanical equipment between 1976 and 1978 because of the mass of plutonium estimated to reside within the 216-Z-9 Trench and because of criticality concerns. The upper 0.3 m (1 ft) of soil was removed from the floor of the trench. The mining operation removed an estimated 58 kg (128 lb) of plutonium. The mined soil was containerized in soil canisters. The canisters then were placed in 208.2 L (55-gal) steel drums. A total of 653 drums were filled. Based on data acquired during the mining operation, an estimated 48 kg (106 lb) of plutonium remains in the 216-Z-9 Trench (RHO-ST-21). The plutonium-contaminated sediment and sludge recovered during the mining operation was drummed and disposed of in trench T-01 of the 218-W-4C Burial Ground. The 216-Z-9 Trench's 6 m (21-ft)-deep excavation remains void of soil and contains only the mining equipment (DOE/RL-91-58, RHO-ST-21, ARH-2915).

2.2 216-Z-1A TILE FIELD REMEDIAL INVESTIGATION, 200-PW-1 OPERABLE UNIT

2.2.1 Sampling and Analysis of Characterization Boreholes

During the DQO process, the existing data at the 216-Z-1A Tile Field were determined to be sufficient to support selection of remedial alternatives, so no new characterization boreholes were required for the RI (CP-15371). During the planning for the cross-well seismic reflection investigation of the tile field, it was determined that a new vadose-zone borehole was needed in the northern part of the tile field to obtain coverage of this area. Borehole P57 (C4965) was drilled in February 2006 in the northern part of the tile field. No soil or soil-vapor samples were collected from this borehole, but the drill cuttings were field screened for radioactivity and organic vapors.

2.2.2 Borehole Geophysical Logging

Borehole geophysical logging data were collected from select boreholes within and around the 216-Z-1A Tile Field. This includes the following 16 wells and one borehole.

299-W18-7	299-W18-79	299-W18-159	299-W18-167
299-W18-9	299-W18-80	299-W18-164	299-W18-168
299-W18-12	299-W18-81	299-W18-165	299-W18-169
299-W18-77	299-W18-85	299-W18-166	299-W18-170
C4965 (P57)			

Previous geophysical logs in several boreholes may have misidentified various radionuclides (e.g., Cs-137). The geophysical logging data are being reevaluated in fiscal years 2006 and 2007, and a report is being prepared describing the nature of the observed contamination. Completion of final logs associated with the tile field are being delayed pending resolution of analytical issues associated with the complex gamma energy spectra. The results of the borehole geophysical logging will be reviewed and incorporated into the contaminant distribution model for the tile field presented in the FS.

2.2.3 Historical Contaminant Investigation

Figure 2-4 shows the location of wells around the 216-Z-1A Tile Field. Before 1973, 26 wells were installed in and around the 216-Z-1A Tile Field and were monitored using scintillation surveys for detecting radioactive waste movement. The primary purpose of the pre-1973 wells was to provide information on the subsurface migration of wastes disposed of in the tile field. Wells 299-W18-56 through 299-W18-68 initially were completed in 1949, shortly after tile field construction, and were located within the interiors of the 216-Z-1, 216-Z-2, and 216-Z-3 Cribs and 216-Z-1A Tile Field waste disposal sites. Before the restart of the 216-Z-1A Tile Field in 1964, wells 299-W18-6 and 299-W18-7 were completed on the west and east side of the tile field, respectively. Wells 299-W18-6 and 299-W18-7 were installed for the purposes of groundwater monitoring and scintillation (gross gamma) probe access. Five additional vadose-zone wells (299-W18-85 to 299-W18-89) were installed around the perimeter of the 216-Z-1A Tile Field in 1969 to serve as scintillation (gross gamma) probe access locations. Wells 299-W18-76 to 299-W18-81 were installed in 1967 to evaluate the potential buildup of waste disposed near the head of the crib (RHO-ST-17, *Distribution of Plutonium and Americium Beneath the 216-Z-1A Crib: A Status Report*).

In 1973, an investigation was initiated for the 216-Z-1A Tile Field to evaluate the distribution of plutonium and americium beneath the waste site. A total of 16 wells were completed from 1973 to 1979. Four of the wells (299-W18-149, 299-W18-150, 299-W18-159, and 299-W18-175) were located along the central distribution pipe for the tile field. Well 299-W18-170 initially was drilled to a depth of 9 m, where an obstruction was encountered that could not be penetrated by drilling equipment. Subsequently, Well 299-W18-175 was completed as a replacement location. The primary purpose of the wells located along the central distribution pipe was to evaluate impacts to the subsurface at locations where maximum waste discharge to the crib was

expected to have occurred. Nine wells (299-W18-158, 299-W18-163 to 299-W18-169, and 299-W18-172) were completed around the perimeter of the tile field, to evaluate the lateral extent of subsurface impacts. Following completion of the initial 13 wells and a review of the collected data, 3 additional wells (299-W18-171, 299-W18-173, and 299-W18-174) were completed to further evaluate the lateral extent of subsurface impacts.

Samples were collected from the 1973-1979 boreholes for physical property analysis, as well as analysis of plutonium and americium. The plutonium and americium samples were analyzed using lithium-drifted germanium Ge(Li), intrinsic germanium (IG), lithium-drifted silicon Si(Li), and/or alpha energy detectors (RHO-ST-17).

Additional borings were completed around the tile field during 1992 (wells 299-W18-246 on the west side and 299-W18-248 on the east side) and 1993 (well 299-W18-252 located west of the tile field). Well 299-W18-174 within the tile field was deepened in 1993 to further evaluate subsurface impacts from the tile field. The boreholes drilled in 1992-1993 were sampled for soil, soil vapor, and/or groundwater during drilling.

2.3 241-Z-361 SETTLING TANK REMEDIAL INVESTIGATION, 200-PW-1 OPERABLE UNIT

The 241-Z-361 Settling Tank is located north of the 216-Z-1A Tile Field (Figure 1-2). Characterization of the 241-Z-361 Settling Tank and its contents was conducted from 1999 to 2001 to resolve an unreviewed safety question related to existing tank conditions. The characterization was performed in two phases: Phase I focused on opening the tank, characterizing the headspace vapor, and conducting a video camera survey of the tank interior. Phase II focused on characterizing the sludge and additional sampling of the tank headspace vapor (DOE/RL-2001-01, Section 3.3.1.3). Phase I sampling activities were conducted in 1999 under the requirements of the 241-Z-361 Settling Tank vapor sampling and analysis plan (HNF-2867). In 1999 and 2001, Phase II activities were conducted in accordance with the tank sludge characterization sampling and analysis plan (HNF-4371). The purpose of the Phase II investigation was to provide data for determining the waste disposal pathways, if remediation were performed, and to provide data to support a second assessment of the potential for criticality. The details of which analytes exceed RCRA toxicity characteristics and underlying hazardous constituents are discussed in DOE/RL-2003-52, *Tank 241-Z-361 Engineering Evaluation/Cost Analysis*. The data from the tank characterization are summarized in Section 3.2.3 of this RI report; however, the comparison to RCRA waste disposition requirements is not discussed in this RI report.

HNF-4371 identifies the type, quantity, and quality of data needed to support characterization of the sludge remaining in the 241-Z-361 Settling Tank. The procedures described in HNF-4371 were based on the results of the HNF-4225, *241-Z-361 Sludge Characterization Data Quality Objectives*, process for the tank. Characterization data were required to evaluate the need for an early removal action and, as required, to determine the appropriate methods for (1) removal of the sludge from the 241-Z-361 Settling Tank, (2) stabilization and packaging of the sludge, and (3) sludge disposal (HNF-8735). Results of Phase I and II activities are presented in HNF-8735.

2.3.1 Sampling and Analysis of Tank Content

Phase I activities included opening of the 241-Z-361 Settling Tank in 1999. A high-efficiency particulate air (HEPA) filter was installed on a passive vent, which then was monitored for combustible vapors, and a tank-headspace vapor sample was collected and analyzed for VOCs. Volatile and semivolatile organics present in the tank included Freon³, chloroform, tetrachloroethylene, isobutane, methylcyclopentane, trichloroethylene, and carbon tetrachloride. Phase I also included an inspection of the inside of the tank using a video camera (HNF-8735).

Phase II activities included collection of two full-depth sludge core samples from the tank for detailed chemical analysis, and collection of tank headspace vapor samples during sludge sampling to evaluate the potential for release of volatile compounds by disturbance of the sludge. Down-hole nondestructive assay techniques were used in the existing aluminum dry wells in the 241-Z-361 Settling Tank to provide additional information on the distribution of radioisotopes in the sludge.

Helical piers were installed in 1999 to support an above-ground structure for sampling the tank. These piers extend beneath the depth of the tank bottom, and some are within a few feet of the tank, allowing monitoring of potential radiological contamination upon their removal (DOE/RL-2001-01, Section 3.3.1.3).

2.4 DISPERSED CARBON TETRACHLORIDE VADOSE-ZONE PLUME INVESTIGATION ACTIVITIES, 200-PW-1 OPERABLE UNIT

The investigation of the dispersed carbon tetrachloride vadose-zone plume was conducted in two steps. The study area for Step I of the investigation was the vadose zone overlying the highest concentration portion of the carbon tetrachloride groundwater plume. Step I was focused only on characterizing the shallow portion of the vadose zone. The study area for the Step II investigation included the vadose zone overlying the entire carbon tetrachloride groundwater plume. The Step II study also extends deeper in the vadose zone than the Step I investigation. Data collected in both Step I and Step II were augmented with existing data and data from other planned and ongoing characterization activities in the 200 West Area. Summaries of these studies are provided in Section 2.4.3.

The RI was conducted in accordance with the Step I and Step II SAPs and supplements found in Appendices C and D of the Work Plan (DOE/RL-2001-01) and DOE/RL-2004-78, *Work Plan for Integrated Approach for Carbon Tetrachloride Source Term Location in the 200 West Area of the Hanford Site*.

³ Freon is a trademark of E. I. du Pont de Nemours and Company, Wilmington, Delaware.

2.4.1 Step I Investigation Activities

The SAP for the Step I investigation was based on the systematic characterization of each of the seven potential release modes of carbon tetrachloride in the Step I study area. The correlation between potential release modes and elements of the Step I sampling design is provided in Table-2-2.

The perimeter of the study area for the Step I investigation is illustrated in Figure 2-5. The potential release modes within this area, but outside the PFP Protected Area, were characterized from May through September 2002. The sampling methodology and results are documented in CP-13514. The release modes inside the PFP Protected Area were characterized during fiscal year 2003 and are reported with the Step II investigations (see Section 2.4.2.5).

Soil-vapor sampling and analysis were used to explore the upper vadose zone within the Step I study area. The sampling was conducted at liquid-waste discharge pipelines, liquid-waste discharge sites, and solid-waste burial ground trenches (CP-13514). The vadose-zone sampling was conducted using either the GeoProbe⁴ or cone penetrometer (CPT) direct-push technology. Sampling was conducted through vent risers into the burial ground trenches. The analyses were conducted using a field-screening instrument, the Innova 1312 multi-gas analyzer⁵.

2.4.1.1 Liquid Waste Discharge Pipelines

Soil-vapor samples were collected along six liquid discharge pipelines to investigate potential leaks of carbon tetrachloride-bearing waste from the pipelines. The six pipelines conveyed waste to the 216-Z-7 Crib, 216-Z-9 Trench, 216-Z-12 Crib, 216-Z-18 Crib, 216-Z Ditches from the 234-5Z Building, and 216-Z Ditches from the 231-Z Building. Vapor sampling was eliminated along pipelines to the 216-Z-16 Crib, 216-Z-17 Trench, and 216-Z-21 Pond, because carbon tetrachloride vapor was not detected at the corresponding 216-Z-16 Crib, 216-Z-17 Trench, or 216-Z-21 Pond liquid-waste discharge sites (CP-13514; DOE/RL-2001-01, Appendix C).

Seventy-nine locations were investigated along liquid waste discharge pipelines using a GeoProbe system. The GeoProbe system was used to collect soil-vapor samples to a maximum depth of 7.6 m (25 ft) bgs. Some sampling locations along pipelines also served as sampling locations at liquid-waste sites. Samples at these "dual-purpose" locations were collected using the CPT. The investigation locations at the liquid waste discharge pipelines are shown in Figure 2-6.

2.4.1.2 Liquid-Waste and Heating, Ventilation, and Air Conditioning Condensate Discharge Sites

Soil-vapor samples were collected at nine liquid waste discharge sites and two heating, ventilation, and air conditioning (HVAC) condensate discharge sites to investigate the potential

⁴ GeoProbe is a registered trademark of GeoProbe Systems, Salinas, Kansas.

⁵ 1312 multi-gas analyzer is a trademark of Innova AirTech Instruments A/S, Ballerup, Denmark.

discharge of carbon tetrachloride-bearing waste to the soil column at those sites. The nine liquid waste discharge sites are the 216-T-19, 216-Z-7, 216-Z-12, 216-Z-16, and 216-Z-18 Cribs; 216-Z-1A Tile Field; 216-Z-8 French Drain; and 216-Z-9 and 216-Z-17 Trenches. The two HVAC condensate discharge sites are the 216-Z Ditch system (216-Z-1D, 216-Z-11, 216-Z-19 Ditches and 216-Z-20 Crib) and the 216-Z-21 Pond.

Twenty-six locations were investigated at the liquid-waste discharge sites using a CPT. The maximum depth achieved using the CPT was 21.3 m (70 ft). Temporary soil-vapor monitoring probes were installed at five locations for subsequent sampling to confirm the initial results. The investigation locations at the liquid waste and HVAC-condensate discharge sites are shown in Figure 2-6.

Soil-vapor samples also were collected from Borehole C3808, drilled at the distal end of the 216-Z Ditch system as part of the 200-CW-5 OU RI and analyzed for carbon tetrachloride in support of the 200-PW-1 OU dispersed carbon tetrachloride vadose-zone plume investigation. Carbon tetrachloride was not detected in any of the soil-vapor samples, which were collected throughout the vadose zone (CP-12134, *Borehole Summary Report for Borehole C3808 in the 216-Z-11 Ditch, 200-CW-5, U-Pond /Z-Ditches Cooling Water Operable Unit*).

Five temporary soil-vapor monitoring probes were installed at four liquid-waste discharge sites for subsequent sampling to confirm the initial results.

2.4.1.3 218-W-4C Burial Ground

Sampling in the 218-W-4C Burial Ground was conducted in three phases. During the first phase, vapor samples were collected from 27 vent risers that generally were aligned with the centers of the engineered trenches. During the second phase, the GeoProbe was used to collect samples at 12 locations in the vadose zone to a maximum depth of 7.6 m (25 ft) bgs. The 12 locations were selected based on the results of the vent-riser sampling. The GeoProbe was used initially to collect vapor samples at each of the 12 locations, so that the results could be used to focus deeper sampling using the CPT. During the third phase, the CPT was used to collect samples at 5 of the 12 locations sampled using the GeoProbe. Maximum sample depth using the CPT was based on the depth where refusal was encountered.

During the first phase of the investigation in May 2002, vapor samples were collected from vent risers inside engineered trenches at trench T-01, trench T-04, and trench T-07. Most of the samples were collected near the base of the trench, which typically is approximately 5 m (16 ft) below the engineered surface overlying the trench. Carbon tetrachloride was detected at all but one of the 27 vent risers sampled. Most of the detections were less than 10 ppmv, but a distinct "hot spot" of elevated carbon tetrachloride concentration (maximum of 1,760 ppmv) was detected at the east end of trench T-04. The investigation locations of the burial ground trenches are shown in Figure 2-7.

During the second phase in August 2002, the GeoProbe was used to collect soil-vapor samples from the vadose zone at two depth intervals, approximately 4.6 to 4.9 m and 7.3 to 7.6 m (15 to 16 ft and 24 to 25 ft) bgs, at 12 sites. At two locations, an additional sample was collected at depths where health and safety monitoring detected elevated concentrations.

During the third phase of this investigation in September 2002, the CPT was used to collect soil-vapor samples from the five sites where carbon tetrachloride was detected during sampling using the GeoProbe. Samples were collected at the elevation corresponding to the base of the nearest trench and at other depths selected to provide a vertical concentration profile.

Three temporary soil-vapor monitoring probes were installed at two of the CPT locations for subsequent sampling to confirm the initial results.

During October-December 2003, vapor samples were collected through 84 existing vent risers in trenches T-01, T-04, T-07, T-20, and T-29 in the 218-W-4C Burial Ground and analyzed for VOCs using field screening instruments. A vapor sample then was collected for laboratory analysis from the vent riser in each trench that had the highest carbon tetrachloride concentration, based on the field screening results. The sampling was conducted in accordance with DOE/RL-2003-48, *218-W-4C Burial Ground Sampling and Analysis Plan*, which was developed to determine whether contaminants have been released to the vadose zone from retrievably stored waste⁶ in the 218-W-4C Burial Ground in support of Tri-Party Agreement milestone M-91-40 (Ecology et al., 1989, as amended). The sampling methodology was similar to that used to sample the vent risers in the 218-W-4C Burial Ground during Step I of the carbon tetrachloride vadose-zone investigation.

The samples collected in 2003 were analyzed for the following eight VOCs using a gas chromatograph: carbon tetrachloride, chloroform, methylene chloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1-dichloroethane, trichloroethylene, and tetrachloroethylene. For each of these eight VOCs, the highest concentration was detected at the east end of trench T-04, which is consistent with the results of the Step I investigation (CP-13514). The highest concentration of carbon tetrachloride detected was 668 ppmv. However, the field screening results indicated that the concentrations of 1,1,1-trichloroethane and tetrachloroethylene exceeded the concentration of carbon tetrachloride. The laboratory analysis of vapor samples from trench T-04 detected 14,000 ppmv of tetrachloroethylene and 320 ppmv of 1-butanol. Because of the high dilution required to quantify the tetrachloroethylene in this sample, concentrations for the other analytes present could not be quantified.

2.4.2 Step II Investigation Activities

During the DQO process for the Step II investigation, two approaches were used to identify additional characterization activities. In one approach, the Step I investigation results and additional information were used to identify known or potential carbon tetrachloride release sites that needed to be characterized. Release sites are near-surface engineered facilities (or unplanned releases) that have the potential to release carbon tetrachloride to the vadose zone. In the other approach, areas of elevated concentrations in the groundwater plume were identified that may indicate the locations of carbon tetrachloride sources in the deep vadose zone that are contributing mass to the groundwater and that should be characterized. The purpose of the Step II investigation was to detect carbon tetrachloride accumulations in the vadose zone that are

⁴ Retrievably stored for purposes of the *Atomic Energy Act of 1954*.

impacting or may impact groundwater in the future. The scope of the investigation also was broadened to include additional suspected carbon tetrachloride release sites and sources that are both within and beyond the Step I study boundaries. The study area for the Step II investigation includes the intermediate and deep vadose zone overlying the entire carbon tetrachloride groundwater plume (Figure 2-8).

Based on the Step I investigation results and evaluation of sites outside the Step I study area, the following known or potential carbon tetrachloride release sites were identified for further characterization in Step II during the DQO process (CP-15372):

- 216-Z-1A Tile Field
- 216-Z-9 Trench
- 216-Z-18 Crib
- 216-T-19 Crib
- 216-Z Ditch system (216-Z-1D, 216-Z-11, 216-Z-19 Ditches, and 216-Z-20 Crib)
- 216-Z-7 Crib
- 216-Z-12 Crib
- 216-Z-16 Crib
- 216-Z-17 Trench
- Trench T-04 in the 218-W-4C Burial Ground
- 216-S-25 Crib
- 218-W-3A Burial Ground.

Based on evaluation of elevated concentrations in the carbon tetrachloride groundwater plume that may indicate potential sources in the deep vadose zone, eight areas were identified for further characterization in Step II during the DQO process (CP-15372):

- Well 299-W10-20 adjacent to the 218-W-3A Burial Ground (Area 1)
- T Tank Farm (Area 2)
- T Plant (Area 3)
- Well 299-W11-10 east of T Plant (Area 4)
- Wells 299-W15-40 and 299-W10-5 near the 216-T-21 to 216-T-25 Trenches (Area 5)
- Well 299-W15-15 between the 218-W-4B and 218-W-4C Burial Grounds (Area 6)
- Well 299-W15-16 northeast of the 218-W-4C Burial Ground (Area 7)
- S-SX Tank Farm (Area 8).

The location of the eight areas of elevated concentrations in the carbon tetrachloride groundwater plume that were characterized in Step II is shown in Figure 2-9.

The Step II investigation sampling design is detailed in the Work Plan (DOE/RL-2001-01), Appendix D, Table D-8. That table is reproduced in this report as Table 2-3. Under the "Sample Collection Methodology" column, the boldface type has been added to help the reader locate the discussion of the specific investigation activities and the results of those investigations in this RI report.

2.4.2.1 Investigation of Vadose-Zone Plume Lateral Extent at the 216-Z-9 Trench, 216-Z-1A Tile Field, and 216-Z-18 Crib

This investigation was conducted in the vicinities of the primary carbon tetrachloride disposal sites to evaluate lateral migration beyond the waste site boundaries. As part of airflow modeling of SVE operations at the 216-Z-9 Trench, the applied vacuum in the Hanford formation sand was calculated to extend approximately 80 to 140 m (260 to 460 ft) beyond the trench boundaries for different configurations of on-line wells (BHI-00882, *Airflow Modeling Report for Vapor Extraction Operations at the 200-ZP-2 Operable Unit (Carbon Tetrachloride Expedited Response Action)*). Therefore, sampling at the 216-Z-9 Trench will continue to distances at least 225 m (750 ft) beyond the trench boundaries. The vertical sampling scheme is consistent with the Step I sampling (DOE/RL-2001-01, Appendix C). Sampling at the 216-Z-1A Tile Field and 216-Z-18 Crib used a similar strategy.

The investigation of the lateral extent of the dispersed carbon tetrachloride vadose-zone plume at the 216-Z-9 Trench, 216-Z-1A Tile Field, and 216-Z-18 Crib (the release sites) included passive soil-vapor surveys around the release sites and adjacent areas using an initial coarse grid-collector spacing of about 50 m (164 ft), followed by a refined grid-collector spacing of about 20 m (66 ft) to verify and refine the initial results.

Based on the results of the passive soil-vapor surveys, subsurface investigations were conducted at locations of elevated carbon tetrachloride soil vapor. The investigations used a 37-ton CPT to collect active soil gas and soil samples, and deploy FLUTE⁷ liners to investigate the presence of carbon tetrachloride DNAPL. Based on the results of the CPT sampling, a deeper soil-sampling investigation of the vadose zone down to the top of the CCU around the 216-Z-9 Trench was started in May 2006 using a hydraulic hammer rig (HHR, a direct-push soil-sampling system). This soil-sampling investigation will be followed by a similar investigation around the 216-Z-1A Tile Field and the 216-Z-18 Crib. The results of the HHR investigations will not be available for inclusion in this RI report and will be included in the FS.

The passive soil-vapor surveys deployed passive soil-gas collectors. All samples were collected following standard field procedures published by the vendor, Beacon Environmental Services, Inc. A summary of passive soil-vapor locations is shown in Table 2-4, and the details for each passive soil-vapor location are shown in Table 2-5. The field procedures routinely used during the passive soil-vapor surveys included the following steps.

1. Each sampler was deployed in the field by qualified technicians.
2. Each sampler was placed in the subsurface to a maximum depth of 10 cm (4 in.) below grade.
3. Samplers were deployed in prearranged survey patterns (e.g., coarse grid followed by refined grid spacing).

⁷ FLUTE is a trademark of Flexible Liner Underground Technologies, LLC, Santa Fe, New Mexico.

4. Soil was backfilled to seal and protect the samplers.
5. The sample point was flagged for identification and field-located with a Global Positioning System (GPS) unit.
6. The collector was left in place to adsorb compounds passively for a 72-hour minimum exposure period.
7. Then the collector was retrieved from the field and wiped clean with cloth.
8. The collector was sealed again to protect from contamination.
9. Samples were identified and recorded with other relevant information.
10. Samples then were shipped to the vendor's laboratory for VOC analysis.

The passive soil-gas collector consists of a glass vial containing hydrophobic adsorbent cartridges with a length of wire attached to the vial for retrieval. Hydrophobic cartridges can effectively adsorb contaminants in high-moisture conditions. Passive soil-vapor samplers are prepared with two cartridges for subsequent duplicate or confirmatory sample analysis. The duration of exposure for all samples was a minimum of three days following the vendor's field procedures.

Table 2-4 summarizes the specific areas investigated in each passive soil-vapor survey, the total samples collected, deployment dates, and the barometric pressure range during each survey. As shown, the barometric pressure did not fluctuate significantly during any of the surveys.

The results from the subsurface samplers were converted from nanograms of mass to average emission flux rates to assist in comparing results from the various investigations with previous investigations. The following formula was used:

$$F = W/A/T$$

where:

- F = average emission flux rate (ng/m²/min),
- W = contaminant mass (ng),
- A = area (m²) of sampler [3.14159(0.0045 m)²], and
- T = collection period (min).

The field locations of the passive soil-vapor survey points summarized in Table 2-4, along with the contoured emission flux-rate results from each survey, are shown in Figures 2-10 to 2-13.

The first CPT investigation was conducted from April 5 to May 20, 2005, using a 37-ton CPT truck, one of the heaviest CPT trucks available in North America (DOE/RL-2006-58). A total of 75 penetrometer tests were conducted at 18 locations near the 216-Z-9 Trench (Figure 2-14). (Note: Two of the locations shown on Figure 2-14 were investigated during the second CPT investigation described below.) Test measurements included tip stress, sleeve stress, pore pressure, soil resistivity, and collected depth-discrete active soil-vapor measurements every 1 m

(3 ft) of depth. Six CPT locations adjacent to the 216-Z-9 Trench were logged for total gamma to support management of radiological hazards. The depth of refusal for these tests ranged from 2.1 to 35.4 m (7 to 116.1 ft), with an average push depth of 15.4 m (50.4 ft).

Split-spoon soil samples also were collected from depth intervals of interest at each location, based on the active soil-vapor results and/or stratigraphy. Based on review of the collected data, two locations were tested with FLUTE DNAPL ribbon samplers as a direct test for carbon tetrachloride as DNAPL.

The active soil-vapor samples were collected by using a sampling pump to fill a Tedlar bag. The vapor samples were immediately analyzed in the field for carbon tetrachloride, chloroform, carbon dioxide, and water content using a B&K 1302 photoacoustic gas analyzer⁸. Active soil-vapor samples also were collected in the same manner at 10 m (33 ft) bgs, 20 m (66 ft) bgs and at refusal, and analyzed for comparative analysis using a different field screening instrument (e.g., a different B&K 1302 photoacoustic gas analyzer, a field gas chromatograph, or equivalent).

The soil samples were field screened with the B&K 1302 photoacoustic gas analyzer and then submitted to analytical laboratories for analysis of volatile and semivolatile organics, total organic carbon, pH, conductivity, soil moisture, plutonium, and americium.

The second CPT investigation was conducted from July 19 to August 18, 2005, using the same 37-ton CPT truck and test measurements that were used in the first investigation. A total of 73 penetrometer tests were conducted at 23 locations in an area incorporating the 216-Z-1A Tile Field, 216-Z-18 Crib, and 216-Z-12 Trench (Figure 2-15). (Note: Two of the locations included in this second CPT investigation are shown on Figure 2-14.) The depth of refusal for these tests ranged from 0.35 to 28.2 m (1.1 to 92.5 ft) with an average push depth of 16.1 m (52.8 ft).

The CPT locations and refusal depths for the 216-Z-9 Trench and the 216-Z-1A Tile Field are summarized in Tables 2-6 and 2-7, respectively, and the general push locations are summarized in Figures 2-14 and 2-15, respectively.

2.4.2.2 Investigation of Potential Accumulation Areas at the 216-Z-9 Trench, 216-Z-1A Tile Field, and 216-Z-18 Crib

This investigation was conducted near the 216-Z-9 Trench, 216-Z-1A Tile Field, and 216-Z-18 Crib waste sites to evaluate lateral migration beyond the waste site boundaries. The results were used to identify low points in the fine-grained layers in the vadose zone that could be source or DNAPL accumulation points. The CCU is the main fine-grained layer in the vadose zone present beneath the waste sites (see Section 3.1), which is why it was the main focus of the investigation.

This investigation had three main components.

⁸ 1302 photoacoustic gas analyzer is a trademark of Brüel and Kjær, S&V, Nærum, Denmark.

- Develop structure contour maps of the CCU in the area around the release sites to identify low points that could be accumulation areas for carbon tetrachloride as DNAPL.
- Collect soil-vapor samples above and within the CCU at low points to confirm potential DNAPL or source presence.
- Collect soil-vapor samples above and within the CCU at the locations northwest and southwest of the 216-Z-9 Trench, where an anomaly that could indicate DNAPL was identified in a 1999 seismic-reflection survey.

The methodologies used to complete these investigations are described below.

A variety of geologic cross sections and structure contour maps have been prepared over the years that have helped to depict the nature and subsurface geometry of the various geologic layers in the release site area (e.g., PNL-7866, *Characteristics of the Volatile Organic Compounds – Arid Integrated Demonstration Site*; WHC-SD-EN-TI-008, *Geologic Setting of the 200 West Area: An Update*; WHC-SD-EN-TI-248; PNNL-13858, *Revised Hydrogeology for the Suprabasalt Aquifer System, 200-West Area and Vicinity, Hanford Site, Washington*; PNNL-14895, *Three-Dimensional Modeling of DNAPL in the Subsurface of the 216-Z-9 Trench at the Hanford Site*). The level of detail and variations in interpretation in these reports are caused by a variety of factors including size of the area and study purpose, data sets used or available (e.g., boreholes drilled to date, lithologic logs, geophysical logs, physical property data), differences in picking geologic contacts (see WMP-22817, *Geologic Contacts Database for the 200 Areas of the Hanford Site*), differences in the level of detail on borehole logs, and use of different well elevations. The structure contour maps in PNNL-14895 provide the most current and detailed interpretation of the subsurface geometry of the major geologic units in the study area. However, a more refined characterization of fine-grained vadose-zone layers around the release sites was needed for this investigation.

High-resolution characterization of the subsurface geometry of the fine-grained vadose-zone layers around the release sites was obtained by using lithologic profiling from electric cone penetration test data from the CPT investigations (see Section 2.4.2.1), combined with cross-well seismic reflection profiling that is typically used in oil field reservoir investigations. The results of these investigations provided resolution of the subsurface layer geometries of about 0.6 m (2 ft).

The tip and sleeve stress data, which were obtained at 5 cm (2-in.) intervals over the full depth of each electric CPT push, and the calculated ratios of sleeve friction to tip resistance, were used to identify normalized soil-behavior type following Robertson, 1990, "Soil Classification Using the Cone Penetration Test." This produced highly detailed soil-behavior-type logs based on the soil engineering properties that were reviewed by a geologist to produce lithologic logs for each CPT location. The geologic review included selecting the deepest CPT push at each location and grouping similar soil-behavior types that were at least 15 cm (0.5 ft) thick into individual lithologic layers. This methodology produced highly detailed lithologic logs that identified fine-grained layers as thin as 15 cm (0.5 ft), significantly more detailed than the conventional driller's or geologist's borehole logs available for wells in the same area.

Twelve cross-well seismic-reflection survey profiles were collected from March 22-30, 2005, using existing wells around the 216-Z-9 Trench (Figure 2-16) (DOE/RL-2006-58). Because the source and receivers needed to be fluid coupled to transmit energy between the wells, removable FLUTE liners were deployed in the wells before they were filled with potable water. The piezoelectric seismic source swept with a frequency of 100 to 800 Hz, and reflections up to 400 to 500 Hz were obtained in the unconsolidated vadose-zone sediments. The longest inter-well distance was 81 m (267 ft), and logging depths were typically less than 61 m (200 ft).

Data processing resulted in tomographic velocity images from the first arrival picks. Reflection image processing included multichannel filtering to remove coherent noises such as tube waves, direct arrivals, and down-going reflections, as well as shear energy. After filtering the reflection, the data underwent deconvolution, imaging with the vertical seismic profile-common depth point (VSP-CDP) transform, and migration to produce a final migrated reflection image. An example of a final cross-well profile, which is a tomographic image overlain with the migrated high-frequency seismic reflection image, is shown in Figure 2-17.

The final cross-well profiles then were interpreted to map the subsurface geometry of specific vadose-zone layers (DOE/RL-2006-58). The well locations and elevations and the borehole geologic (lithologic) logs for the wells used in the cross-well survey were obtained from the *Hanford Well Information System* (HWIS) database. This information, together with stratigraphic contacts (e.g., WMP-22817) were used to position stratigraphic columns for each well next to the corresponding seismic profile to help guide and constrain the interpretation to the extent feasible.

The key vadose-zone layers for this project are the fine-grained layers within the Hanford formation and the CCU, because they are the most likely layers to influence the transport and accumulation of contaminants in the vadose zone. After careful review of the seismic profiles and the well stratigraphy, the reflectors corresponding to the following contacts were identified for interpretation and mapping on each profile: the top of the Ringold Formation, the top of the CCU, a reflector in the middle of the Hanford formation sand-dominated unit, and a reflector near the top of this unit. These layers are labeled, respectively, 'Ringold,' 'Cold Creek Uz,' 'Mid Hanford Sand,' and 'Near Top Hanford Sand' in the interpreted profile shown in Figure 2-18.

Stratigraphic boundaries and seismic reflection boundaries do not always correspond in detail. The seismic reflections are indicative of changes in velocity and density, which can occur with facies changes as well as changes in stratigraphy. So rather than a single boundary reflection between stratigraphic units, the seismic boundary may be a sequence of reflections from overlapping facies boundaries, which makes interpreting the location of the stratigraphic boundary somewhat subjective. This is the geophysical equivalent of the subjective differences in picking geologic contacts in Hanford Site wells (see WMP-22817) previously described.

After these layers were interpreted on each seismic profile, and the interpretations were checked for reasonably good depth ties to each other and the well stratigraphy at the profile intersections, the location and depth of each interpreted layer at every 20th trace were interpolated based on the known well coordinates and elevations. The resulting data then were gridded and used to

prepare two-dimensional subsurface topographic maps of each layer, which are shown in Figures 2-19 to 2-22.

As part of the geophysical interpretation of the cross-well profiles, an attempt was made to determine the lateral extent of a thin silt layer that was found from 19.8 to 20.4 m (65 to 67 ft) deep in well 299-W15-46, adjacent to the south side of the 216-Z-9 Trench (DOE/RL-2006-58). The importance of this silt layer, besides having the highest carbon tetrachloride soil concentration (380,000 $\mu\text{g}/\text{kg}$) and one of the highest carbon tetrachloride soil-vapor concentrations (8,560 ppmv) in the borehole, is that field tests on this silt layer were positive for carbon tetrachloride as a DNAPL (WMP-26264). This was the first time that positive evidence of carbon tetrachloride as DNAPL had been found at any location in the subsurface of the 200 West Area since the beginning of the carbon tetrachloride contamination investigation in the early 1990s.

Although a single 0.6 m (2-ft)-thick silt layer is considered to be below the limit of resolution of the seismic profile data, after careful review of the profiles, seismic reflection effects were found that are suggestive of thin layer pinchouts or lenses in the expected depth range of the silt layer in well 299-W15-46. Although the cross-well data cannot conclusively identify these reflection effects with a silt layer, the characteristic thin layer reflections were mapped in the 18 to 21 m (60 to 70-ft) depth range for subsequent confirmation of lithology by direct sampling in the HHR investigations. The interpretation is that there are two or more thin lenses, possibly overlapping, that are present within portions of the seismic profiles (DOE/RL-2006-58). The interpreted extent of the thin layer reflections is shown in Figure 2-23. This extent is approximately coincident with the lows observed in the contour map of the reflector in the middle of the Hanford formation sand-dominated unit (Figure 2-20), which would be expected if thin fine-grained layers were deposited in paleo-channels or ponds during the later stages of flood events typical of the Hanford formation sedimentation.

Eleven cross-well seismic reflection survey profiles were collected from February 27 to March 8, 2006, using existing wells and one newly installed well around the 216-Z-1A Tile Field (Figure 2-24) (DOE/RL-2006-58). To obtain seismic profiles through the northern part of the tile field, a new vadose-zone well (P57 on Figure 2-24) was drilled to 56.4 m (185 ft) depth from February 2-17, 2006, and a FLUTE liner was installed inside the 20 cm (8-in.) temporary casing. The well lining, data acquisition, and data processing steps were the same as those previously described for the cross-well seismic investigation at the 216-Z-9 Trench. The longest inter-well distance was 119 m (390 ft), and logging depths typically were less than 55 m (180 ft).

The final cross-well profiles were interpreted, and structure contour maps of specific vadose-zone layers beneath the 216-Z-1A Tile Field were developed, using the process previously described. The reflectors corresponding to the following contacts were identified for interpretation and mapping on each profile: the top of the Ringold Formation, the top of the CCU, the base of the Hanford formation sand dominated unit (e.g., the top of the Hanford formation gravel dominated unit [H3]), and near the top of this unit. These layers are labeled, respectively, 'Top of Ringold,' 'Cold Creek Uz,' 'Base Hanford Sand,' and 'Near Top Hanford Sand' in the interpreted profile shown in Figure 2-25. The two-dimensional subsurface topographic maps of these layers are shown in Figures 2-26 to 2-29.

The resulting detailed geometry of the subsurface vadose-zone layers interpreted from the cross-well seismic reflection profiles were used to identify target depths for intrusive soil sampling as part of the HHR soil-sampling investigations around the release sites. The results of the HHR investigations will not be available for inclusion in this RI report and will be included in the FS.

Key existing wells around the release sites were geophysically logged in fiscal year 2006. This geophysical logging will be evaluated when available and will be used to refine the interpretation of potential DNAPL accumulation areas, as needed, in the FS.

In 1999, a seismic-reflection survey was conducted along four lines around the 216-Z-9 Trench (Waddell et al., 2003). This study suggested that amplitude-versus-offset technology could be used to directly detect the presence of subsurface carbon tetrachloride DNAPL. The study identified several seismic anomalies that could be attributed to possible carbon tetrachloride DNAPL near the top of the CCU silt unit and the top of the CCU caliche unit. These anomalies were found on line Z-9-2, an east-west line on the north side of the 216-Z-9 Trench that ran just north of well 299-W15-32, and on line Z-9-1, a NNW-SSE-trending line along the west side of the trench that ran through well 299-W15-217. These locations were investigated by passive soil-vapor locations 56, 59, 87, and 88 (Figure 2-10) and CPT locations P17, P20, and P24 (Figure 2-14). The results of these investigations are discussed in Section 3.2.4.1, but none of these locations had soil-vapor concentrations greater than 5 ppmv.

2.4.2.3 Investigation Adjacent to the 216-T-19 Crib, 216-Z Ditches, 216-Z-7 Crib, 216-Z-12 Crib, 216-Z-16 Crib, and 216-Z-17 Trench

Data collected at these release sites during Step I did not extend through the upper vadose zone, so the focus of the Step II investigation was to collect samples from the deep vadose zone. The sampling design indicated that, if possible, soil and soil-vapor sampling conducted during the borehole drilling planned for the 216-Z-7 Crib as part of the 200-LW-2 OU RI (DOE/RL-2001-66, *Chemical Laboratory Waste Group Operable Units RI/FS Work Plan, Includes: 200-LW-1 and 200-LW-2 Operable Units*) may be used to collect soil-vapor and soil sampling data at that site instead of the direct-push technology methods specified in the Step II sampling design.

The investigation adjacent to the 216-T-19 Crib, 216-Z Ditches, 216-Z-7 Crib, 216-Z-12 Crib, 216-Z-16 Crib, and 216-Z-17 Trench was completed using both direct-push technologies (Enhanced Access Penetration System [EAPS] and CPT) and borehole drilling.

The EAPS was used to collect soil-vapor samples from the shallow and deep vadose zone in six borings adjacent to the 216-Z-16 Crib, 216-Z-17 Trench, and the 216-S-25 Crib (Figure 2-30). The 216-S-25 Crib borings are discussed in Section 2.4.2.6.

The EAPS combines direct push CPT and air-rotary-drilling methodologies into an integrated system. The principal differentiator in EAPS deployments is the drilling system used. Two drilling systems are available: 7.25 cm (2.875 in.) and 5 cm (2 in.). The 7.25 cm (2.875-in.) drill is the more powerful of the two and is recommended in situations where very hard materials are encountered. A typical scenario for the 7.25 cm (2.875-in.) drill system is to drill through shallow, upper refusing layers to expose softer, deeper layers that can be further penetrated by direct-push CPT. In this scenario, the center rods of the drill string are removed and 4.45 cm

(1.75-in.) CPT rods and tools are advanced through the outer drill casing. The 5 cm (2-in.) drill system is an interchangeable direct-push and drilling system that can accomplish a penetration consisting of both direct-push and drilling methods. This system allows the changeover between penetration methods to be made at any point in the penetration and as many times as required (D&D-30838).

Soil-vapor samples were collected under two sampling regimes. The first and simplest was collection of soil vapor through a soil-vapor sampling cone that had been advanced to the target depth by direct push. In this case, samples were taken without any delay period, because the formation was regarded as undisturbed. The vapor samples were transported to the surface through Teflon lines pumped by a small bladder pump. Samples were collected in 1 L Tedlar bags.

The second regime was related to soil-vapor conditions after EAPS air-rotary-drilling activities. It is recognized that the natural soil-gas concentration of any analyte will be perturbed because of permeation of air into a formation, which is inevitable during air rotary drilling. For this project, a period of 12 hours was adopted for the formation to recover after drilling, based on modeling performed during EAPS development. After this rebound period, soil-vapor samples were collected through the soil-vapor sampling cone as the EAPS outer drill casing was retracted. The borehole was filled with grouting material just below the desired sampling depth and then the sample was taken.

Details concerning the drilling, pushing, and sampling of four of the EAPS boreholes are discussed below and are documented in D&D-30838.

216-Z-16 Crib – Borehole C4884 was located on the east side center of the 216-Z-16 Crib, 1.5 m (5 ft) from the edge. The CPT was pushed and soil-vapor samples were collected at 4.6, 7.6, and 15.2 m (15, 25, and 50 ft) bgs before refusal at 19.8 m (65 ft). The 7.25 cm (2.875-in.) EAPS was used to drill down to the desired depth of 46.1 m (151.3 ft), so that soil-vapor samples could be collected at 45.7 and 38.1 m (150 and 125 ft). At 30.4 m (100 ft), the outer drill casing broke before a soil-vapor sample could be collected, so the borehole was redrilled to that depth, and soil-vapor samples were subsequently collected at 30.4 and 22.9 m (100 and 75 ft) before the borehole was decommissioned.

Borehole C4883 was located on the north side center of the 216-Z-16 Crib, 1.5 m (5 ft) from the edge. The vapor sampling cone was used to take samples at 4.6, 7.6, and 12.5 m (15, 25, and 41 ft) bgs before refusal. The hole was then drilled with the 7.25 cm (2.875-in.) EAPS to 45.7 m (150 ft) and left overnight before collecting the soil-vapor sample at that depth. Subsequent soil-vapor samples were then collected at 38.1, 30.4, 22.9, and 15.2 m (125, 100, 75, and 50 ft) before the borehole was decommissioned.

216-Z-17 Trench – Borehole C4885 was located on the west side center of the 216-Z-17 Trench, 1.5 m (5 ft) from the edge. The 5 cm (2-in.) drill system was used to push to 16.3 m (53.5 ft) and collect soil-vapor samples at 4.6, 7.6, and 15.2 m (15, 25, and 50 ft) bgs. The borehole then was drilled to 20.6 m (67.5 ft) using the 7.25 cm (2.875-in.) EAPS. The 4.45 cm (1.75-in.) CPT cone then was direct pushed to 36.9 m (121 ft). The 4.4 cm (1.75-in.) gas sampling cone then was deployed but immediately meet refusal at 37.5 m (123 ft), so the 7.25 cm (2.875-in.) EAPS was

used to drill to the desired depth of 45.7 m (150 ft), and the hole was left overnight. Soil-vapor samples were collected at 45.7, 38.1, 30.4, and 22.9 m (150, 125, 100, and 75 ft) bgs before the borehole was decommissioned.

Borehole C4886 was located on the west side south of the 216-Z-17 Trench. The CPT vapor sampling cone was used to collect soil-vapor samples at 4.6, 7.6, 15.2, and 22.9 m (15, 25, 50, and 75 ft) bgs before refusal at 30.4 m (100 ft). The 7.25 cm (2.875-in.) EAPS was used to drill to the desired depth of 45.7 m (150 ft), and the hole was left overnight. Soil-vapor samples were collected at 45.7, 38.1, and 30.4 m (150, 125, and 100 ft) bgs before the borehole was decommissioned.

216-T-19 Crib – Three EAPS boreholes were planned to be located adjacent to the 216-T-19 Crib. However, because significant radioactive contamination was expected at this location within 18.3 m (60 ft) of the ground surface, the EAPS air-rotary-drilling system had the potential to bring contaminated cuttings to the surface. The EAPS air-rotary-drilling system was not configured to work in a radiological environment. The air-rotary-drilling system had the potential to contaminate the drilling equipment and the interior of the support truck. The practical experience gained with the EAPS system indicated that the direct-push system was unlikely to reach the desired depths by itself. In addition, the maximum shallow soil-vapor carbon tetrachloride concentration during Step I sampling at the 216-T-19 Crib was 1.5 ppmv, and the passive soil-vapor survey indicated relatively low carbon tetrachloride results. The EPA concurred that the investigation at the 216-T-19 Crib was not required, so no further investigation at this site was conducted.

216-Z Ditches and 216-Z-12 Crib – The 216-Z Ditches and 216-Z-12 Crib were investigated during the CPT investigation that was discussed in Section 2.4.2.1. Two pushes at location P41 at the head end of the 216-Z Ditches (Figure 2-15) met refusal at 13.25 and 13.65 m (Table 2-7). One push at location P47 on the east side of the 216-Z-12 Crib (Figure 2-16) met refusal at 0.35 m, and two pushes at location P48 at the north end of the crib met refusal at 22.87 and 23.2 m (Table 2-7).

216-Z-7 Crib – Borehole C4183 was drilled and sampled through the 216-Z-7 Crib from the ground surface to the water table at 68 m (225 ft) as part of the investigation of this crib as a representative waste site of the 200-LW-2 OU (D&D-25461, *200-LW-1 and 200-LW-2 Operable Units - Borehole Summary for Boreholes in the 216-S-20, 216-T-28, and 216-Z-7 Cribs*, and DOE/RL-2005-61, *Remedial Investigation Report for the 200-LW-1 (300 Area Chemical Laboratory Waste Group) and 200-LW-2 (200 Area Chemical Laboratory Waste Group) Operable Units*). During the drilling, in situ soil-vapor samples were collected and analyzed in support of the 200-PW-1 OU RI. The soil-vapor samples were screened for volatile organics using hand-held organic vapor analyzers. The in situ soil-vapor samples were collected using the method described in Section 2.1.1.1 at borehole depths of 23 to 23.2 m, 29.4 to 29.6 m, 35.8 to 36 m, 45.5 to 45.7 m, 51.8 to 53.2 m, 59.4 to 60.5 m, and 66.8 to 67.7 m (75.5 to 76 ft, 96.5 to 97 ft, 117.5 to 118 ft, 149.4 to 150 ft, 170 to 174.5 ft, 195 to 198.5 ft, and 219 to 222 ft) (D&D-25461). The results are discussed in Section 3.2.4.3.

2.4.2.4 Activities at Trench 4 in the 218-W-4C Burial Ground

After the Step I investigation at trench T-04 in the 218-W-4C Burial Ground in 2002 detected elevated concentrations of carbon tetrachloride in the east end of the trench (see Section 2.4.1), and the 2003 vent-riser sampling in support of transuranic retrieval, an SVE system was operated at this trench from November 2003 through April 2004. The SVE system was operated to remove carbon tetrachloride from the burial ground trench to minimize release to the environment. Approximately 11 kg of carbon tetrachloride were removed from trench T-04 in the 218-W-4C Burial Ground during fiscal year 2004. The SVE system then was permanently removed to allow retrieval operations to remove the bulk of the soil overburden covering the drums at the east end of Trench T-04 (WMP-26178, *Performance Evaluation Report for Soil Vapor Extraction Operations at the 200-PW-1 Carbon Tetrachloride Site, Fiscal Year 2004*).

Soil-vapor sampling of the vadose zone was planned to be conducted at Trench T-04 during the Step II investigation (Table 2-3). However, the EPA concurred that the existing data were sufficient and that additional sampling was not required, so no further investigation at this site was conducted.

2.4.2.5 Investigation in the Plutonium Finishing Plant Protected Area

The sampling design in the Step I SAP specified shallow soil-vapor sampling (to a depth of 1.5 m [5 ft]) within the PFP Protected Area. A systematic grid was to be used to identify the sampling locations, in accordance with the requirements of the SAP. The results of the shallow, grid-based sampling were to be used to guide selection of locations for deeper soil-vapor sampling using a direct-push technology. However, during the subsequent detailed planning, safety concerns were raised that necessitated using a different sampling strategy. A supplement to the SAP was prepared to formally communicate the revised strategy for the vadose-zone sampling within the PFP Protected Area and to obtain the concurrence of RL and the EPA. The supplement to the SAP was approved by the 200-PW-1 OU managers in December 2002 and is included in Appendix C of the Work Plan (DOE/RL-2001-01).

As part of the revised sampling design, professional judgment was used, rather than shallow sampling on a grid spacing, to focus the deeper sampling. The Guzzler Vacuum Extraction System⁹ (Guzzler) was used through the upper zone (to a minimum depth of 0.9 m [3 ft]) to clear the subsurface for the use of a direct-push technology for sampling. At a minimum, all of the locations selected in the revised strategy were investigated as described in the initial sampling design for focused, deeper sampling using a direct-push technology.

The 17 200-PW-1 OU sampling locations in the PFP Protected Area are shown on Figure 2-31. The rationale for selection of these locations, in order of priority, is provided in Table 2-8. Two locations (C4059 and C4060) are listed twice in Table 2-8 because each had two sampling rationales.

⁹ Guzzler is a trademark of Guzzler Manufacturing, Inc. (a subsidiary of Federal Signal Corporation), Streator, Illinois.

The primary objective of the Step I sampling was to characterize the dispersed plume in the upper 38.1 m (125 ft) of the vadose zone (i.e., above the CCU) in the immediate vicinity of the PFP. The sampling design for focused, deeper sampling using a direct-push technology specified sampling vapors at 4.6 and 7.6 m (15 and 25 ft) bgs, if possible, to indicate the vertical trend. At each location, vapor samples were collected at 7.6 m (25-ft) increments below the 7.6 m (25-ft) depth and at the final depth when the GeoProbe was unable to advance deeper (i.e., refusal).

The 17 sample locations were identified in the PFP Protected Area and marked in the field in 2002. The excavation permit process was initiated, location surveys were performed, and ground penetrating radar was performed at each site to determine any underground hazards. Based on concerns about potentially encountering subsurface hazards not identified by the ground-penetrating radar, a regulated guzzler was used to remove approximately 2.4 m (8 ft) of soil at each sampling location. The soil then was returned to the ground, and the GeoProbe was used for subsurface access for sampling.

Guzzler operations began on July 23, 2003, and were completed on July 28, 2003. The Guzzler, which is basically a large vacuum machine, was able to remove soil using a hose with a rigid attachment. The outside diameter of the hose attachment was about 20.3 cm (8 in.) in diameter, but a hole several times larger in diameter usually would result, because soil/aggregate at the top of the hole typically slid to the bottom. At sites with asphalt at the ground surface, the GeoProbe unit was used to break-up the asphalt to allow the Guzzler to be used. All sites were backfilled with the material removed from the holes.

GeoProbe operations began on August 18, 2003, and were completed on August 28, 2003. The total depth and sampling intervals of each borehole are provided in Table 2-9. The GeoProbe system uses 4.45 cm (1.75-in.) outside diameter and 2.5 cm (1.0-in.) inside diameter carbon steel probe rods to provide access to the subsurface to obtain soil-vapor samples. This direct-push system provided a method to obtain soil-vapor samples at various depths without the radiological exposure to workers or the generation of waste associated with normal borehole drilling.

In general, the GeoProbe system was used to collect soil-vapor samples from three intervals at each location. Soil-probe rods were pushed as deep as possible (i.e., to refusal) to obtain vapor samples. The maximum depth penetrated below ground surface was 14.5 m (47.5 ft).

After they reached the refusal depth, the rods were pulled back approximately 0.3 m (1 ft) to allow an expendable probe point to fall out and create an uncased borehole for soil-vapor sampling. The depth to the bottom of the borehole was verified using a measuring tape. A 15.2 cm (6-in.)-long stainless steel screen attached to fluorinated ethylene propylene-lined TYGON tubing was lowered to the bottom of the borehole to obtain the soil-vapor sample. The probe-rod annulus typically was sealed with a fitted rubber stopper to ensure that the sample was being collected from the bottom of the borehole. The photoionization detector was used as a pump to purge the tubing and atmospheric air within the GeoProbe rod. After purging, the soil vapor was collected in a 1 L Tedlar bag for analysis. The samples then were analyzed within the 6-hour holding time using an Innova 1312 multi-gas analyzer.

After the soil-vapor sample was collected, the screen and tubing were removed from the borehole. Granular bentonite was added to the borehole to decommission the lower portion while the probe rods were retrieved. Bentonite was placed to approximately 7.6 m (25 ft) bgs. A soil-vapor sample was collected above this bentonite plug in the same manner as the first soil-vapor sample. The borehole again was partially decommissioned with granular bentonite to the next sample interval, approximately 4.6 m (15 ft) bgs. After the final sample was collected, the borehole was decommissioned by filling it with granular bentonite to the ground surface. The maximum target depth of 38.1 m (125 ft) was not reached by any of the pushes. The maximum depth penetrated below ground surface was 14.5 m (47.5 ft), and the minimum depth was 8.7 m (28.5 ft).

2.4.2.6 Investigation Adjacent to the 216-S-25 Crib

This potential release site was not investigated during Step I, because it is located outside of the Step I study area. The Step II sampling design included collection of soil vapor from the shallow and deep vadose zone adjacent to the 216-S-25 Crib.

The EAPS was used to collect soil-vapor samples from the shallow and deep vadose zone and one groundwater sample in two borings adjacent to the 216-S-25 Crib (Figure 2-30). The EAPS operation and sampling methodology were discussed in Section 2.4.2.3. Details concerning the drilling, pushing, and sampling of the two EAPS boreholes used to investigate this site are discussed below and are documented in D&D-30838.

Borehole C4890 was located on the south side center of the 216-S-25 Crib, 0.9 m (3 ft) from the edge of the crib. A CPT probe with a gas-sampling port was initially pushed to 17.3 m (56.8 ft), and soil-vapor samples were collected at 4.6, 7.6, and 15.2 m (15, 25, and 50 ft). The 7.25 cm (2.875-in.) EAPS was used to drill to the desired depth of 68.3 m (224 ft) on July 7, 2005. On July 11, 2005, the water level in the boring was measured at 65.8 m (216 ft). A bladder pump was lowered through the drill casing into the groundwater, and the groundwater was pumped to the surface and collected in sample containers. This groundwater sample (*Hanford Environmental Information System* [HEIS] number B1DFF8) subsequently was analyzed for VOCs.

On July 12, 2005, a soil-vapor sample was collected at 65.5 m (215 ft), 0.3 m (1 ft) above the water table. Six samples were taken at 7.6 m (25-ft) intervals from 61 m (200 ft) up to 22.8 m (75 ft). As each sampling depth was completed, the boring was filled with bentonite to the elevation of the next sample. Upon completion of the soil-vapor sampling, the hole was decommissioned.

Borehole C4891 was located on the east side center of the 216-S-25 Crib, 1.2 m (4 ft) from the edge of the crib. The vapor sampler was advanced to 10.2 m (33.5 ft) by direct push, and soil-vapor samples were collected at 4.6 and 7.6 m (15 and 25 ft). The 5 cm (2-in.) EAPS drill then was used to 15.2 m (50 ft), where a soil-vapor sample was collected. This sample was collected before the prescribed 12-hour rebound time had elapsed. Drilling then resumed to 17.7 m (58 ft) before mechanical issues with the EAPS forced the work to stop. The cone was subsequently re-pushed to refusal at 17.7 m (58 ft). The 5 cm (2-in.) EAPS drill was used to drill from 17.7 to 21.6 m (58 to 71 ft). Investigation of mechanical problems during a direct push to the 22.8 m

(75-ft) sampling interval found that the outer drill bit had detached and plugged the boring. Subsequent drill bit and mechanical problems resulted in two more borings, located 1.5 m (5 ft) away from the original boring, which were decommissioned after they reached 3.2 and 21.3 m (10.7 and 70 ft), respectively.

On July 20, 2005, the rig was moved another 1.5 m (5 ft) from the original location, and the 4.44 cm (1.75-in.) vapor-sampling probe was pushed to 22.8 m (75 ft) to collect the first soil-vapor sample, before encountering refusal at 27 m (88.5 ft). The 7.25 cm (2.875-in.) EAPS drill was used to drill the boring to 32.6 m (107 ft). The boring then was continued in direct-push mode with a 4.45 cm (1.75-in.) cone to the target depth of 45.7 m (150 ft) and was left overnight before soil-vapor sampling began. Soil-vapor samples were collected at depths of 45.7, 38.1, and 30.5 m (150, 125, and 100 ft) before the borehole was decommissioned.

2.4.2.7 Investigation at the 218-W-3A Burial Ground

The 218-W-3A Burial Ground was a suspect release site located adjacent to one of the groundwater "hot spots". The Step II sampling design at this site included both passive and active vapor sampling methods to investigate trench locations that may have received volatile organic wastes.

The investigation of the 218-W-3A Burial Ground included a passive soil-vapor survey of two trenches and vapor sampling of vent risers in engineered trenches within the burial ground. The passive soil-vapor survey deployed passive soil-vapor collectors using the methodology described in Section 2.4.2.1. Collectors were placed at 12 locations along trench T-06 and at 10 locations along trench T-9S from June 30 to July 5, 2005, as summarized in Table 2-10. After retrieval, the collectors were sent to the vendor's laboratory for analysis of VOCs.

Vapor samples from the 17 vent risers present in portions of trenches T-9S, T-3S, T-05, and T-08 were collected and analyzed using field-screening instruments (Figure 2-32). All of the vent risers in trenches T-9S (1 riser), T-3S (3 risers), and T-05 (6 risers) were sampled on August 25, 2005, and all of the vent risers in trench T-08 (7 risers) were sampled on September 6, 2005. A sample location number (trench and riser) was established and recorded for each vent riser. The vent risers in each trench were numbered sequentially from west to east.

After removing the vent riser cap, a 15.2 m (50-ft)-long piece of TYGON tubing was lowered to the bottom of the riser or until refusal. The tubing measured 0.64 cm (0.25-in.) inside diameter and 0.95 cm (0.375-in.) outside diameter, with a metal filter on the lower end. The tubing was marked at 0.3 m (1-ft) intervals so that depth from the top of the riser to the bottom could be measured. The depth-to-bottom from the top of the riser typically was 5.8 to 6.4 m (19 to 21 ft). The tubing then was pulled back approximately 0.08 m (0.25-ft) to lift the filter off the bottom of the trench. The top of the riser was sealed to prevent intrusion of ambient air during purging and sampling.

The sample tubing was connected to a sampling pump, which was used to pump vapor from the bottom of the vent riser. The sampling pump was operated for 1 to 2 minutes to purge the tubing (purging time was dependent on the sampling-pump flow rate). When the sampling pump was operating, the VOC concentrations at the outlet of the pump were monitored using an organic vapor analyzer (OVA). When the VOC concentration readings on the OVA stabilized after

purging, or at the discretion of the industrial hygienist and field sampler, the vapor was introduced directly to a MIRAN SapphIRE Ambient Air Analyzer¹⁰ for field-screening analysis of VOCs. Following sample analysis, the sample tubing was removed from the riser and the cap was replaced.

The results of these investigations are discussed in Section 3.2.4.6, but because none of the sample locations had significant soil-vapor concentrations of carbon tetrachloride that would warrant a vadose-zone investigation, no further investigations were conducted at the 218-W-3A Burial Ground for this RI.

2.4.2.8 Investigation of Groundwater “Hot Spots”

Eight carbon tetrachloride groundwater “hot spots” that have had persistent carbon tetrachloride concentrations were investigated in the Step II investigation. The existence and persistence of these “hot spots” are indicative of a continuing source at these locations. By “looking up” from the groundwater hot spots, the source of the contamination in the vadose zone may be identified.

The investigation of the eight groundwater “hot spot” areas shown on Figure 2-9 was conducted by collecting both soil-vapor and groundwater samples from existing wells in the vicinity of these “hot spots” and then comparing the sample results using Henry’s law for the equilibrium partitioning of carbon tetrachloride between the vapor and aqueous phases (DOE/RL-2001-01, Appendix D, p. D-21). The list of wells in Table D-10 of the Work Plan (DOE/RL-2001-01) was revised during the pre-job planning, and the wells that were sampled and their rationale for selection are listed in Table 2-11. The well locations are shown on Figure 2-33.

The groundwater samples were collected from 31 wells between June 22, 2005, and June 21, 2006, using microsampler bailers. Samples were collected from approximately the upper 5 cm (2 in.) of the aquifer below the static water surface. The use of the microsampler surface bailer limits the amount of agitation at the air-water interface. Therefore, the collected samples are expected to provide a better representation of carbon tetrachloride concentrations at the top of the aquifer. Sampling using the microsampler, which fills from the top, required at least 58 cm (23 in.) of water in the well. When a well provided insufficient water for sampling (i.e., less than 58 cm of water in the well), the well was sampled using an alternative sampling method. The only wells that did not yield sufficient water for sample collection with the microsampler bailers were wells 299-W11-14 and 299-W15-16. The groundwater sample from well 299-W11-14 was collected using a wide-mouth 250 mL bottle secured to the end of an electronic tape (e-tape). No water was measured in well 299-W15-16.

The microsampling device consisted of a 58 cm (23-in.) length of TYGON tubing attached to the bottom of an e-tape. The e-tape was used to provide an electronic signal to indicate when the water column in the well was encountered. The closed end (bottom) of the tubing was positioned next to the sensor of the e-tape, and the top of the tubing was open to allow water to

¹⁰ MIRAN and the SapphIRE Ambient Air Analyzer are registered trademarks of Thermo Electron Corporation, Franklin, Massachusetts.

flow into the tubing. The device was lowered into the well until the e-tape indicated contact with the water surface. The depth to static water level was recorded based on the e-tape response.

The micro-sampling device was then lowered and filled with water. The groundwater samples subsequently were transferred from the microsampling bailer to appropriate sample containers using a syringe or other method to minimize agitation and volatilization. If the groundwater in a well was recently disturbed (e.g., by groundwater sampling or maintenance), the groundwater system within the well was allowed at least seven days to return to equilibrium following the disturbance before it was sampled with the microsampler.

All of the groundwater samples were laboratory analyzed for VOCs using EPA Method 8260 (SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update III-A*, as amended), because the field gas chromatograph stopped functioning.

The soil-vapor samples were collected from 30 wells between June 22 and November 23, 2005, using a Teflon-lined TYGON tube attached to the e-tape approximately 10 cm (4 in.) above the top of the microsampling TYGON tubing. A pump was used to draw the vapor to the surface, where it was collected in Tedlar bags. The vapor samples were collected immediately above the water table or above the bottom of the well if the well was dry. Because no water was measured in well 299-W15-16, a vapor sample was collected from the lowermost 0.6 m (2 ft) of the screened or perforated interval in the vadose zone.

Soil-vapor samples were collected during soil venting periods (e.g., when the barometric pressure was falling), to collect representative results. If necessary, the borehole was sealed to prevent inflow of atmospheric air until falling atmospheric and venting conditions existed before sampling began. Sealing of the wells was accomplished by using a large plastic bag placed over the top of the casing and then taped closed. During times with rising barometric pressure, the bag would be drawn tight against the well casing, and during times of falling barometric pressure, the bag would be inflated.

Vapor samples were collected in Tedlar bags through probes and/or TYGON tubing from the surface to just above the water surface. The tubing was purged from the line by using a portable diaphragm pump. The purging time was based on the length of the tubing and the pumping rate. After one volume of air had been purged, the line was attached to the Tedlar bags and a sample was collected. Analysis of the soil vapor was performed using a B&K 1302 photoacoustic gas analyzer or other field screening instrument that could differentiate carbon tetrachloride from chloroform at the target-required quantitation limits (DOE/RL-2001-01, Table D-5).

To establish the carbon tetrachloride concentration gradient in the upper 3 m (10 ft) of the unconfined aquifer, depth-discrete groundwater samples were planned to be collected from one well in each groundwater hot spot area (DOE/RL-2004-78, Appendix A). The wells and sampling depths for the depth-discrete sampling are listed in Table 2-12. The depth-discrete groundwater samples were collected from all wells using the same equipment, except for well 299-W11-25B, where the water samples were collected by pumping after the borehole was drilled to 6, 12, 18, 24, 30, and 36 m (20, 40, 60, 80, 100, and 120 ft) below the water table (WMP-27725, *Borehole Summary Report for the Drilling and Construction of Four New Wells 299-W22-47, (C4667); 299-W11-25B, (C4669); 299-W14-11, (C4668); and 299-W11-46,*

(C4950) Drilled in the 200 West Area). A straddle packer system was used to isolate the well screen or perforated casing intervals (0.6 m [2-ft] interval in 10 and 15 cm [4 and 6-in.] wells and 0.9 m [3-ft] interval in 20 cm [8-in.] wells). Low-flow purging and sampling methods using a bladder pump were used to collect each groundwater sample. Purge rates typically ranged from 150 to 500 mL/min until field parameters were stable, and then the sample was collected. The depth-discrete groundwater samples were collected from the top to the bottom of the well to minimize disturbance of the water column. The groundwater samples then were laboratory analyzed for VOCs, using EPA Method 8260 (SW-846).

2.4.2.9 Investigation of Possible Release Sites/Sources

In addition to the specific Step II investigation tasks described in the previous sections, a variety of investigations have been conducted within the Step II study area that provide useful information on the nature and extent of the dispersed carbon tetrachloride vadose-zone plume and possible release sites/sources. These investigations are summarized in this section, and the results are discussed in Section 3.2.4.8.

Burial Grounds Soil-Vapor Survey – As part of the 200-SW-2 OU investigation, a passive soil-vapor survey was conducted in 2006 along selected trenches in five burial grounds within the 200 West Area (D&D-28283, *Sampling and Analysis Instruction for Non-Intrusive Characterization of Bin 3A and Bin 3B Waste Sites in the 200-SW-2 Operable Unit*) (Figures 2-7 and 2-32). The passive soil-vapor survey deployed passive soil-gas collectors using the methodology described in Section 2.4.2.1. The results of this investigation will be reviewed and reported in the FS.

T Plant Soil-Vapor Survey – A passive soil-vapor survey around T Plant was conducted using the passive soil-gas collectors and the methodology described in Section 2.4.2.1. The collectors were placed at 30 locations around the plant from May 26 to June 1, 2005, as summarized in Table 2-13 and Figures 3-21 and 3-22 in Chapter 3.0. After they had been retrieved, the collectors were sent to the vendor's laboratory for analysis of VOCs.

Fiscal Year 2001 to 2006 Well Drilling for Other Operable Units – Soil-vapor samples have been collected and analyzed for carbon tetrachloride in support of the 200-PW-1 OU RI in 12 wells that were drilled for the investigation of other OUs in the 200 West Area from fiscal year 2001 to 2005. The soil-vapor samples are summarized in Table 2-14. The locations of the wells are shown on Figure 2-34..

Six soil samples were collected during the drilling of Borehole C3102 in the 216-T-26 Crib and were analyzed for carbon tetrachloride in support of the 200-PW-1 OU RI (DOE/RL-2002-42, *Remedial Investigation Report for the 200-TW-1 and 200-TW-2 Operable Units (Includes the 200-PW-5 Operable Unit)*). The 216-T-26 Crib is located east of the TY Tank Farm in the 200 West Area. Borehole C3102 was drilled from June 24 through July 26, 2001, in support of the RI for the 200-TW-1 OU. The soil samples were collected from the following intervals: 6.7 to 7.5 m (22 to 24.5 ft) bgs, 20.5 to 21.3 m (67.3 to 69.8 ft) bgs; 28.0 to 28.8 m (92 to 94.5 ft) bgs, 45.0 to 45.3 m (147.5 to 148.5 ft) bgs, 60.2 to 60.6 m (197.5 to 198.8 ft) bgs, and 68.9 to 69.2 m (226 to 227 ft) bgs.

In fiscal year 2006, soil-vapor samples were collected during the drilling of six selected groundwater wells in locations of some of groundwater “hot spot” areas shown on Figure 2-33 or in areas where the groundwater has not been previously sampled. At each drilling location, soil-vapor samples are being collected approximately 1.5 m (5 ft) above the CCU, 1.5 m (5 ft) below the CCU, and just above the water table. One well (299-W10-25/299-W10-31) is in groundwater “hot spot” area 1, one well (299-W11-47) is in area 2, one well (299-W11-86) is in area 4, one well (299-W15-224) is in area 7, and two wells are in areas where the groundwater has not been previously sampled (299-W14-71, 299-W14-72) (Figure 2-34). The soil-vapor samples for wells 299-W11-47 and 299-W15-224 are included in Table 2-14 and discussed in Section 3.2.4.8. The results for wells 299-W10-25 (which was decommissioned and replaced by well 299-W10-31), 299-W11-86, 299-W14-71, and 299-W14-72 will be evaluated in the FS.

Enhanced Access Penetration System Demonstration 2003 – A field demonstration of the EAPS was conducted in the 200 West Area from September 26 to October 29, 2003, (Applied Research Associates, 2004, *Enhanced Access Penetration System (EAPS) Draft Final Technical Report*). During this period, six boreholes were pushed and drilled in a north-south corridor along the east side of the burial grounds, extending from the southwest corner of the PFP in the south to the northeast corner of the 218-W-3 Burial Ground in the north. Soil-vapor samples were collected in four of the six boreholes, as follows: C4241 (10 samples), C4242 (16 samples), C4243 (1 sample), and C4244 (2 samples). Locations of the EAPS boreholes are shown in Figure 2-30.

The soil-vapor samples were collected by continuously drawing vapors from the piezo-vapor cone, typically through 1/8-in. internal diameter (3/16-in. outside diameter) Teflon tubing. The samples were drawn to the surface by a 2.5 L/min diaphragm pump or similar device and passed through a sampling “tee” at the surface. One branch exited to the atmosphere through a granular activated carbon filter, while the other was connected to the inlet of a photoacoustic infrared analyzer in the CPT truck, where the sample was field screened for carbon tetrachloride.

Fiscal Year 1992 and 1993 Well Drilling Near Release Sites – In 1992 and 1993, as part of the 200 West Area Carbon Tetrachloride Expedited Response Action and the Volatile Organic Compounds – Arid Integrated Demonstration project, 11 wells were drilled and two existing wells were deepened around the 216-Z-9 Trench and 216-Z-1A Tile Field. The results of these investigations are reported in WHC-SD-EN-TI-063, *FY1992 Site Characterization Status Report and Data Package for Carbon Tetrachloride*; WHC-SD-EN-TI-202, *FY93 Site Characterization Status Report and Data Package for the Carbon Tetrachloride Site*; and BHI-00105, *FY 1993 Wellfield Enhancement Status Report and Data Package for the 200 West Area Carbon Tetrachloride Expedited Response Action*. In fiscal year 2005, the chemical constituent data for 12 of these wells was entered into HEIS. The radionuclide analytical results for these 13 wells were not entered at that time, because the data were not available in electronic format; the VOC analytical results for well 299-W15-223 (a slant well) were not entered at that time because of HEIS limitations in entering geospatially oriented samples (other than well location coordinates and vertical sample depths).

In fiscal year 1992, wells 299-W15-217, 299-W18-248, and 299-W18-249 were drilled to the CCU and completed as vadose-zone SVE wells. Soil-vapor and soil samples were collected from these wells for VOC, chemical, radiological, and/or physical property analysis.

In fiscal year 1992, wells 299-W15-216, 299-W18-246, and 299-W18-247 were drilled to 5 m below the water table and completed as vadose-zone SVE wells. Soil-vapor, soil, and groundwater samples were collected from these wells for VOC, chemical, radiological, and/or physical property analysis.

In fiscal year 1993, wells 299-W18-96 and 299-W18-174 were deepened, and new well 299-W15-223 was drilled at a 45-degree incline, to the CCU. All three wells were completed as vadose-zone SVE wells and were deepened/drilled to the CCU. Soil-vapor and soil samples were collected from these wells for VOC, chemical, radiological, and/or physical property analysis.

In fiscal year 1993, wells 299-W15-218, 299-W15-219, 299-W15-220, and 299-W18-252 were drilled to 5 m below the water table and completed as vadose-zone SVE wells. Soil-vapor, soil, and groundwater samples were collected from these wells for VOC, chemical, radiological, and/or physical property analysis.

Three of these wells, 299-W18-96, 299-W18-247, and 299-W18-249, are associated with the 216-Z-18 Crib, but they are included in this report to help understand the dispersed carbon tetrachloride vadose-zone plume in this area.

Fiscal Year 1991 Soil-Vapor Sampling – Soil-vapor monitoring points were installed from February 20 to 23, 1991. Twenty-two vapor-sampling points were constructed by driving stainless steel vapor-sampling probes to a depth of 1.2 to 1.5 m (4 to 5 ft). Then 3/16-in. Teflon tubing was installed in each point, extending from the vapor-probe depth to the ground surface. Locations of the 22 vapor sampling points are summarized in Table 2-15 and Figure 2-35.

Soil-vapor measurements were collected from the vapor sampling points on March 14, 1991, using an OVA equipped with an 11.7 eV lamp. The instrument was calibrated to a 100 ppm isobutylene standard before the vapor measurements were collected. For collecting the soil-vapor measurements, the OVA was connected to the tubing and vapor was pumped into the OVA for 1 to 2 minutes. The maximum parts-per-million reading was recorded during the 1- to 2-minute sampling period.

2.4.3 Non-Field Investigations

A variety of non-field investigations have been conducted on different aspects of the carbon tetrachloride contamination within the 200 West Area as part of the RI for the 200-PW-1 OU. The following subsections present summaries of some of the key study findings from these investigations.

2.4.3.1 Vadose-Zone Modeling

Fluor Hanford contracted with PNNL to improve the conceptual model for carbon tetrachloride distribution in the 200 West Area subsurface through numerical flow and transport modeling. The following summary is derived from PNNL-14895 and PNNL-15914, *Carbon Tetrachloride Flow and Transport in the Subsurface of the 216-Z-9 Trench at the Hanford Site: Heterogeneous Model Development and Soil Vapor Extraction Modeling*.

Three-dimensional fate and transport modeling was conducted to enhance the conceptual model of the vertical and lateral distribution of carbon tetrachloride beneath the 216-Z-9 Trench. Simulations targeted the migration of carbon tetrachloride and co-disposed DNAPL contaminants in the subsurface beneath the 216-Z-9 Trench. The DNAPL migration was simulated as a function of sediment stratigraphy and of the properties and distribution of disposed waste. The geological aspects of the computer model were extracted from a larger EarthVision¹¹ geologic model of the 200 West Area that was developed during fiscal year 2002.

PNNL simulated carbon tetrachloride migration using the STOMP multi-fluid flow and transport model (PNNL-12028, *STOMP Subsurface Transport Over Multiple Phases, Version 2.0, Application Guide*). A total of 23 three-dimensional simulations were conducted to examine carbon tetrachloride subsurface infiltration and redistribution before SVE remediation activities were implemented in 1993. The simulations consisted of one base case simulation and 22 sensitivity analysis simulations. The sensitivity simulations investigated the effects of eight variables on the movement and redistribution of DNAPL: (1) fluid composition; (2) disposal rate, area, and volume; (3) fluid retention; (4) permeability; (5) anisotropy; (6) sorption; (7) porosity; and (8) residual saturation. Additional simulations were conducted to investigate the effects of the SVE system.

The simulations indicated that substantial quantities of carbon tetrachloride accumulated in the CCU and that the CCU is the primary determinant of DNAPL movement and distribution in the vadose zone. The CCU is a relatively thin, laterally continuous unit comprising a silt layer and a cemented carbonaceous layer that is located approximately 40 m (131 ft) bgs and approximately 50 m (164 ft) above the water table. The simulations also showed that the lateral extent of the vapor-phase plume in the vadose zone was much more extensive than the lateral extent of the DNAPL. Vapor-phase carbon tetrachloride moved downward until it contacted either relatively impermeable units (e.g., the CCU) or the water table, and then moved laterally. The vapor plume also partitioned into the groundwater and onto the solid phase. The carbon tetrachloride in the CCU is expected to continue volatilizing and moving downward to relatively impermeable layers, where it could be removed through SVE or deeper to the water table. The simulations clearly demonstrate that "free-phase" carbon tetrachloride has not moved laterally from the footprint of the disposal facility. In most simulations, free-phase or dissolved carbon tetrachloride was predicted to enter the water table directly beneath the disposal area or through gaseous transport and subsequent partitioning into the aqueous phase over a widespread area.

In summary, the modeling results led to the following conclusions for updating the conceptual carbon tetrachloride distribution model.

- *Where is carbon tetrachloride expected to accumulate?* Free-phase carbon tetrachloride accumulates in the finer grained layers of the vadose zone but does not appear to pool on top of these layers.
- *Where are continuing liquid carbon tetrachloride sources of groundwater contamination suspected?* Free-phase carbon tetrachloride preferentially migrates vertically downward

¹¹ EarthVision is a registered trademark of Dynamic Graphics, Inc., Alameda, California.

below the disposal area. Lateral movement of free-phase carbon tetrachloride is not likely; however, significant lateral migration of vapor-phase carbon tetrachloride is expected.

- *Where would DNAPL contamination in groundwater be suspected?* Sufficient carbon tetrachloride and other liquid wastes were disposed of for free-phase carbon tetrachloride to migrate as a DNAPL through the CCU and, in some sensitivity cases, across the water table. For the base case simulation, 43 percent of the original free-phase inventory (i.e., 450,000 kg) was still present in the vadose zone as a DNAPL in 1993. Most of the DNAPL was located just above and within the CCU. Approximately 27,000 kg (i.e., 6 percent of the inventory) of DNAPL moved across the water table through the end of 1993.
- *What is the estimated distribution and state of carbon tetrachloride in the vadose zone?* The amount of carbon tetrachloride that accumulated in the vadose zone as a DNAPL through 1993 ranges from 19 to 65 percent of the total disposed of in the sensitivity simulations. The majority of the mass in 1993 was typically present in a free-phase DNAPL or sorbed phase. The center of mass for carbon tetrachloride in the vadose zone typically was directly beneath the disposal area and within the CCU.
- *How does SVE affect the distribution of carbon tetrachloride in the vadose zone?* SVE effectively removes carbon tetrachloride from the permeable layers of the vadose zone. The SVE that previously was applied to the 216-Z-9 Trench area likely removed a large portion of the carbon tetrachloride initially present in the permeable layers within the large radius of influence of the extraction wells. Finer grained layers with more moisture content are less affected by SVE and contain the remaining carbon tetrachloride in the vadose zone.

As summarized in PNNL-15914, additional three-dimensional modeling was performed to simulate carbon tetrachloride transport in a layered and heterogeneous system. Six additional sensitivity analyses were first performed using the groundwater model from PNNL-14895. Heterogeneous subsurface models then were constructed using either a pedotransfer function or a similar medial scaling method.

The layered heterogeneous modeling led to the following additional conclusions regarding migration of carbon tetrachloride in the subsurface.

- The layered heterogeneous model results indicated, consistent with the conceptual model presented in DOE-RL-2006-58, that DNAPL (if present) would tend to preferentially accumulate in the finer grained layers within the vadose zone.
- The presence of a large number of small-grained features within the vadose zone would limit the vertical migration of carbon tetrachloride DNAPL.
- Increased volatilization of carbon tetrachloride occurs with the presence of fine-grained layers, resulting in a higher distribution of carbon tetrachloride in the vapor, water, and sorbed phases.

- The CCU accumulates and retains the largest mass of carbon tetrachloride DNAPL in the vadose zone.
- The total mass of carbon tetrachloride calculated to have moved across the water table was 117,000 kg. This mass is comparable to the average value of 149,000 kg of total mass within the aquifer calculated by Murray et al., 2006, *Geostatistical Analysis of the Inventory of Carbon Tetrachloride in the Unconfined Aquifer in the 200 West Area of the Hanford Site*, and the total mass in the aquifer estimated as part of the carbon tetrachloride inventory summarized in DOE/RL-2006-58.

2.4.3.2 Particle-Tracking Analysis

A particle-tracking analysis depicting movement of the carbon tetrachloride plume at the water table was reported in D&D-28793, *Particle Tracking Analysis and Animations Depicting Movement of the Carbon Tetrachloride Plume*. The purpose of this analysis was to evaluate the hydraulic flow fields during and after the carbon tetrachloride disposal to known waste sites, to determine if the distribution of carbon tetrachloride in groundwater is reasonable based on hydraulics alone. It was not intended to model the three-dimensional flow field in the unconfined aquifer and was used as a screening-level analysis to evaluate the need to look for other potential source locations. The following summary is derived from that report.

The animation files showed travel paths for hypothetical carbon tetrachloride particles in groundwater. The travel paths represent carbon tetrachloride movement at the average groundwater-flow velocity. The particle simulation is an estimate of the carbon tetrachloride travel path and does not indicate or imply carbon tetrachloride groundwater concentrations.

Hydraulic gradients and velocity vectors were calculated using annual computations of the water-table elevation and hydraulic conductivity of the unconfined aquifer from the Hanford Sitewide groundwater model that was developed by PNNL. The data from the Hanford Sitewide model were linearly interpolated onto a square grid with 75 m (246-ft) spacing that extended across the entire 200 West Area. The hydraulic derivatives and hydraulic velocities were calculated for every year at each point in the grid using an internal algorithm in the Tecplot¹² software package. Travel paths for each year then were calculated using a numerical integration scheme, the hydraulic velocity field, and a retardation factor that represents the ratio of groundwater velocity to contaminant velocity (e.g., a retardation factor of 2 means that the groundwater travels at twice the velocity of the contaminant, or that the contaminant travels at one-half the velocity of the groundwater). The end points of travel paths for a given year were input as starting points of travel paths for the following year.

The forward travel path simulations are initiated with hypothetical carbon tetrachloride particles in a circular distribution in groundwater around the known discharge sites. The simulation starts approximately 7 to 8 years following the carbon tetrachloride discharge for each site (i.e., the assumed vadose-zone travel time to reach groundwater). Discharge to the 216-Z-9 Trench, 216-Z-1A Tile Field, and 216-Z-18 Crib began in 1955, 1964, and 1969, respectively; so the

¹² Tecplot is a registered trademark of Tecplot, Inc., Bellevue, Washington.

carbon tetrachloride particles around the facilities start traveling in 1962, 1971, and 1977, respectively. The circumference of the circle of particles approximates the perimeter of each disposal facility. The radius is 23.0 m (75.5 ft) at the 216-Z-9 Trench, 72.2 m (236.9 ft) at the 216-Z-1A Tile Field, and 136 m (446.2 ft) at the 216-Z-18 Crib. The movement of the hypothetical carbon tetrachloride particles is calculated, tracked, and displayed each half year until 2002. The simulations add a new circle of particles around the facilities each year to represent how carbon tetrachloride from a continuing source might move through the unconfined aquifer.

The backward travel path simulation begins with hypothetical carbon tetrachloride particles positioned where the high-concentration portion of the groundwater plume existed in 2002. The reverse movement of the hypothetical carbon tetrachloride particles is calculated, tracked, and displayed backward in time each year from 2002 to the year when the carbon tetrachloride may have entered the aquifer.

The forward particle tracks provide estimations of the distance from the source sites that the advective front of the plume traveled since the carbon tetrachloride entered the aquifer. The reverse particle tracks provide an indication of where the carbon tetrachloride that was observed in 2002 might have originated. Both the forward and the reverse particle-track simulations indicate that most of the carbon tetrachloride is apparently retarded in the groundwater. The reverse particle-track analyses resulted in very little movement from the mid-1980s to 1996. The forward-tracking animations for nonretarded carbon tetrachloride indicate much greater movement than has been observed in Hanford Site groundwater monitoring programs. Furthermore, the high-concentration area of the plume (e.g., greater than 2,000 $\mu\text{g/L}$) would not remain limited in area and near the source sites. The reverse-tracking animations indicate that a zero retardation factor value for existing groundwater contamination results in carbon tetrachloride sources that are farther away than the known source locations. A retardation factor of 4 produced both forward and reverse particle tracks representative of the current carbon tetrachloride distribution in groundwater. Selected snapshots of the animations from D&D-28793 are shown in Figures 2-36 to 2-38.

The particle tracks also indicate that there is not a continuing carbon tetrachloride source capable of sustaining the observed maximum concentrations where the plume centroid was found in 1996. Before initiation of the 200-ZP-1 Groundwater OU Phase II pump-and-treat operations in 1996, the high-concentration area of the plume was centered near the PFP and was offset to the north of the known discharge sites. If a continuing source existed at the discharge sites, then the maximum carbon tetrachloride concentrations in groundwater would occur around the discharge sites and not to the north. Drilling and sampling of PFP well 299-W15-42 did not reveal greatly elevated carbon tetrachloride concentrations in the vadose zone or groundwater. Therefore, it does not appear as though the elevated carbon tetrachloride concentration in groundwater beneath the PFP results from contaminants entering the aquifer from the vadose zone in that area. A continuing source of carbon tetrachloride groundwater contamination is not likely.

Well 299-W13-1 is located approximately 470 m (1,542 ft) east of the 200 West Powerhouse and beyond the extent of the particle-track figures. Carbon tetrachloride concentrations in well 299-W13-1 were greater than 1,200 $\mu\text{g/L}$ at specific depths in the aquifer when sampled in December 2003. The well is located in the approximate path of carbon tetrachloride particles

that originate from the 216-Z-9 Trench for the simulation with a retardation factor less than 4. The agreement between the particle tracks and the well-sampling results validates the flow paths and velocities calculated by the Hanford Sitewide model.

As illustrated in Figure 2-36, the reverse particle-track simulations that start with particles distributed along the leading edge of the groundwater plume, where the carbon tetrachloride concentrations are 1,000 and 2,000 $\mu\text{g/L}$, indicate that the particles converge toward a common source area to the west of the 216-Z-1A Tile Field and the 216-Z-12 and 216-Z-18 Cribs. The cause of the offset is uncertain but could result from the Hanford Sitewide model grid spacing and discharge inputs. The 216-U-14 Ditch received about 1.9×10^9 L of discharge during a short period in 1991, resulting in a reversed hydraulic gradient. The unlined 216-Z-19 Ditch and 216-Z-20 Crib also received large volumes of discharged water. The 216-T-19 Crib received 4.5×10^8 L of discharge during operation.

The carbon tetrachloride source status (i.e., continuous or noncontinuous) and mobility (i.e., retarded or nonretarded) may be considered in a simplified "truth-table" format. The actual environment may contain elements of all four of the logical outcomes combining source and mobility options. The intent of the truth table is to address the carbon tetrachloride source and movement in a general sense. For the purpose of the truth table, "continuous source" refers to ongoing, nonattenuating contaminants that enter groundwater and are capable of sustaining concentrations at the levels currently observed in the high-concentration area of the carbon tetrachloride plume.

1. If the source of carbon tetrachloride remained continuous and the movement was nonretarded, the extent of the high-concentration area would be much larger than currently observed. The origin of the plume would remain fairly obvious and would include the known source areas. The carbon tetrachloride distribution within the plume area would be more uniform than is currently observed. The fact that the high-concentration area appears to have remained fairly restricted in size and near the known discharge sites contradicts the hypothesis that there is a continuous source and a nonretarded contaminant movement.
2. If the source of carbon tetrachloride remained continuous and the movement were retarded, the high-concentration area would be restricted in area and would encompass the known source areas. Such a scenario would be consistent with current data if the location where the carbon tetrachloride enters the groundwater were offset from the known discharge sites. The PFP well (299-W15-42) did not substantiate such a hypothesis.
3. If the source of carbon tetrachloride was noncontinuous and the movement were nonretarded, the high-concentration area would be much larger, extend much farther than currently observed, and consist of lower concentration values. The fact that the high-concentration area appears to have remained fairly restricted in size close to the known discharge sites seems to dispute this hypothesis. The effects of dispersion on the carbon tetrachloride in the aquifer would reduce the concentration and cause greater spreading of a more uniform plume.

4. If the source of carbon tetrachloride were noncontinuous and the movement were retarded, the high-concentration area would be restricted in area and would remain at or near the source areas. Such a scenario is the best description of current observations, unless the carbon tetrachloride arrived at the water table much later than 8 years after disposal began. The animations, including a retardation factor of 2 and 4, appear to best approximate the currently observed groundwater conditions.

2.4.3.3 Geostatistical Analysis of Carbon Tetrachloride Persistence

PNNL conducted a geostatistical analysis of the persistence of carbon tetrachloride groundwater concentration for eight areas of elevated carbon tetrachloride groundwater concentrations in the 200 West Area that were identified by Fluor Hanford (Murray and Chien, 2005, "Geostatistical Analysis of the Persistence of Carbon Tetrachloride Groundwater Concentrations in the 200 West Area of the Hanford Site"). The purpose of this analysis was to help evaluate the potential for vadose-zone sources at these areas. The results of this report are summarized below, and the eight areas are shown in Figure 2-39.

The available carbon tetrachloride data for the period of 1994 to 2004 were reviewed to identify a set of wells that were sampled regularly through the 10-year period. Data sets initially were selected from 53 wells for which carbon tetrachloride data were consistently available from 1996, 1998, 2000, and 2002. Consistent well locations were selected for each time period, so variations in concentration in a given area would not be caused by changes in well configurations. A fifth data set was added to represent conditions in 37 wells during 2004 and 11 wells during 2003; 5 wells from the initial four data sets could not be used in the 5th data set, because they were not sampled in 2003 or 2004. Although the results for 2004 generally agreed with results for earlier time periods, the missing five well locations increased the degree of uncertainty. No significant differences were seen in the overall distribution of carbon tetrachloride concentrations over the 10-year time period. A slight decrease in concentrations was observed during the last two time periods.

The carbon tetrachloride concentration data were highly skewed, so concentration mapping was performed on normal-score data transforms. Experimental variograms were fit with isotropic models that showed a slight decrease in range from 1,200 m (3,937 ft) in 1996 and 1998 to 1,000 m (3,280.8 ft) in 2000 and 2002. The variogram range in 2004 was further reduced, but that may be an artifact of the missing well locations for the last time period. The decrease in range also might be caused by a slight decrease in the size of the plume.

Murray and Chien (2005) generated 1,000 simulations of carbon tetrachloride concentration for each time period and found that 500 simulations were sufficient to characterize the spatial variability. The modeling summarized carbon tetrachloride spatial distribution in several ways, including calculation of median simulated values, the probability of exceeding several cut-off values, and calculation of percentiles of local distributions. Maps were prepared from the statistics to identify areas of high and low concentration for each time period and to provide measures of the uncertainty in carbon tetrachloride concentrations. Figure 2-39 is a summary map of the sub-areas that were identified by Fluor Hanford. The sub-areas are ranked in terms of the likelihood for containing persistent carbon tetrachloride sources.

The simulations of the individual sub-areas identified important differences. The differences suggest that some of the sub-areas might contain ongoing carbon tetrachloride sources. The simulations include the following notable results:

- Several of the northern sub-areas had relatively high median concentrations with low variability and little variation with time. The sub-areas with the highest median concentrations and lowest variability were sub-areas 3 and 4. Sub-areas 2 and 5 also are candidates for ongoing carbon tetrachloride sources, but they display greater variability over time. If the concentration reported for well 299-W10-1 in 1998 is not representative, then the median concentrations for sub-areas 2 and 5 are higher and less variable. Concentrations for sub-areas 2 and 5 then would resemble sub-areas 3 and 4.
- Sub-area 7 exhibited a significant decrease in median concentration during the last two time periods. The substantial concentration decrease could result from nearby pump-and-treat operations.
- Sub-areas 1 and 6 exhibited significant decreases in median concentration and are unlikely to contain ongoing sources for carbon tetrachloride release.
- Sub-area 8 showed an increasing median carbon tetrachloride concentration at a level that is significantly lower than all of the other sub-areas; it is unlikely to contain a significant continuing carbon tetrachloride source.

2.5 200-PW-1 OPERABLE UNIT SOIL-VAPOR EXTRACTION

SVE is being used to remove carbon tetrachloride from the vadose zone as an interim action at the 200-PW-1 OU (formerly designated as the 200-ZP-2 OU). A general overview is provided in WMP-30426, *Performance Evaluation Report for Soil Vapor Extraction Operations at the 200-PW-1 Carbon Tetrachloride Site, Fiscal Year 2005*, which discusses system operation and effectiveness from February 25, 1992, through October 31, 2005. The following summary is primarily from that report.

Carbon tetrachloride was found in the unconfined aquifer beneath the 200 West Area in the mid-1980s. Groundwater monitoring indicated that the carbon tetrachloride plume was widespread and that concentrations were increasing. On December 20, 1990, the EPA and Ecology requested that DOE proceed with work required to implement an expedited response action for removing carbon tetrachloride contamination from the unsaturated soils in the 200 West Area. The request was based on concerns that the carbon tetrachloride residing in the soils was continuing to spread to the groundwater and, if left unchecked, would significantly increase the areal extent of groundwater contamination. The purpose of the expedited response action was to minimize carbon tetrachloride migration within the vadose zone and away from the carbon tetrachloride disposal sites in the 200 West Area.

Carbon tetrachloride removal from the vadose zone was initiated in 1992 using SVE and vapor treatment with granular activated carbon (GAC). Three SVE systems with a total capacity of 85 m³/min were located near each of the three primary carbon tetrachloride disposal sites in

March 1993. The three primary carbon tetrachloride disposal sites are the 216-Z-9 Trench, 216-Z-1A Tile Field, and 216-Z-18 Crib subsurface infiltration facilities that were used from 1955 through 1973 for disposal of carbon tetrachloride aqueous and organic liquid wastes. The SVE and monitoring wells are shown in Figure 2-40.

Carbon tetrachloride concentrations in the extracted soil vapor decreased significantly at all three sites during operation of the SVE systems. Initial carbon tetrachloride concentrations in extracted soil vapor were approximately 30,000 ppmv at the 216-Z-9 Trench well field and 1,500 ppmv at the 216-Z-1A Tile Field / 216-Z-18 Crib well field. In sharp contrast, carbon tetrachloride concentrations in extracted soil vapor were approximately 26 ppmv at the 216-Z-9 Trench well field in July 2005 and 14 ppmv at the 216-Z-1A Tile Field / 216-Z-18 Crib well field in October 2005. The decrease in measured carbon tetrachloride soil-vapor concentration from the upper (U) and lower (L) screened intervals in well 299-W15-218 near the 216-Z-9 Trench (Figure 2-41) is typical of the decreasing carbon tetrachloride soil-vapor concentration trend measured in the individual SVE wells at the three primary carbon tetrachloride disposal sites.

The primary source of the remaining carbon tetrachloride in the vadose zone apparently is the relatively low-permeability CCU, which is approximately 38 to 45 m (124.7 to 147.6 ft) bgs. Carbon tetrachloride is removed by the SVE system as it migrates from the lower permeability zone into the overlying and underlying higher permeability zones. The rate of removal is controlled by the carbon tetrachloride desorption and diffusion rates. At many monitoring locations, including locations within the higher permeability zones, the relatively low carbon tetrachloride rebound concentrations indicate that the readily available mass is removed (i.e., carbon tetrachloride already in the vapor phase or volatilizing directly from residual nonaqueous phase liquid). The availability of additional mass for removal is controlled by desorption and diffusion kinetics for carbon tetrachloride, which is adsorbed within soil-particle micropores.

The operating strategy was modified in fiscal year 1998 based on the results of BHI-01105, *Rebound Study Report for the Carbon Tetrachloride Soil Vapor Extraction Site, Fiscal Year 1997*, and the declining rate of carbon tetrachloride removal during continuous extraction operations. The 14.2 m³/min SVE system was the only SVE unit operated during Fiscal years 1998, 1999, 2001, 2002, 2003, 2004, and 2005. The system typically operated from April through September, and alternated between the 216-Z-9 Trench and the 216-Z-1A Tile Field / 216-Z-18 Crib sites in approximately 3-month periods. The system was maintained in standby mode from October through March to allow time for carbon tetrachloride vapor concentrations to rebound. System operation temporarily was suspended during the entire period of fiscal year 2000 as a result of higher priority remediation activities that competed for limited funding. The declining rate of carbon tetrachloride concentration in the soil vapor extracted from the SVE systems at the 216-Z-9 Trench and the 216-Z-1A Tile Field / 216-Z-18 Crib sites from 1997 to 2005 is shown in Figures 2-42 and 2-43, respectively.

Between November 2004 and October 2005, the monthly availability for all three SVE systems averaged 87 percent. Approximately 78,710 kg of carbon tetrachloride were removed from the vadose zone between April 1991 and October 2005. The total includes 54,183 kg from the 216-Z-9 Trench well field and 24,528 kg from the 216-Z-1A Tile Field / 216-Z-18 Crib well

field. The extracted mass of carbon tetrachloride was 644 kg in fiscal year 2002, 294 kg in fiscal year 2003, 256 kg in fiscal year 2004, and 362 kg in fiscal year 2005. The mass of carbon tetrachloride removed in fiscal year 2005 is slightly higher than the 256 kg extracted in fiscal year 2004 and the 294 kg extracted in fiscal year 2003. The higher mass removal in fiscal year 2005 resulted in part because operations continued longer at the high-production area around the 216-Z-9 Trench in fiscal year 2005; operations only included the high-production area around the 216-Z-9 Trench for one month in fiscal year 2004 and zero months in fiscal year 2003, to avoid interfering with drilling activities. However, the total mass of carbon tetrachloride removed in fiscal year 2005 was less than the 644 kg removed in fiscal year 2002. This decrease resulted in part because the SVE system was not operated or was operated on dayshift only, for approximately 77 days in fiscal year 2005, while the automated concentration monitoring equipment was being repaired.

Passive SVE systems were installed on eight wells in fiscal year 1999 and operated from fiscal year 2000 through fiscal year 2004 to remove carbon tetrachloride from the vadose zone. Passive SVE is a natural process driven by barometric-pressure fluctuations and often is referred to as barometric pumping. The eight wells are located in the 216-Z-1A Tile Field / 216-Z-18 Crib well field. Approximately 10 kg of carbon tetrachloride were removed from the vadose zone by passive SVE in fiscal year 2005; approximately 70 kg of carbon tetrachloride were removed between October 1999 and September 2005.

An estimate was prepared in 1993 for the disposition of carbon tetrachloride that had been discharged between 1955 and 1990 to the three primary disposal sites. It was estimated that 21 percent of the original carbon tetrachloride inventory discharged to the three primary disposal sites was lost to the atmosphere; 12 percent was partitioned into the vadose zone as vapor, dissolved, and adsorbed phases; 2 percent was dissolved in groundwater; and 1 percent was biodegraded. The remaining 64 percent of the carbon tetrachloride inventory was assumed to be in residual saturation and nonequilibrium sorption sites within the vadose zone and aquifer and possibly as DNAPL in groundwater.

The total mass of removed carbon tetrachloride represents an estimated 10.4 percent of the original carbon tetrachloride inventory that was discharged to the soil column. Approximately 74,851 kg, or 10 percent of the inventory, was removed from 1991 through 1997. Only 0.4 percent of the original carbon tetrachloride inventory was removed from fiscal year 1998 through fiscal year 2005.

Non-operational soil-vapor monitoring data are collected monthly at wells and probes that are not online to the SVE system. The objectives of monitoring the non-operational wells and probes are (1) to measure carbon tetrachloride concentrations and trends near the vadose/atmosphere and vadose/groundwater interfaces to evaluate whether non-operation of the SVE system is negatively impacting the atmosphere or groundwater, and (2) to be cognizant of carbon tetrachloride concentrations and trends near the CCU to provide an indication of concentrations that can be expected during restart of SVE operations and to support selection of online wells. For each well field, the period of rebound begins when SVE operations are suspended temporarily.

Carbon tetrachloride concentrations rebound during periods of non-operation as a result of carbon tetrachloride accumulating in the pore spaces after apparent diffusion from sediment micropores, soil moisture, residual DNAPL, and/or low-permeability zones. When operations resume, initial extracted carbon tetrachloride concentrations are higher than the carbon tetrachloride concentrations at the previous shutdown. These initial concentrations generally will be lower than the initial concentrations following previous periods of rebound. However, the non-operational duration for each well field varies from year to year, which also may affect the rebound concentration.

For each period of rebound monitoring since fiscal year 1997, the maximum rebound concentrations have occurred near the CCU (Figure 2-44).

Because carbon tetrachloride concentrations did not increase significantly at the near-surface probes, temporarily suspending operation of the SVE system appears to have caused minimal detectable vertical transport of carbon tetrachloride through the soil surface to the atmosphere. Because carbon tetrachloride concentrations did not increase significantly near the water table during this time, temporarily suspending operation of the SVE systems appears to have had no negative impacts on groundwater quality. As in previous years, soil-vapor monitoring in fiscal year 2005 suggests that the CCU is the most likely source zone for the observed carbon tetrachloride vapor.

2.6 200-ZP-1 OPERABLE UNIT GROUNDWATER INVESTIGATIONS AND INTERM ACTION

The RI for the 200-ZP-1 Groundwater OU was completed in 2006, and the FS will be prepared in 2007. Additionally, the DNAPL Source Term project and other studies have prepared updated estimates of the inventory of carbon tetrachloride in the groundwater. An interim-action pump-and-treat system has been operating at the 200-ZP-1 Groundwater OU to control the high-concentration part of the carbon tetrachloride groundwater plume. A summary of these activities is provided in this section to help integrate the current understanding of the carbon tetrachloride contamination in the vadose zone and groundwater beneath the 200 West Area.

The conceptual model of the carbon tetrachloride groundwater plume presented in the 200-ZP-1 Groundwater OU RI (DOE/RL-2006-24) is that the plume extends vertically from the top of the unconfined aquifer near the disposal source areas by the PFP to the base of the unconfined aquifer at the top of the Ringold Formation lower mud (unit 8). The plume extends through the Ringold Formation to the top of basalt where the unit 8 confining layer is absent, as at well 299-W13-1. The conceptual model is that, as the distance from the source area increases in a downgradient direction, the highest carbon tetrachloride concentrations occur deeper in the unconfined aquifer. The model indicates that recharge from natural infiltration and less contaminated former wastewater discharges have contributed to reduced carbon tetrachloride concentrations in the upper portion of the unconfined aquifer in a downgradient direction from the source areas.

The DNAPL Source Term project reviewed available evidence on whether carbon tetrachloride DNAPL is present within the unconfined aquifer. The findings from that review are summarized below (DOE/RL-2006-58).

- Depth-discrete groundwater sampling from 24 existing wells centered around the high-concentration portion of the carbon tetrachloride groundwater plume showed that the highest detected concentration (5,100 $\mu\text{g/L}$) is significantly less than the carbon tetrachloride solubility limit (800,000 $\mu\text{g/L}$).
- The total calculated mass of carbon tetrachloride in the groundwater plume decreased from 1991 to the present.
- Groundwater modeling indicates that if carbon tetrachloride DNAPL sources were present at mid-depth in the aquifer, they would produce concentrations in monitoring wells above those measured to date. A carbon tetrachloride DNAPL source at the bottom of the aquifer could produce concentrations in monitoring wells similar to those measured to date. The existing data do not support the emplacement of a deep source without leaving a residual detectable trace higher in the aquifer. A deep-well pumping and sampling test is planned in well 299-W15-6 to investigate the presence of a carbon tetrachloride DNAPL source at the bottom of the aquifer beneath the 216-Z-9 Trench.
- The available evidence indicates that there is not a significant carbon tetrachloride DNAPL source within the aquifer beneath the 216-Z-9 Trench.
- High-concentration carbon tetrachloride vapors that were found in the deep vadose zone during a 1993 drilling program likely contaminated the shallow aquifer before startup of the interim-action SVE system around the 216-Z-9 Trench.
- Liquid waste disposal sites near the primary carbon tetrachloride waste disposal sites may have introduced sufficient water to have contacted contaminated vapors, liquids, or soils in the vadose zone and transported dissolved phase carbon tetrachloride to the unconfined aquifer.

To confirm that there is not a significant carbon tetrachloride DNAPL source within the unconfined aquifer beneath the 216-Z-9 Trench, a deep-well pumping and sampling test is planned in fiscal year 2007 to investigate carbon tetrachloride concentrations at the bottom of the aquifer beneath the trench. Groundwater will be pumped and sampled for 3 to 4 months from deep well 299-W15-6, which is screened at the base of the unconfined aquifer. If the carbon tetrachloride concentrations obtained bi-weekly from the pumped groundwater during the test period remain below 1 percent of the dissolution limit for carbon tetrachloride (8 ppm), this would corroborate previous sampling and modeling results that there is not a DNAPL source beneath the 216-Z-9 Trench near the base of the unconfined aquifer. However, if the test results show increasing carbon tetrachloride concentrations at or above the 8 ppm limit, this would be suggestive of a deep DNAPL source, and further sampling, pumping, and testing may be recommended.

Depth-discrete sampling results from 39 wells sampled during performance of the 200-ZP-1 Groundwater OU RI were used as input into RockWorks2004¹³. A solid model was generated

¹³ RockWorks2004 is a trademark of Rockware, Inc., Golden, Colorado.

from the data using an inverse-anisotropic modeling algorithm. The model was stratabound at the top with the water table elevation in the unconfined aquifer and was stratabound at the base with the elevation of the top of basalt. Using the solid model results, volumes of carbon tetrachloride within the 5 µg/L, 100 µg/L, 1,000 µg/L, 2,000 µg/L, and 4,000 µg/L contours were calculated using an aquifer porosity of 0.30. The mass of carbon tetrachloride within each volume then was calculated using the geometric mean concentration within each contour interval (e.g., between the 100 µg/L and 1,000 µg/L contours). An order-of-magnitude mass of dissolved carbon tetrachloride of 96,500 kg was calculated. Using available and relatively limited chloroform groundwater analytical data, a chloroform mass of approximately 250 kg in the aquifer was calculated. Using the dissolved / sorbed / chloroform proportions from Murray et al., 2006, the Source Term project estimated the carbon tetrachloride inventory in the groundwater as 96,500 kg dissolved, 76,800 kg sorbed, and 23,600 kg degraded to chloroform (DOE/RL-2006-58).

Geostatistical analysis performed by Murray, et al., 2006, calculated a mean total mass of carbon tetrachloride in the aquifer of 114,000 kg, with a range within the 95 percent confidence interval of 73,900 to 174,000 kg. Of the total amount, dissolved carbon tetrachloride was calculated to account for 49 percent of the total chlorinated mass below the water table, sorbed carbon tetrachloride accounts for 39 percent of the total, and chloroform accounts for 12 percent of the total. Adopting these proportions, and using the total mass of 114,000 kg of carbon tetrachloride calculated by Murray et al., 2006, an estimated 55,900 kg of carbon tetrachloride is dissolved, 44,500 kg is sorbed to soil below the water table, and 13,700 kg has degraded to chloroform below the water table.

The 200-ZP-1 Groundwater OU interim-action pump-and-treat system was implemented in a three-phased approach. The 200-ZP-1 Groundwater OU pump-and-treat system wells are shown in Figure 2-45. Phase I operations consisted of a pilot-scale treatability test between August 29, 1994, and July 19, 1996, around the 216-Z-12 Crib. During this phase, contaminated groundwater was removed through a single extraction well (299-W18-1) at a rate of approximately 151 L/min (40 gal/min), treated using GAC, and then returned to the aquifer through an injection well (299-W18-4). For more detailed information about operations during the treatability test, refer to DOE/RL-95-30, *200-ZP-1 Operable Unit Treatability Test Report*.

Concurrent with Phase I operations, EPA/ROD/R10-95/114, *Declaration of the Interim Record of Decision for the 200-ZP-1 Operable Unit*, was issued in June 1995. The selected remedy was to use groundwater pump-and-treat technology to minimize further migration of carbon tetrachloride, chloroform, and trichloroethylene in the groundwater and remove contaminant mass.

Phase II operations commenced August 5, 1996, in accordance with the interim ROD (EPA/ROD/R10-95/114) and Tri-Party Agreement Milestone M-16-04A (Ecology et al., 1989, as amended) The 1996 groundwater plume was the basis for the interim ROD. The well field configuration during Phase II operations consisted of three extraction wells (299-W15-33, 299-W15-34, and 299-W15-35), pumping at a combined rate of approximately 567.8 L/min (150 gal/min), and a single injection well (299-W15-29). Groundwater was treated using an air stripper to release carbon tetrachloride into a vapor phase, and GAC was used to collect the vapor. For a detailed description of the treatment system setup and operation, refer to

BHI-00952-02, *200-ZP-1 Interim Remedial Measure Quarterly Report, October – December 1996*. Phase II operations were terminated on August 8, 1997, to transition to Phase III operations.

Phase III operations began on August 29, 1997, satisfying Tri-Party Agreement Milestone M-16-04B (Ecology et al., 1989, as amended). The well field for Phase III operations was expanded to include six extraction wells (existing wells, plus new wells 299-W15-32, 299-W15-36, and 299-W15-37) and five injection wells (existing well, plus wells 299-W18-36, 299-W18-37, 299-W18-38, and 299-W18-39). The total pumping rate was increased to more than 800 L/min (>200 gal/min), versus a total treatment system capacity of 1,893 L/min (500 gal/min). The treatment process for the Phase III system uses the same air-stripping and GAC systems for remediating contaminated groundwater. Extraction wells were installed to contain the high-concentration portion of the carbon tetrachloride plume located near PFP, as required by the interim ROD (EPA/ROD/R10-95/114). The southernmost extraction well, 299-W15-37, was converted to a monitoring well in January 2001 because of its limited impact on hydraulic capture of the high-concentration portion of the plume (DOE/RL-2001-53, *Fiscal Year 2001 Annual Summary Report for the 200-UP-1 and 200-ZP-1 Pump and Treat Operations*).

Two new extraction wells were drilled and brought online in fiscal year 2004. Well 299-W15-45 replaced 299-W15-33, and well 299-W15-47 replaced 299-W15-32. Both new wells have been drilled deeper into the aquifer and were constructed with 15.2 m (50-ft) screens, starting 1.5 m (5 ft) below the water table in the upper, unconfined aquifer. The old wells have been reconfigured to monitor water levels.

The key achievement for the 200-ZP-1 Groundwater OU pump-and-treat system in fiscal year 2005 was the expansion of the five-well extraction system to a total of nine wells, with the addition of four new extraction wells north of the existing baseline plume area. Extraction pumps were installed in existing monitoring wells 299-W15-40, 299-W15-43, 299-W15-44, and 299-W15-765, were connected to the 200-ZP-1 Groundwater OU treatment building, and formally started groundwater extraction on July 27, 2005. Since startup, the extraction system pumping rates have increased to between 946 and 1,230 L/min (250 to 325 gal/min).

The fiscal year 2005 hydraulic capture analysis shows that the pump-and-treat system continues to capture the high-concentration levels of carbon tetrachloride (greater than 2,000 to 3,000 $\mu\text{g/L}$) at the extraction wells. Groundwater monitoring results for fiscal year 2005 also show that carbon tetrachloride concentrations continue to decline in the unconfined aquifer (DOE/RL-2005-91, *Fiscal Year 2005 Annual Summary Report for 200-UP-1 and 200-ZP-1 Pump-and-Treat Operations*). Carbon tetrachloride contamination in the groundwater was reduced in the area of highest concentrations through mass removal. Over 322.3 million L (85.1 Mgal) of contaminated groundwater were treated in fiscal year 2005 at an average flow rate of 715 to 1,116 L/min (190 to 295 gal/min). Treatment of the contaminated water resulted in the removal of 753.5 kg of carbon tetrachloride in fiscal year 2005. Between the initiation of pump-and-treat operations in August 1994 and the end of fiscal year 2005, approximately 2.76 billion L (725 Mgal) of water has been treated, resulting in the removal of 9,308 kg of carbon tetrachloride (DOE/RL-2005-91).

The reduction in carbon tetrachloride concentrations at the top of the unconfined aquifer underlying the primary carbon tetrachloride vadose-zone waste sites is shown by the changes in the carbon tetrachloride groundwater plume from 1990 to 2004, as illustrated in Figure 2-46. The reduction likely resulted from the dual application of SVE remediation in the vadose zone and the pump-and-treat groundwater remediation in the source vicinity.

2.7 216-A-8 CRIB REMEDIAL INVESTIGATION, 200-PW-3 OPERABLE UNIT

2.7.1 Sampling and Analysis of Characterization Boreholes

The SAP for the 216-A-8 Crib included sampling activities to be conducted before the characterization borehole (C4545) was drilled, to determine the best location for this borehole (DOE/RL-2001-01, Appendix B). These activities included pushing five GeoProbe boreholes to depths of 3.7 to 4.6 m (12 to 15 ft) bgs, collecting and analyzing soil-vapor samples from these boreholes, collecting and analyzing soil-vapor samples from five existing wells, and geophysically logging six existing wells. The primary focus of the soil sampling in Borehole C4545 beneath the 216-A-8 Crib, was to characterize the vadose zone for the nature and distribution of organic and radiological contaminants. The following sampling activities were completed as described in WMP-27020.

Soil-vapor sampling was conducted in July 2004 in five direct-push boreholes that were installed along the length of the 216-A-8 Crib using the GeoProbe. Figure 2-47 shows the location of the five boreholes (C4540, C4541, C4542, C4543, and C4544) and the characterization borehole (C4545). The five boreholes were advanced to depths of 3.7 to 4.6 m (12 to 15 ft) bgs and, before vapor sampling, the casing in each borehole was drawn back to provide a 0.3 m (1-ft) sampling interval of exposed formation at the bottom of the borehole. An organic vapor monitor was used to provide real-time field-screening feedback for soil-vapor samples collected from the five GeoProbe push holes. Soil-vapor samples were collected in Tedlar bags for field screening for specific VOCs using the Photovac 10S Plus¹⁴ gas chromatograph and the Innova 1312 multi-gas analyzer. Four specific types of Dräger¹⁵ tubes (colorimetric indicator tubes) were selected to cover the range of organic contaminants that might be present, in addition to the VOCs that could be analyzed using the gas chromatograph and Innova 1312 analyzer. These four types of Dräger tubes were used to test for ammonia, a range of easily oxidized compounds, and hydrocarbons.

Additional soil-vapor sampling took place at five existing wells at the 216-A-8 Crib (299-E25-4, 299-E25-5, 299-E25-7, 299-E25-8, and 299-E25-9) during April 2005. Figure 2-47 shows the locations of these five wells. In each well, a soil-vapor sample was obtained from the screened

¹⁴ Photovac 10S Plus is a trademark of Photovac, Inc., Waltham, Massachusetts.

¹⁵ Dräger is a trademark of OFI Testing Equipment, Inc., Houston, Texas.

interval, which was isolated by using a packer. The packer was set at depths ranging from 69.5 to 72.8 m (228 to 239 ft). A field-screening instrument (MIRAN SapphIRe Ambient Air Analyzer) was used to analyze the soil-vapor samples for VOCs and semi-VOCs. Initial operation of the MIRAN Analyzer in spectrum-scan mode allowed scanning of each soil-vapor sample for the possible presence of up to five of the organic compounds in the instrument library. No organic compounds were detected in any of the soil-vapor samples from the five wells. As a result, the instrument was not reconfigured to analyze the samples in single-compound mode.

As stated in WMP-27020, in situ soil-vapor sampling from vent risers in the 216-A-8 Crib was not conducted because of radiological control concerns. The vent risers were determined to be inaccessible because of the presence of radiological contamination within the risers, leading to an unacceptable potential for spreading contamination to vapor-sampling equipment and sampling personnel.

Geophysical logging using the SGLS was conducted in five existing wells from which soil-vapor samples also were collected (299-E25-4, 299-E25-5, 299-E25-7, 299-E25-8, and 299-E25-9), and in one other existing well (299-E25-6), between April and July 2004. Figure 2-47 shows the locations of these wells.

The SAP (DOE/RL-2001-01, Appendix B) provided guidance for selection of the final location of Borehole C4545. This guidance states the following.

- The borehole will be drilled at the location of the highest organic concentrations.
- If no organics are detected or if the results are inconclusive, the borehole will be drilled at the location with the highest radionuclide concentrations.

The results of the soil-vapor sampling investigations in the shallow and deep vadose zone did not conclusively indicate the presence of organics at any of the locations sampled. However, the geophysical logging investigation clearly identified the location with the highest radionuclide concentrations. Existing well 299-E25-5 exhibited the highest radionuclide concentrations, with a maximum Cs-137 value of 30,800 pCi/g found at 7.6 m (25 ft) below the top of the casing. The second highest levels were found in existing well 299-E25-6, with a Cs-137 concentration of 50 pCi/g in the interval from 7.6 to 9.1 m (25 to 30 ft) below the top of the casing. The area with the highest radionuclide concentrations is located near the west end of the 216-A-8 Crib, as anticipated in DOE/RL-2001-01, Appendix B. Therefore, based on the Work Plan guidance and on the results of the soil-vapor sampling and borehole geophysical logging at the 216-A-8 Crib, Borehole C4545 was located on the south side of well 299-E25-5. This location is close to the center of the 216-A-8 Crib and closer to well 299-E25-6, where contamination appeared to be slightly deeper.

Soil samples were collected at specific depths during the installation of Borehole C4545, in accordance with the sample design in the SAP (DOE/RL-2001-01, Appendix B). The primary focus of sampling beneath the 216-A-8 Crib was to characterize the vadose zone for the nature and distribution of organic and radiological contaminants. Seven samples were to be collected, including one from each major geologic unit, during drilling of the vertical borehole. The rationale for each sample depth is as follows:

- 5.5 to 6.2 m (18 to 20.5 ft) -- Characterize the vadose zone immediately below the base of the crib; organic layer observed immediately below the 216-A-24 Crib
- 6.6 to 7.3 m (21.5 to 24 ft) -- Characterize the zone of highest cesium contamination detected during spectral gamma geophysical logging
- 15.2 to 16.0 m (50 to 52.5 ft) -- Characterize the zone just below the cesium contamination detected during spectral gamma geophysical logging
- 31.2 to 32.0 m (102.5 to 105 ft) -- Characterize the zone at the maximum depth of contamination indicated by gross gamma geophysical logging
- 54.1 to 54.9 m (177.5 to 180 ft) -- Characterize the contaminant distribution at the contact between the Hanford formation sand-dominated and lower gravel-dominated sequences
- 71.0 to 71.8 m (233 to 235.5 ft) -- Characterize the deep zone of cesium contamination detected during spectral gamma geophysical logging
- 79.7 to 80.5 m (261.5 to 264 ft) -- Characterize the capillary fringe to evaluate impact to groundwater.

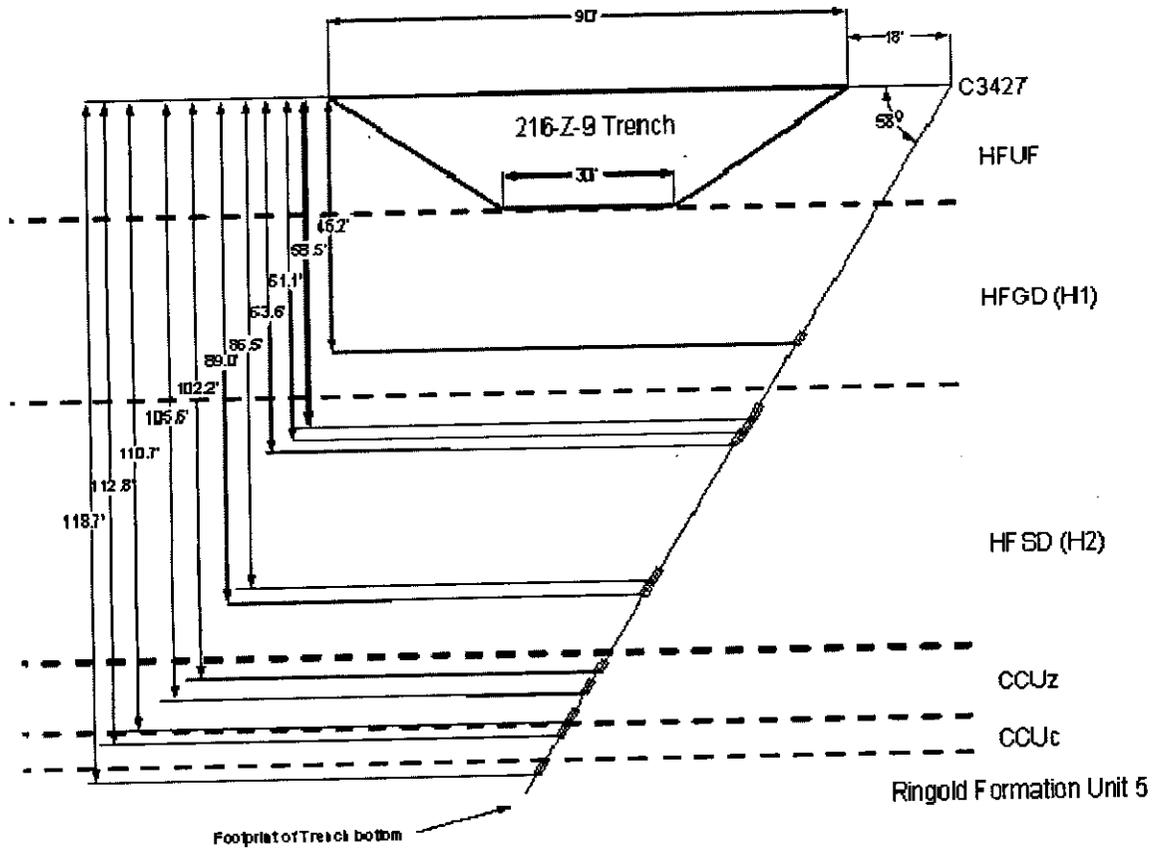
Lithologic variations and changes in chemical or radiological contamination also resulted in the modification of some of the sampling intervals during drilling to ensure that the sampling objectives were met. The samples were submitted to analytical laboratories for chemical and radiological analysis and determination of physical properties. As described in D&D 30565, 12 soil samples (9 primary, one duplicate, and 2 split) and 8 associated liquid QC samples (one equipment blank and 7 trip blanks) were obtained for COPC analysis. Additional samples were collected to support radiological screening, waste management, and physical property testing.

2.7.2 Borehole Geophysical Logging

As described in WMP-27020, SGLS logging of Borehole C4545 took place when the borehole was at a depth of 21.3 m (70 ft) bgs and again at the total borehole depth of 80.6 m (264.5 ft) bgs. The SGLS logging system provided a continuous radiometric signature of the soils, measured through a single thickness of casing, to a depth approximately 0.3 m (1 ft) above the water table (measured at 79.76 m [261.67 ft] bgs on June 30, 2005).

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Figure 2-2. Slant Well 299-W15-48 (C3427) Orientation and Sampling at the 216-Z-9 Trench.



Legend
 □ Soil Sampling Location
 (Vertical depth shown is bottom of sample)

HFUF = Hanford Formation Upper Fines
 HFGD = Hanford Formation Gravel Dominated
 HFSD = Hanford Formation Sand Dominated
 CCUz = Cold Creek Unit Silt
 CCUc = Cold Creek Unit Caliche

Figure 2-3a. Locations of 1961 and 1963 Historical Soil Samples in the 216-Z-9 Trench.

(From ARH-2915)

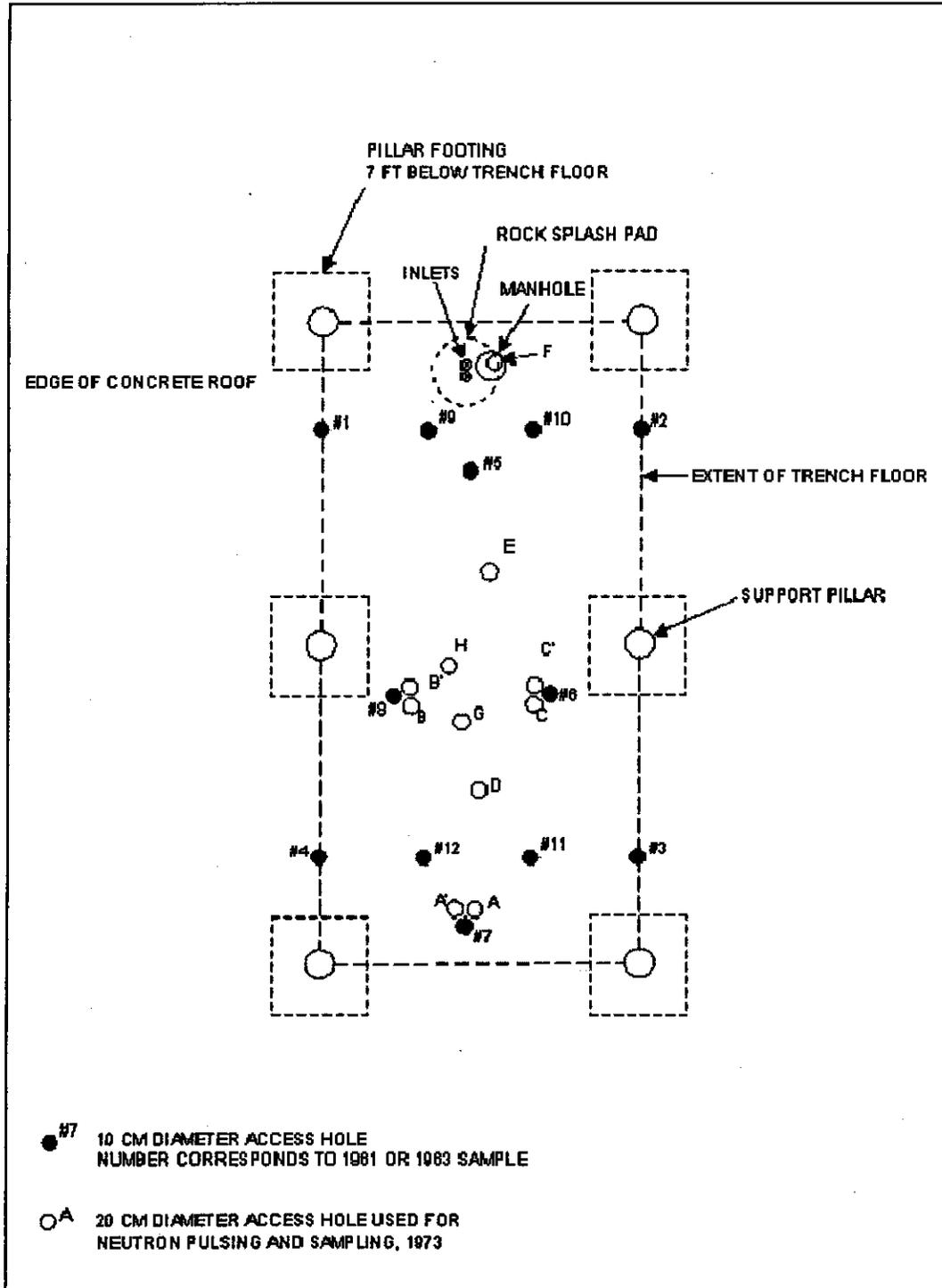


Figure 2-3b. Locations of 1973 Historical Soil Samples in the 216-Z-9 Trench.

(From ARH-2915)

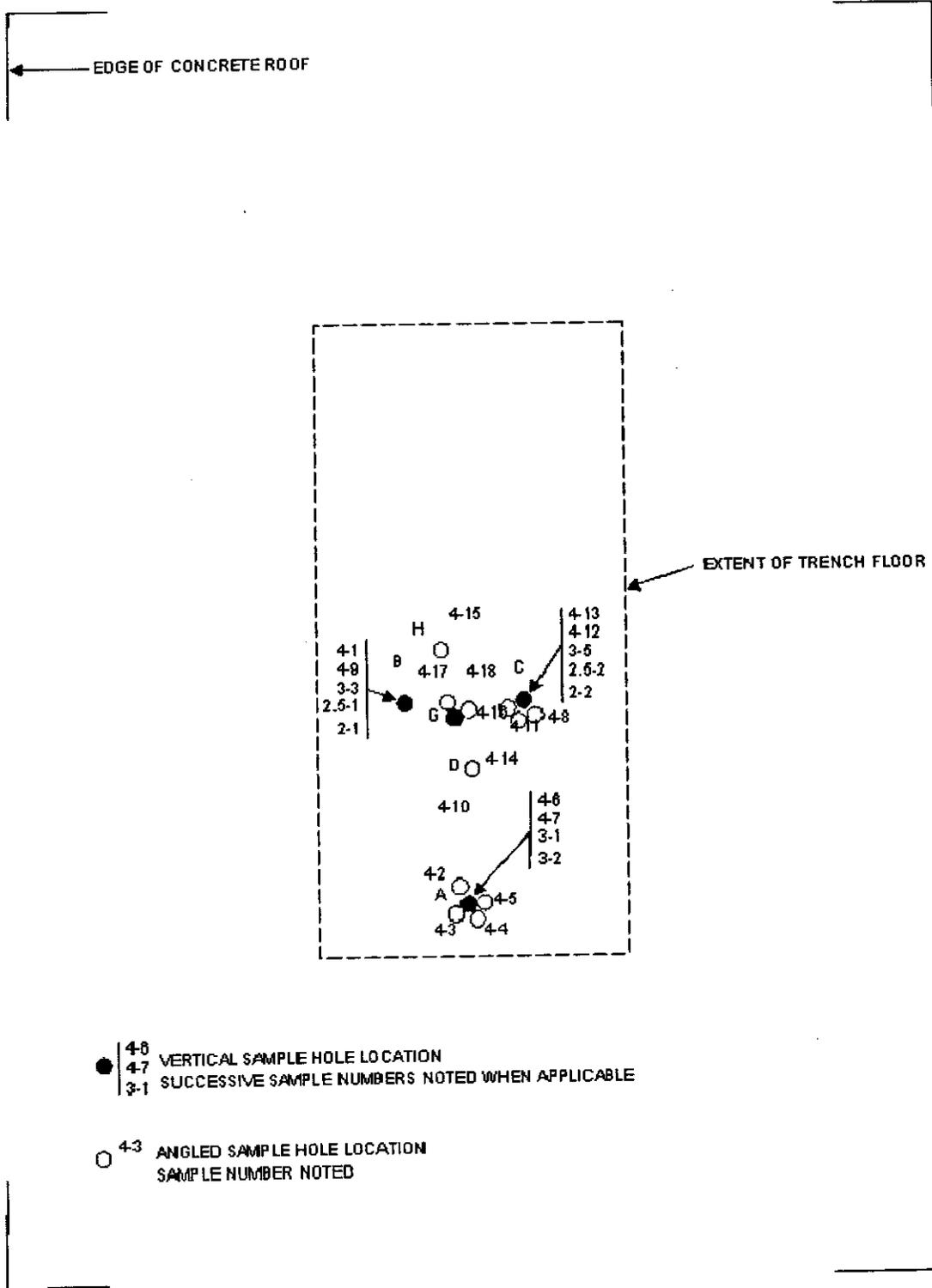


Figure 2-4. Location of Wells around the 216-Z-1A Tile Field.

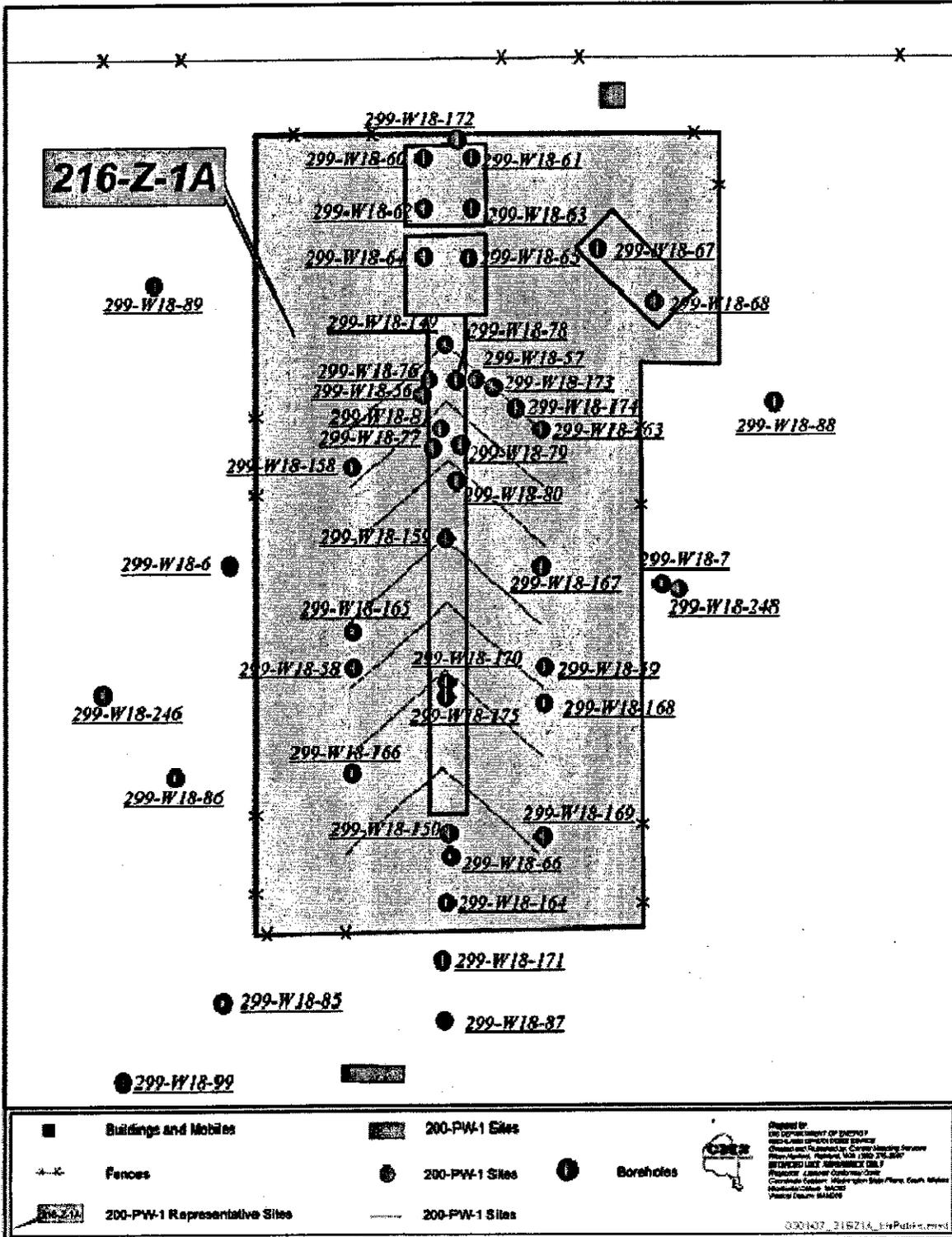


Figure 2-5. Step I Study Area for the Dispersed Carbon Tetrachloride Vadose Zone Plume Investigation.

(From CP-13514)

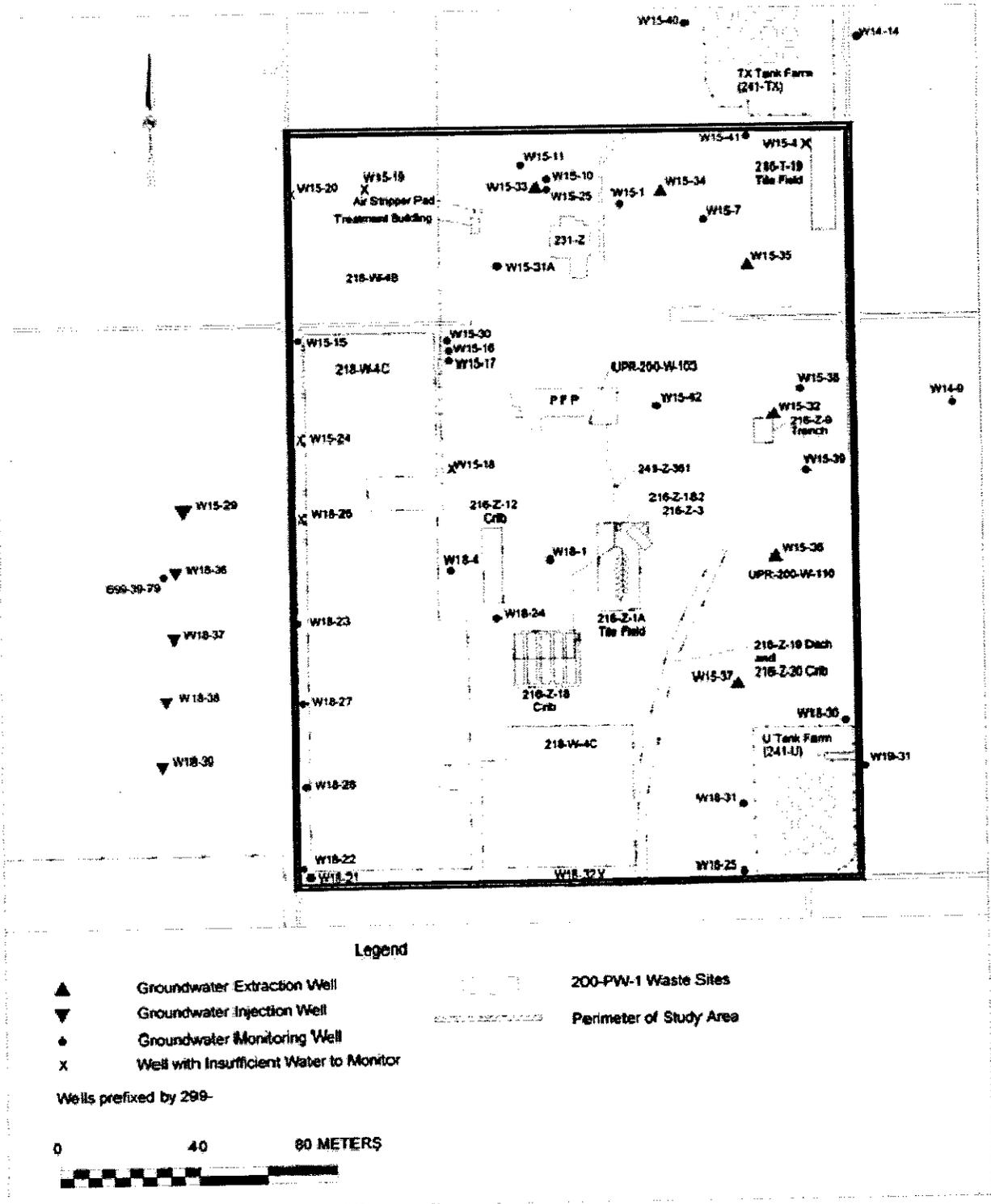


Figure 2-7. Location of Step I Vadose Zone Soil Vapor Sampling Sites at the 218-W-4C Burial Ground.

(Modified from CP-13514)

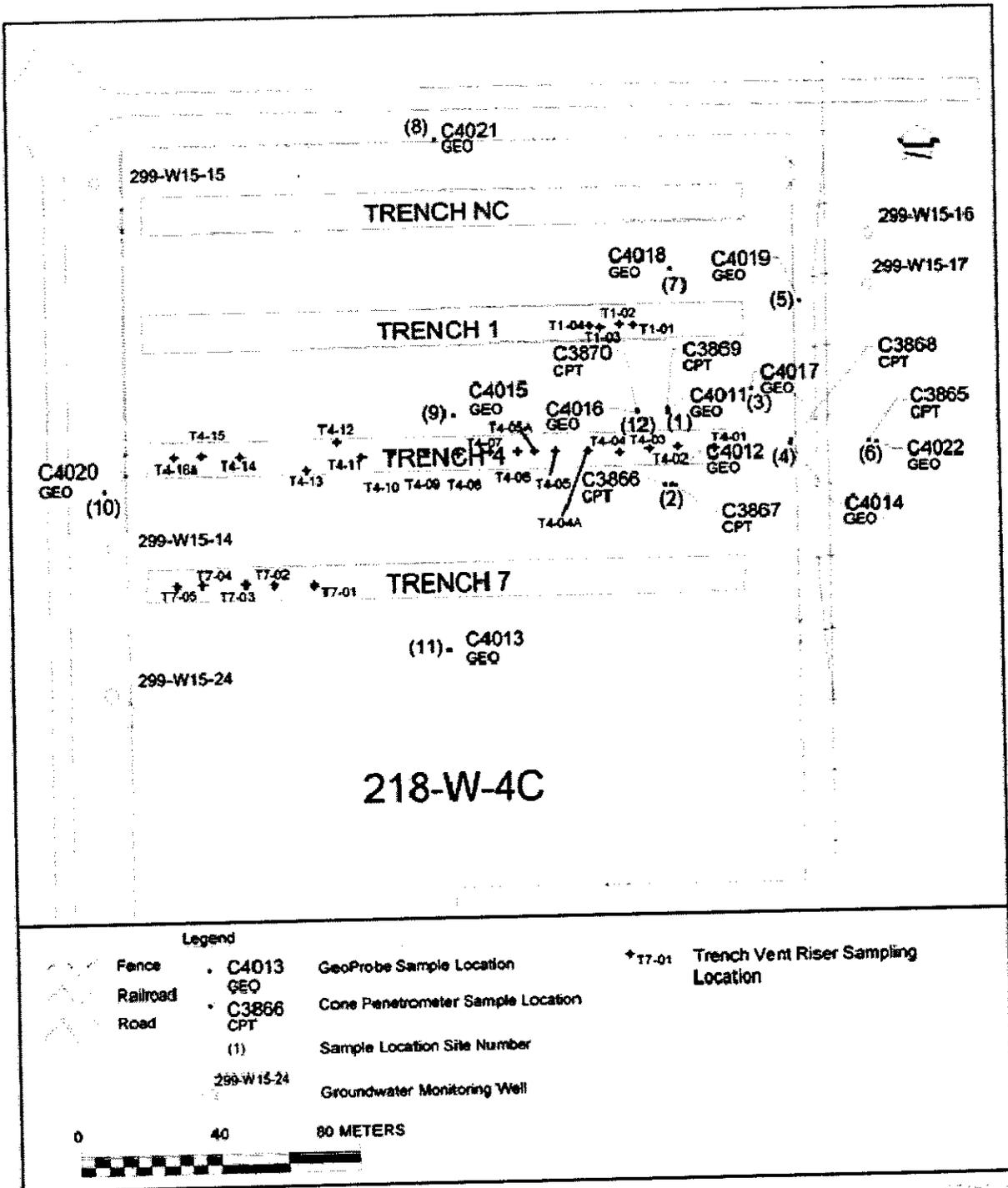


Figure 2-8. Step II Study Area for the Dispersed Carbon Tetrachloride Vadose Zone Plume Investigation.

(From PNNL-14187)

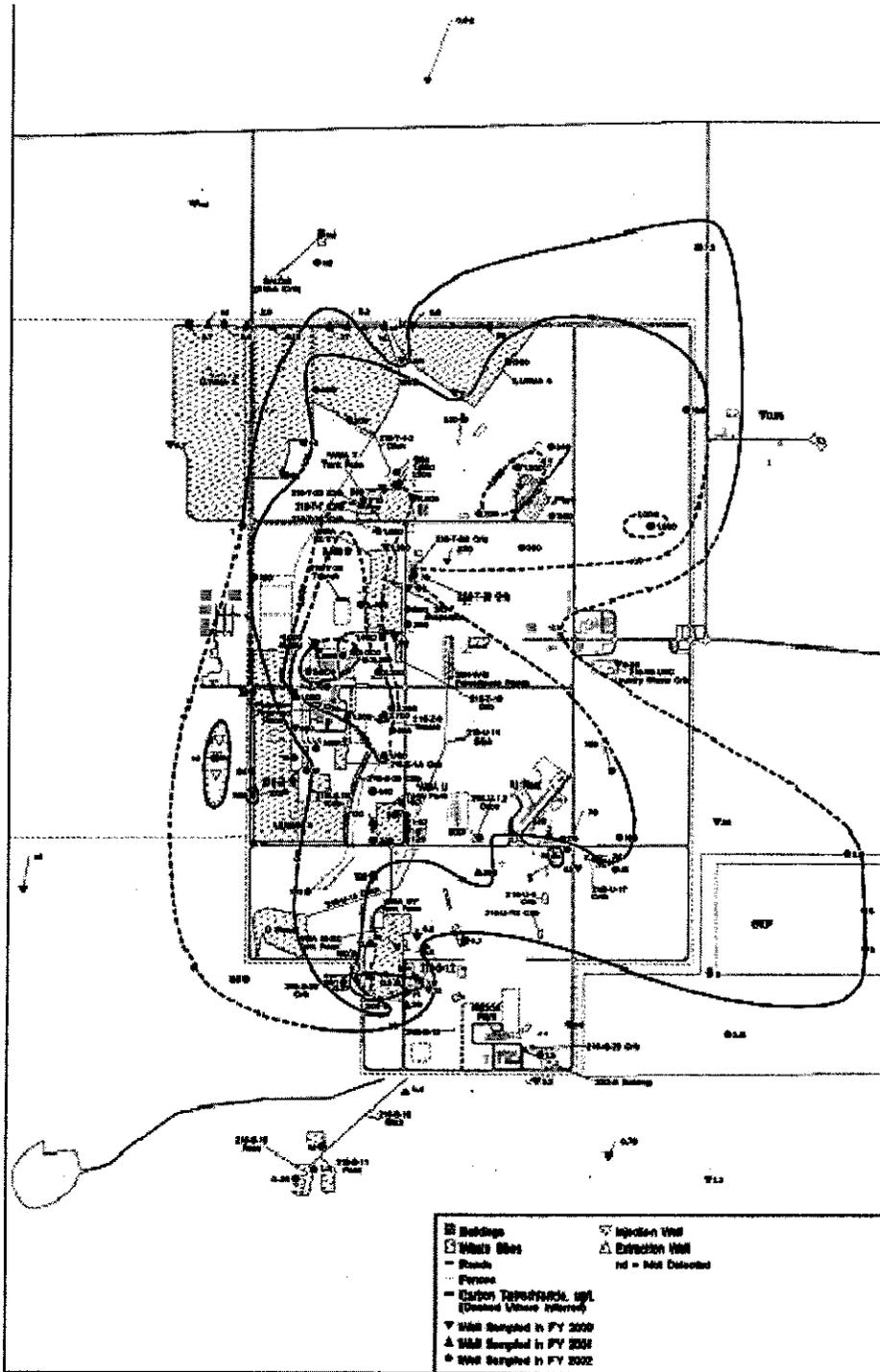


Figure 2-9. Step II Groundwater "Hot Spot" Sampling Areas.

(From DOE/RL-2001-01)

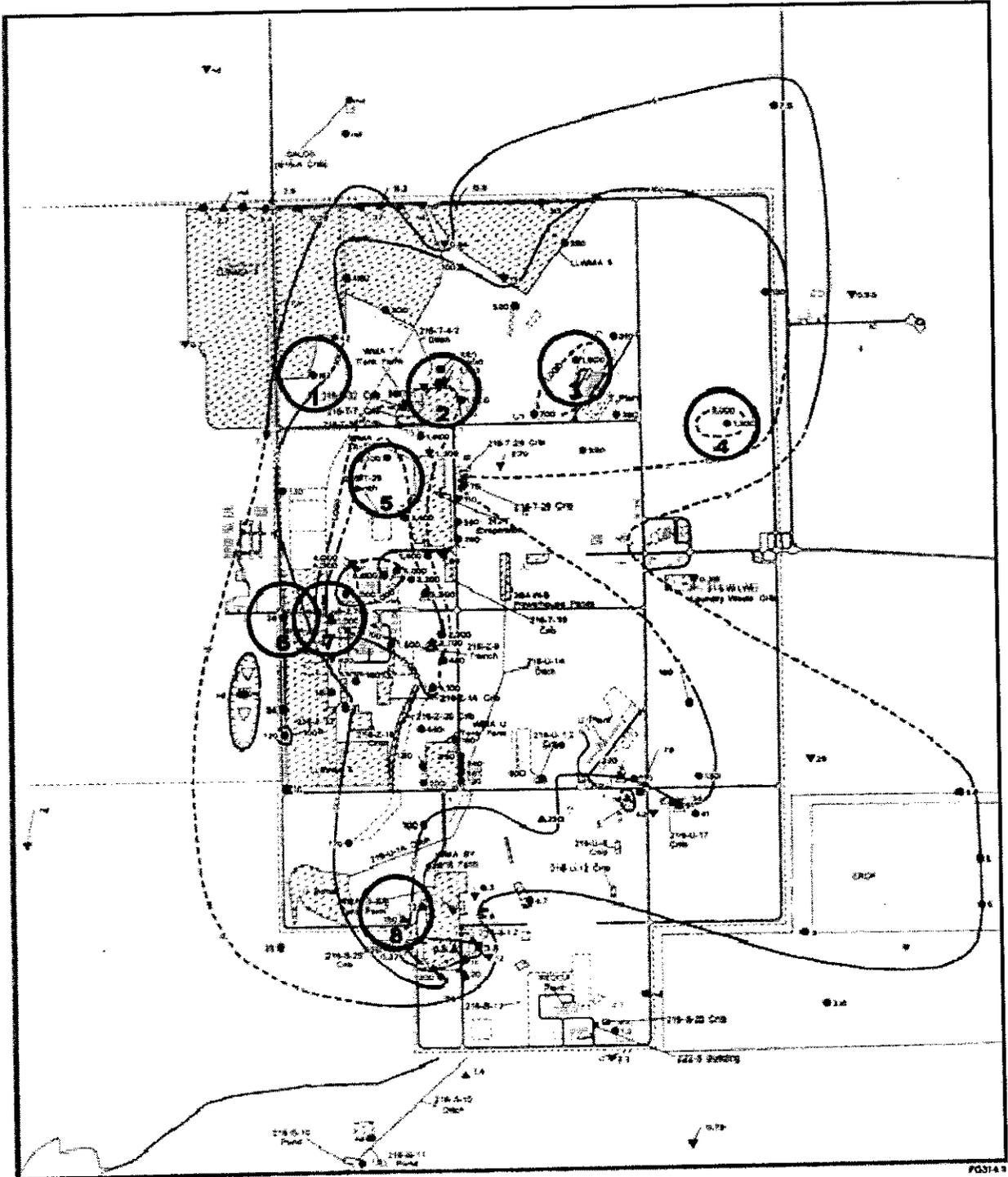


Figure 2-19. Subsurface Topography of a Layer Near the Top of the Hanford formation Sand-Dominated Unit (H2), Interpreted from the Cross-Well Seismic Survey at the 216-Z-9 Trench.

(Revised from DOE/RL-2006-58, Draft A)

Elevation in Feet

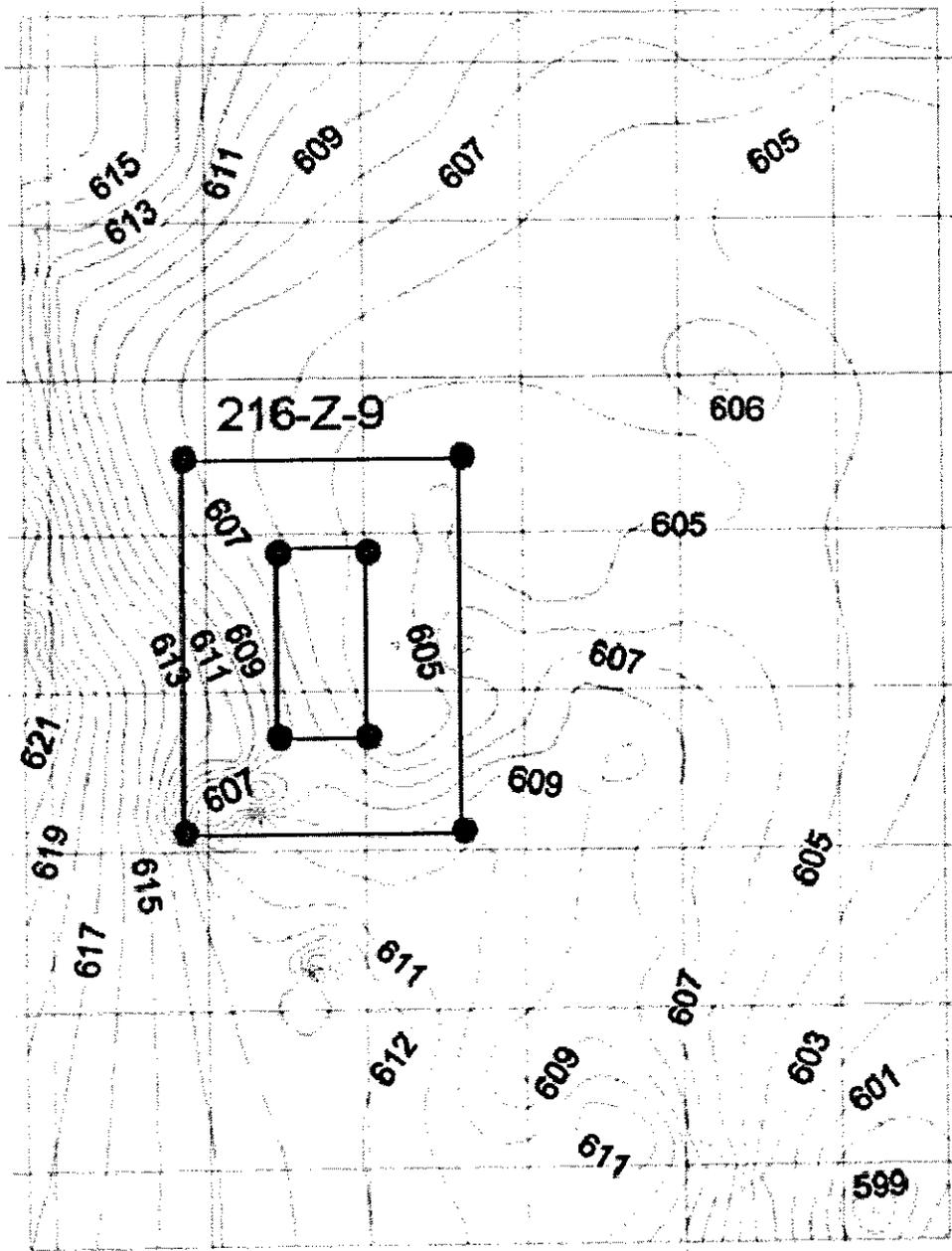


Figure 2-20. Subsurface Topography of a Layer near the Middle of the Hanford formation Sand-Dominated Unit (H2), Interpreted from the Cross-Well Seismic Survey at the 216-Z-9 Trench.

(Revised from DOE/RL-2006-58, Draft A)

Elevation in Feet

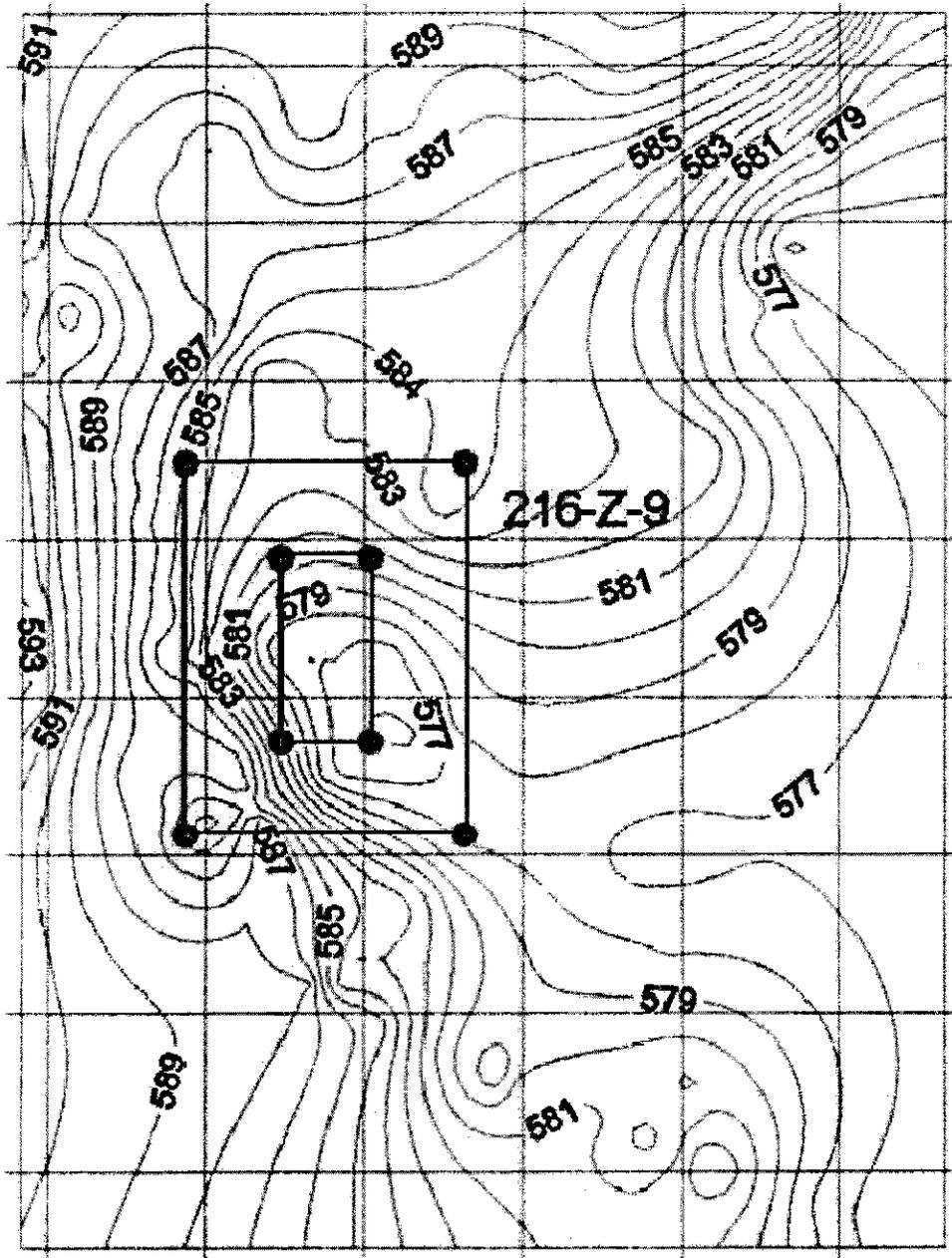


Figure 2-21. Subsurface Topography of the Top of the Cold Creek Unit Silt, Interpreted from the Cross-Well Seismic Survey at the 216-Z-9 Trench.

(Revised from DOE/RL-2006-58, Draft A)

Elevation in Feet

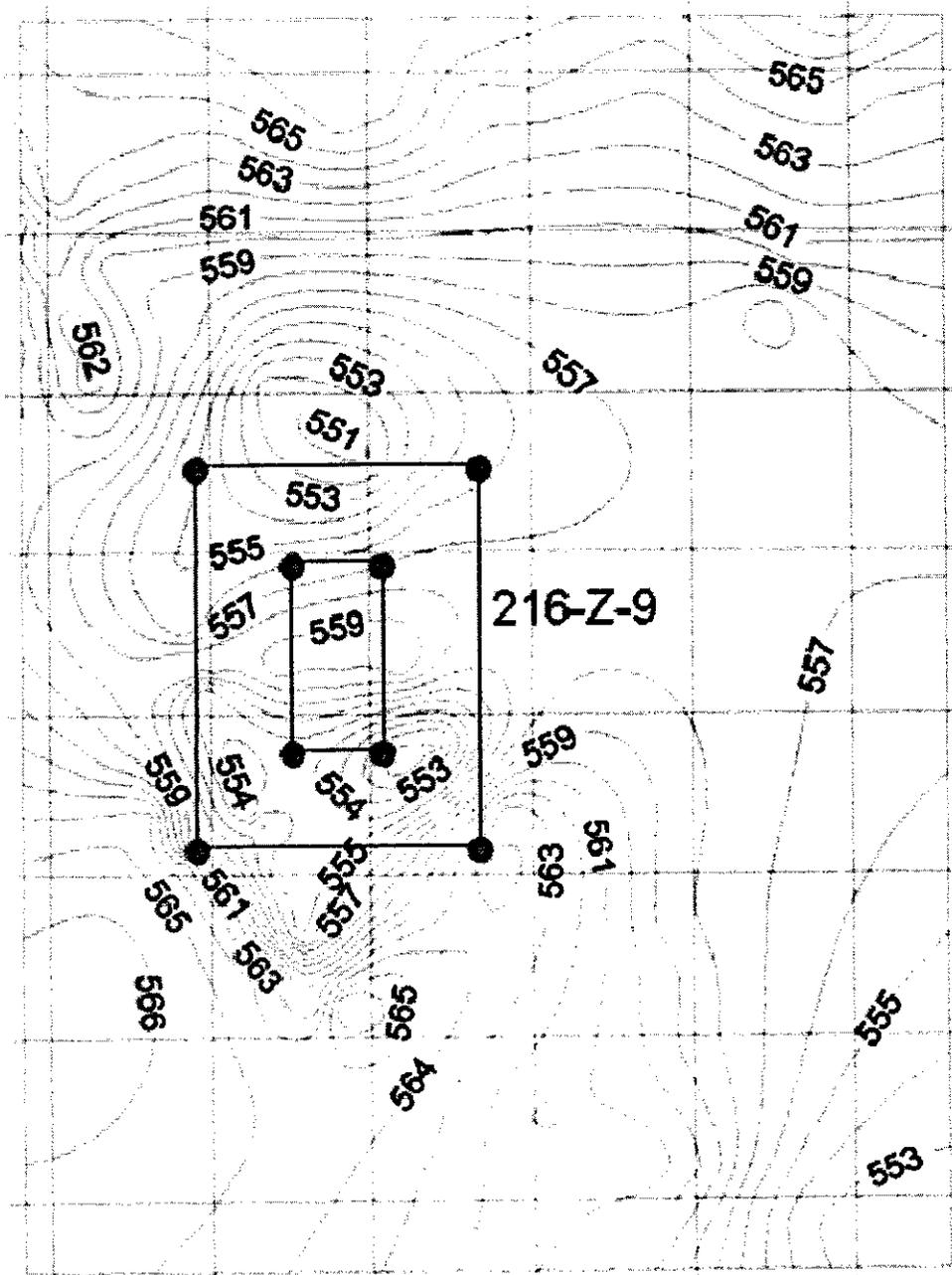


Figure 2-22. Subsurface Topography of the Top of the Ringold Formation, Interpreted from the Cross-Well Seismic Survey at the 216-Z-9 Trench.

(Revised from DOE/RL-2006-58, Draft A)

Elevation in Feet

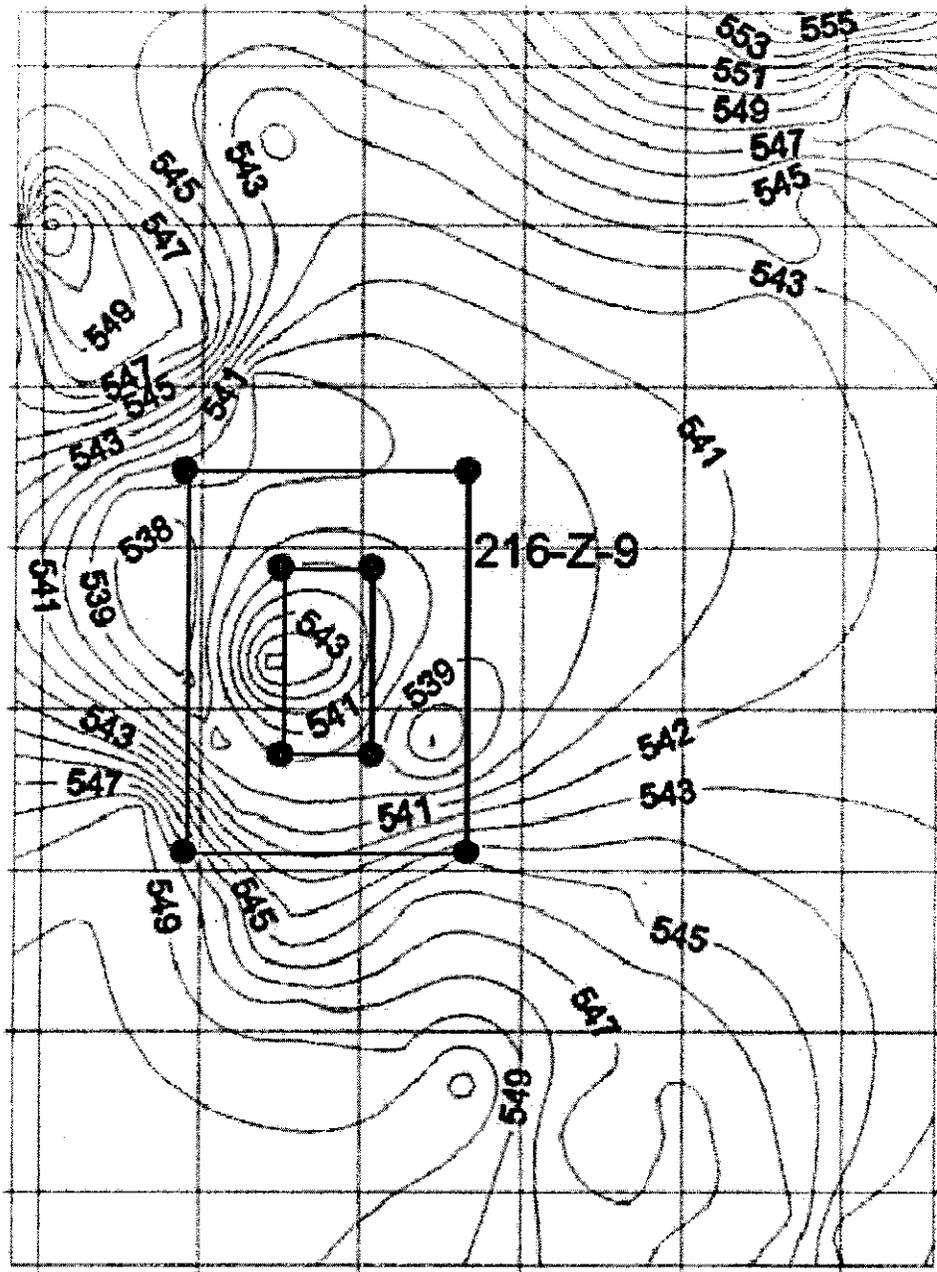
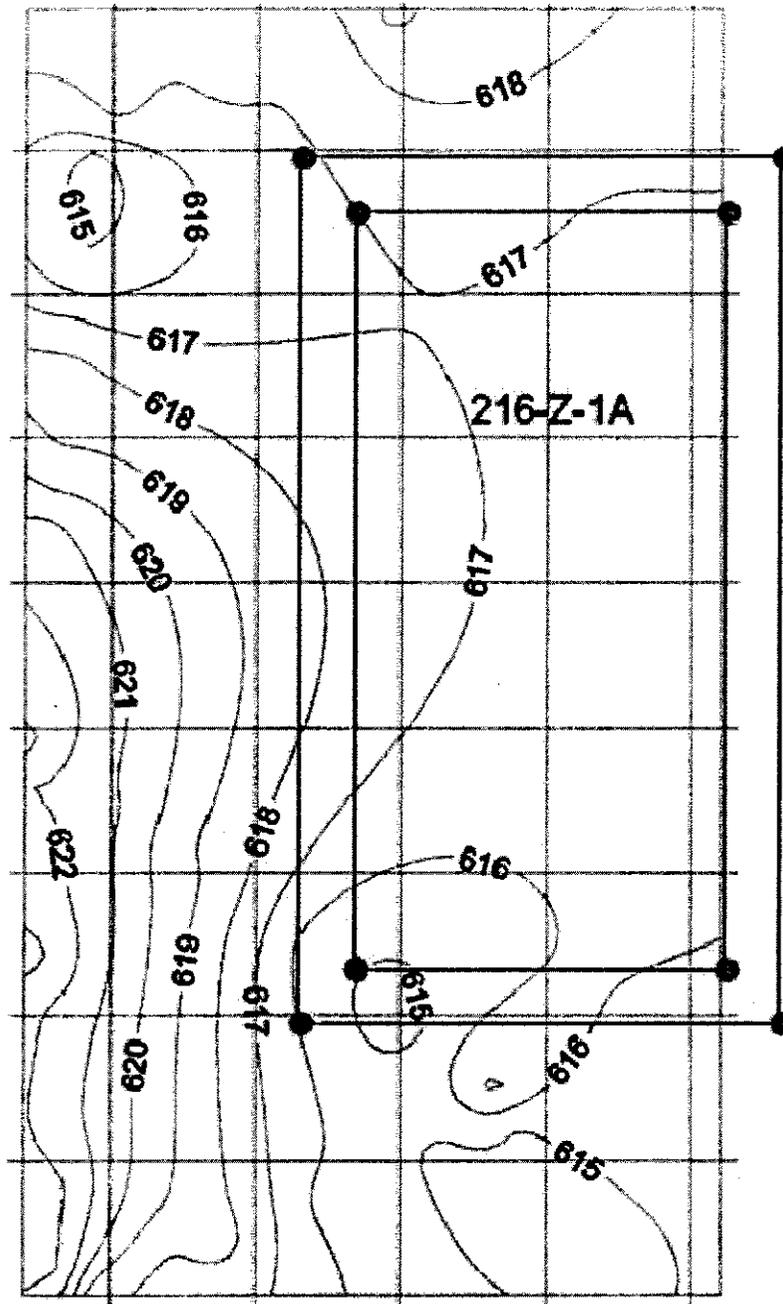


Figure 2-26. Subsurface Topography of a Layer near the Top of the Hanford formation Sand-Dominated Unit (H2), Interpreted from the Cross-Well Seismic Survey at the 216-Z-1A Tile Field.

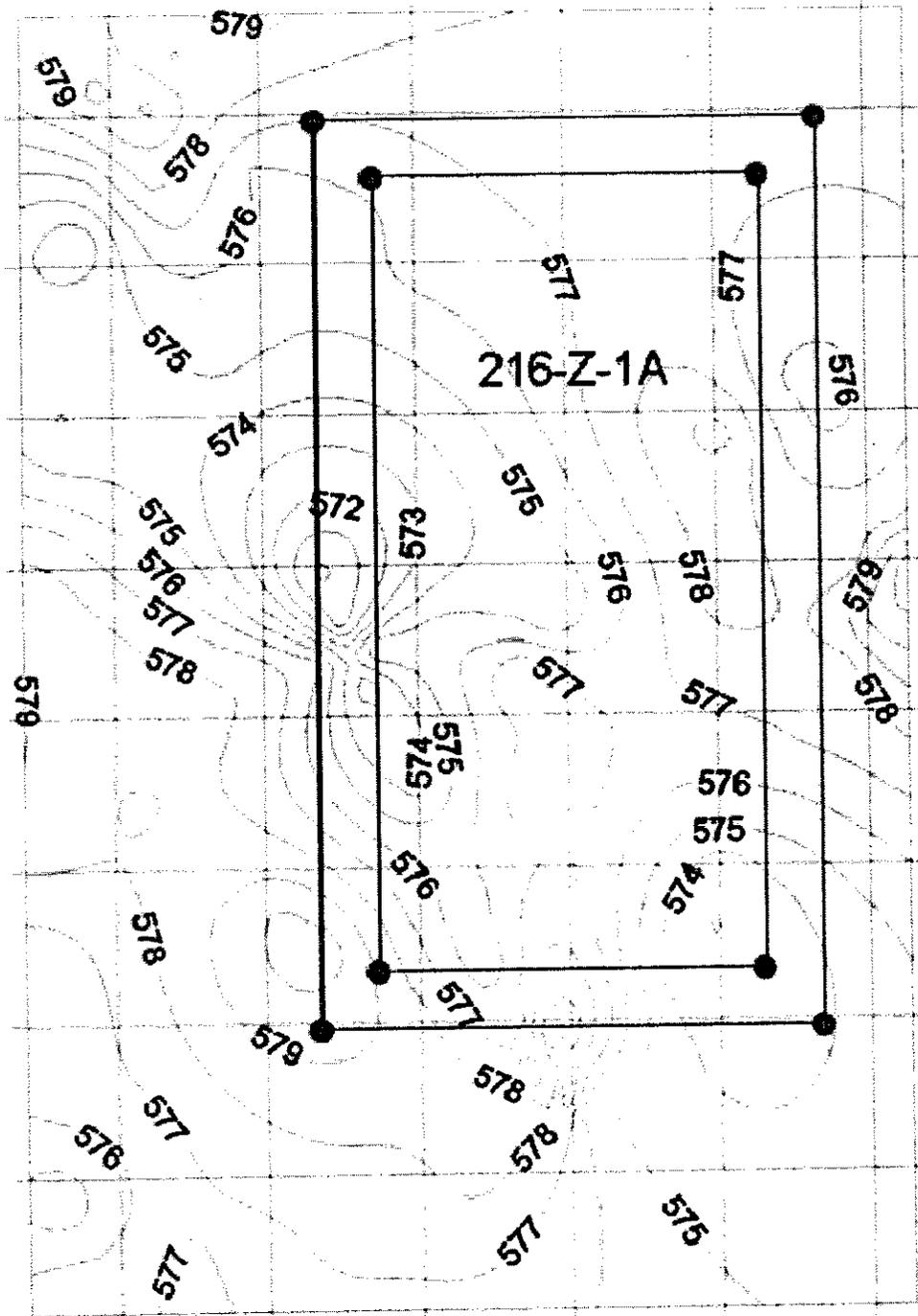
(Revised from DOE/RL-2006-58, Draft A)



Elevation in Feet. This shallow layer could not be fully imaged by the seismic profiles with large inter-well spacings, primarily along the east side of the tile field.

Figure 2-27. Subsurface Topography of the Top of the Hanford formation Gravel-Dominated Unit (H3), Interpreted from the Cross-Well Seismic Survey at the 216-Z-1A Tile Field.

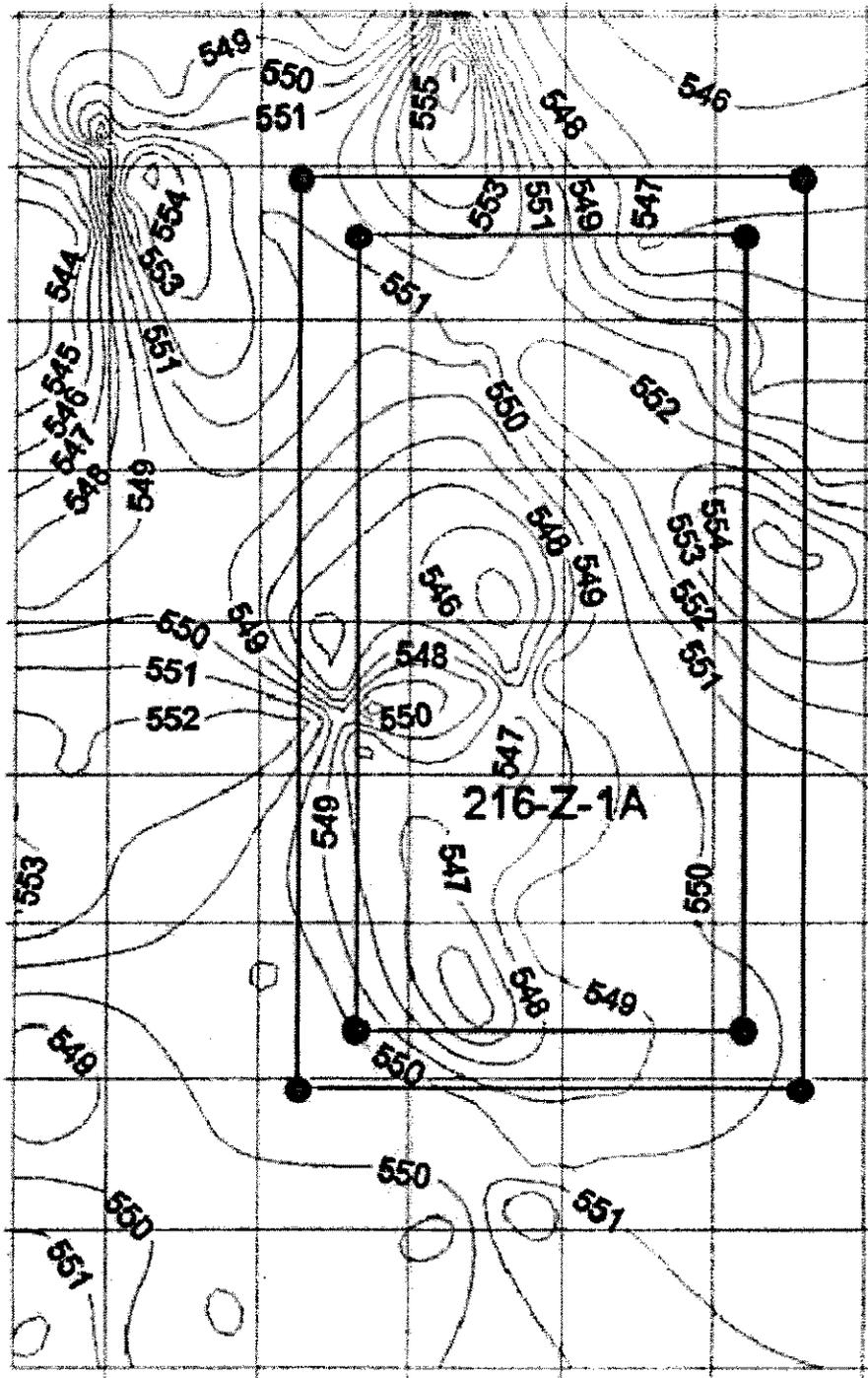
(Revised from DOE/RL-2006-58, Draft A)



Elevation in Feet

Figure 2-28. Subsurface Topography of the Top of the Cold Creek Unit Silt, Interpreted from the Cross-Well Seismic Survey at the 216-Z-1A Tile Field.

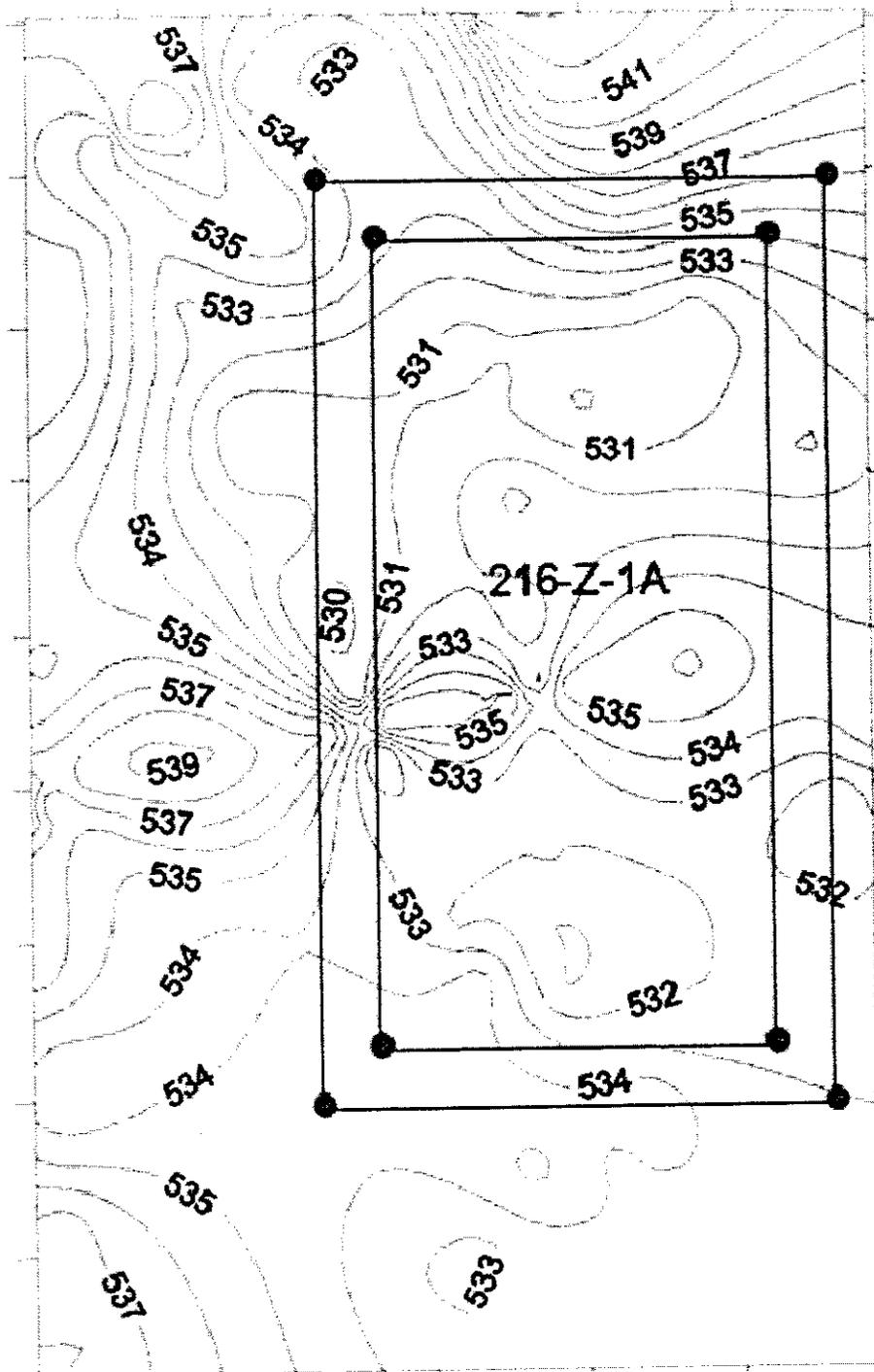
(Revised from DOE/RL-2006-58, Draft A)



Elevation in Feet

Figure 2-29. Subsurface Topography of the Top of the Ringold Formation, Interpreted from the Cross-Well Seismic Survey at the 216-Z-1A Tile Field.

(Revised from DOE/RL-2006-58, Draft A)



Elevation in Feet

Figure 2-30. Location of Enhanced Access Penetration System Boreholes for the Dispersed Carbon Tetrachloride Vadose Zone Plume Step II Investigation.

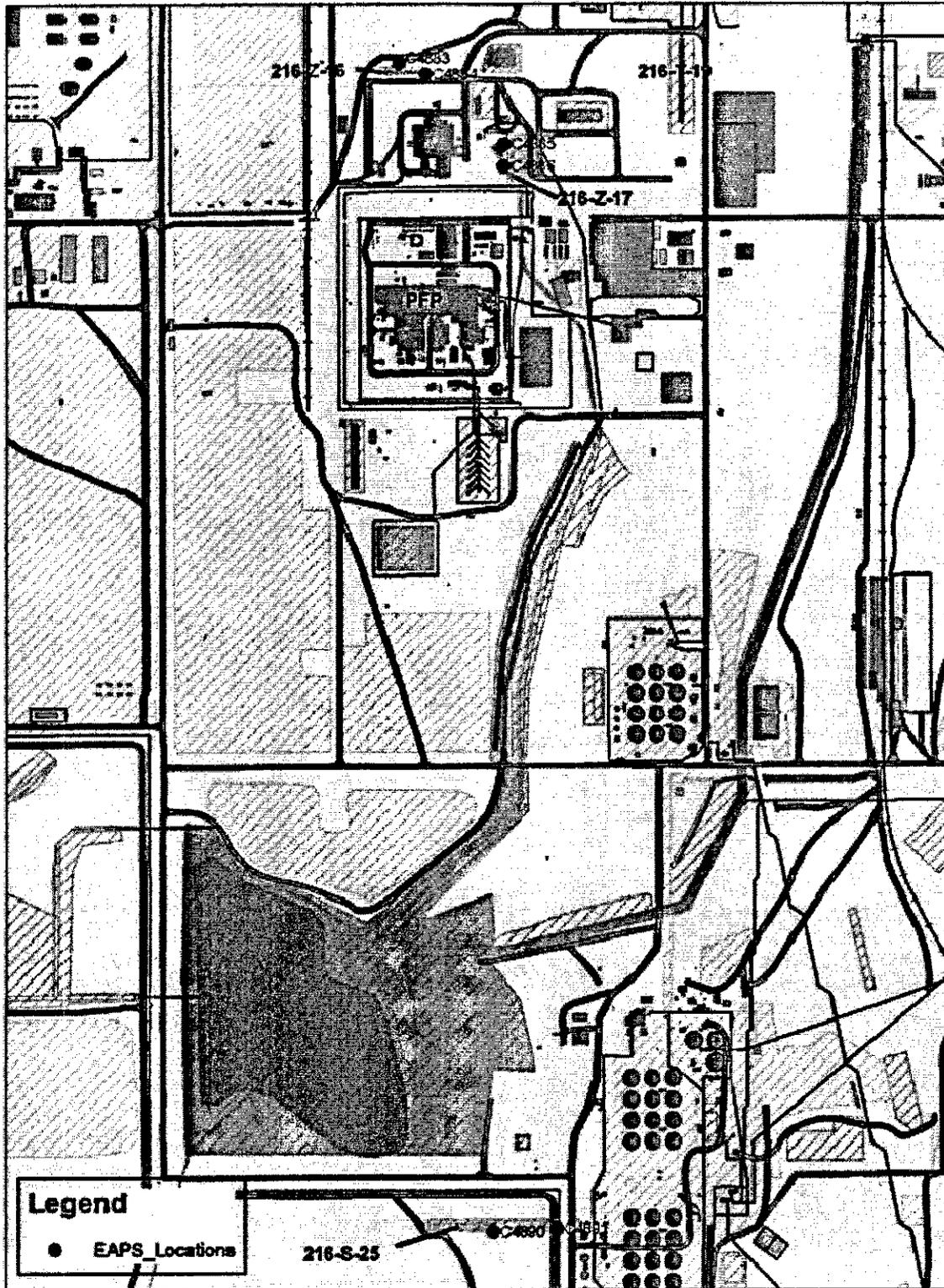


Figure 2-31. Soil Vapor Sampling Locations Within the Plutonium Finishing Plant Protected Area.

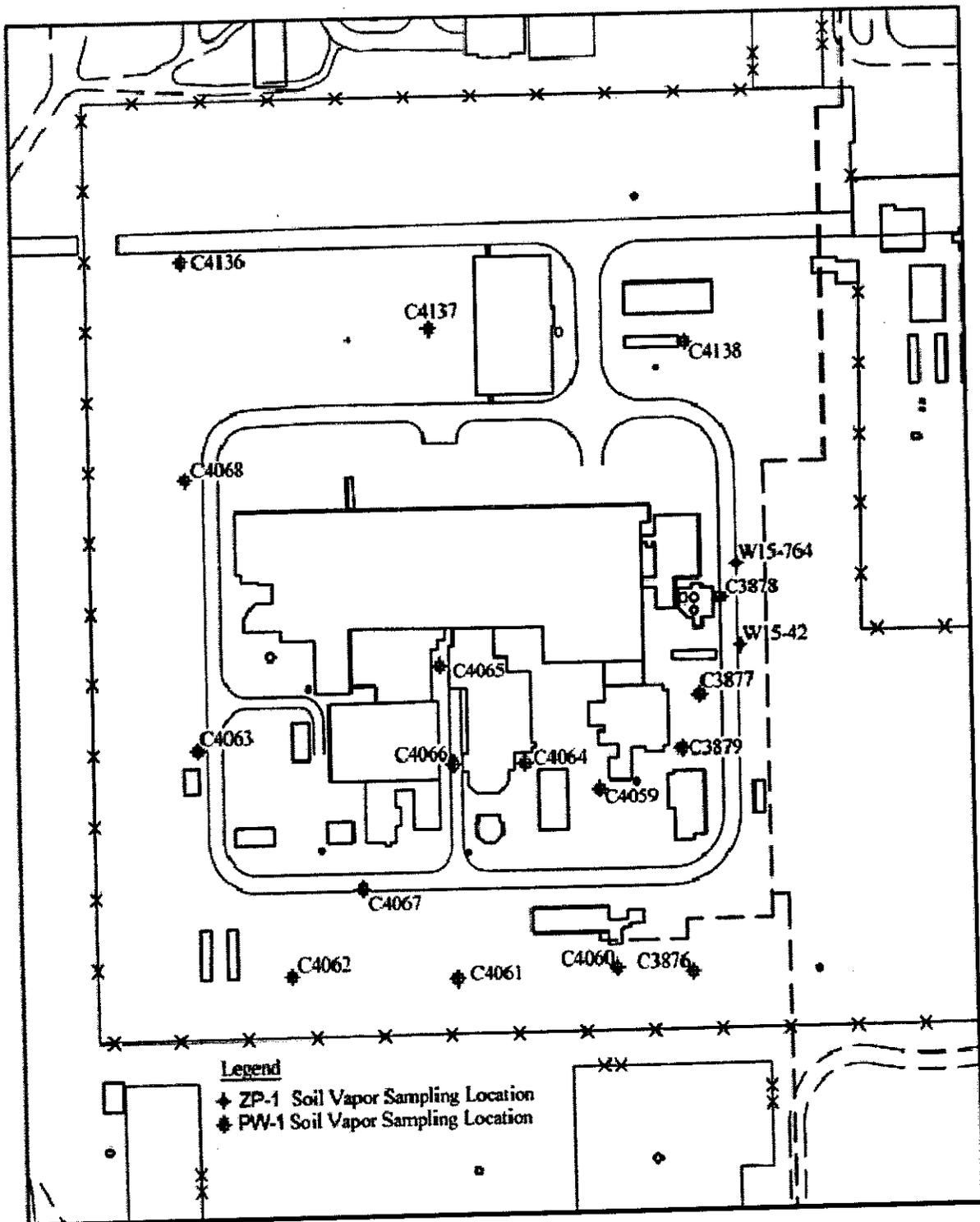
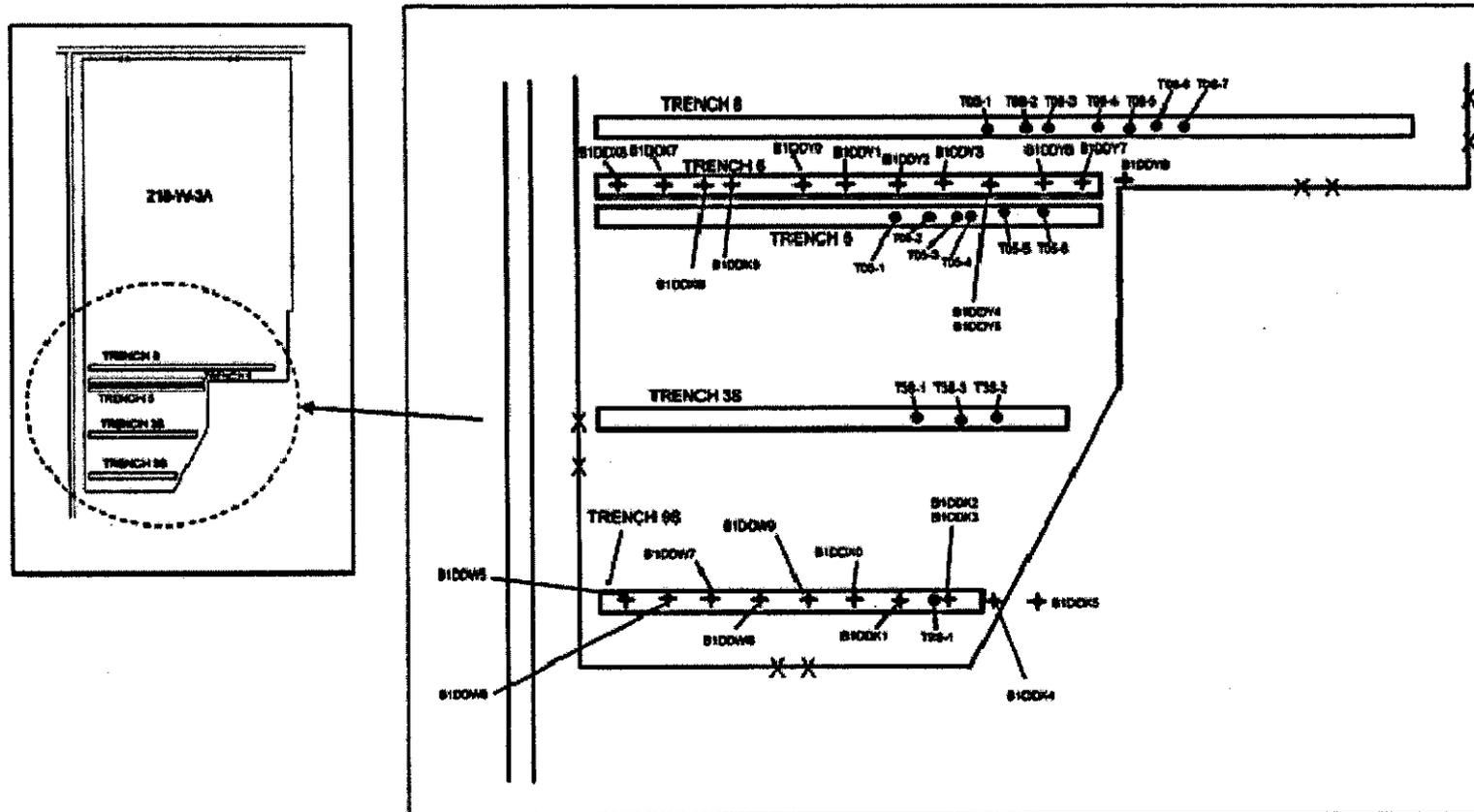
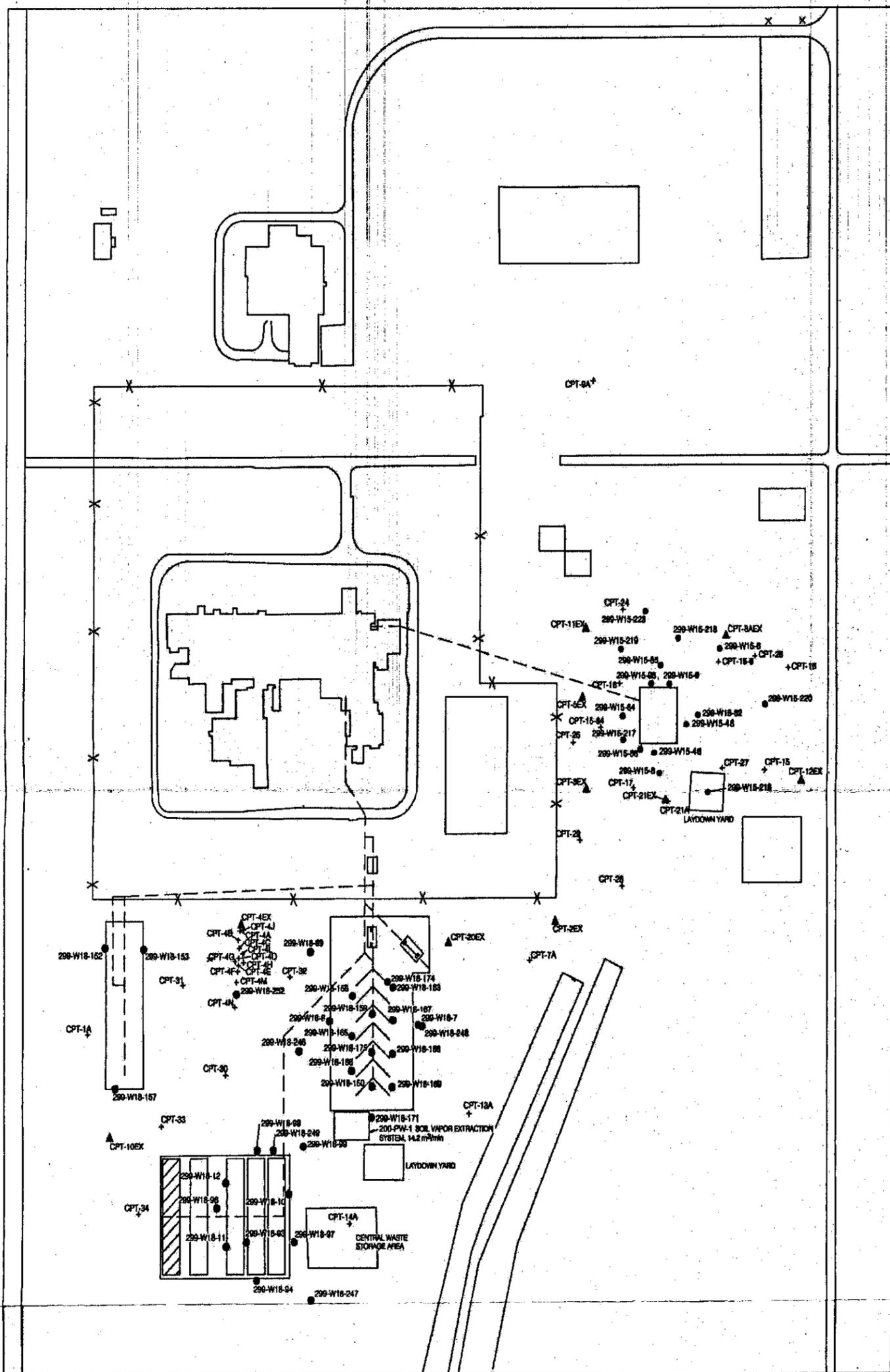


Figure 2-32. Vapor Sampling Locations at the 218-W-3A Burial Ground.





LEGEND

- + CPT-30 CONE PENETROMETER DEEP SOIL VAPOR PROBE (>2 m DEPTH) LOCATION AND NUMBER DESIGNATION
- ▲ CPT-EX CONE PENETROMETER SOIL VAPOR EXTRACTION WELL LOCATION AND NUMBER DESIGNATION
- 200-W15-02 200-PW-1 SOIL VAPOR EXTRACTION/MONITORING WELL LOCATION AND NUMBER DESIGNATION

FG1045.1

Figure 2-40. Map of Soil Vapor Extraction Well Locations.

Figure 2-41. Carbon Tetrachloride Vapor Trends in Soil Vapor Extraction Well 299-W15-218 at the 216-Z-9 Trench.

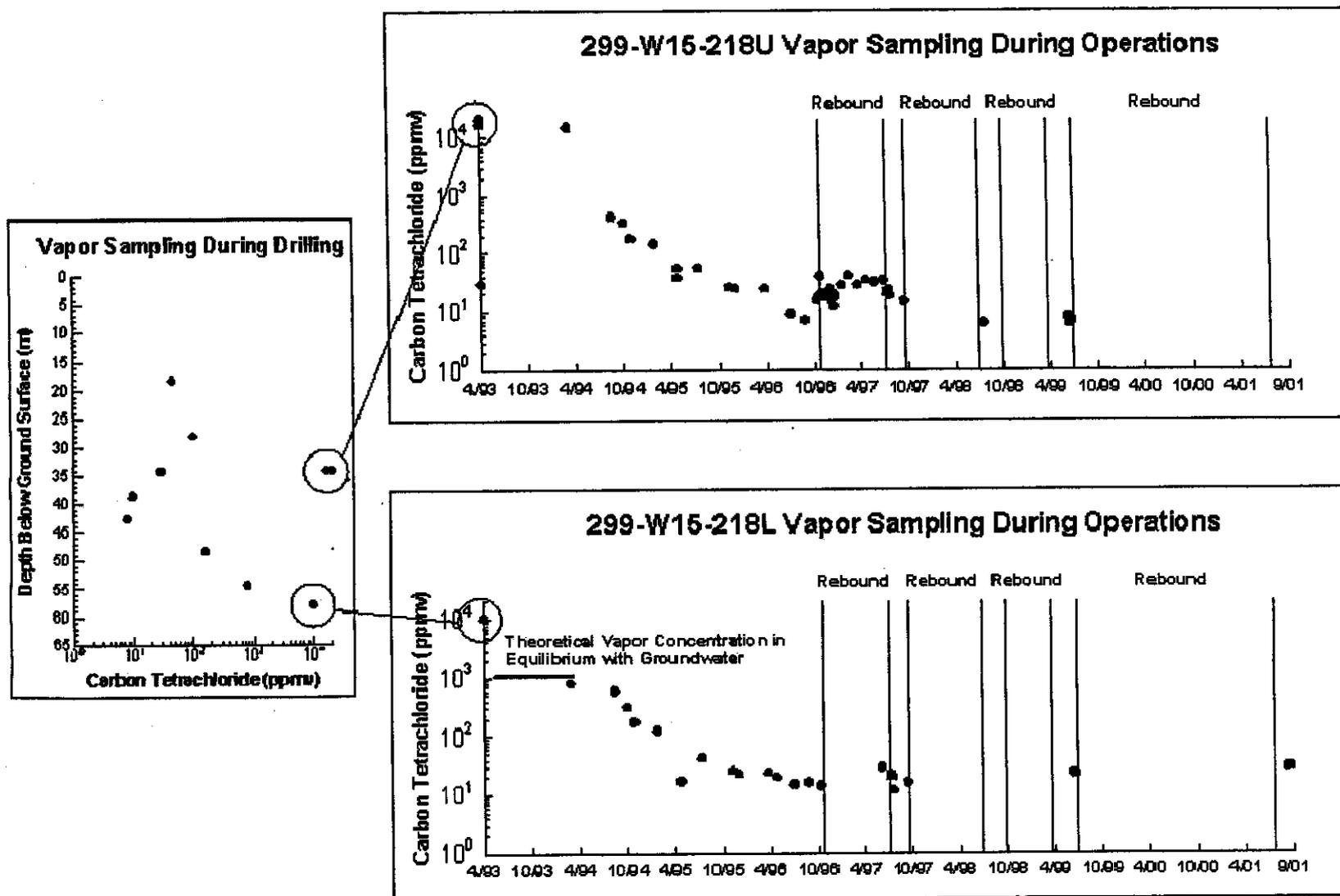


Table 2-1. Correlation Between Sample Depths in the Sampling and Analysis Plan and Modified Sample Depths in Slant Well 299-W15-48 (C3427), Based on New Information from Well 299-W15-46 (C3426) and the Cross-Well Seismic Reflection Survey. (3 Pages)

Sample Depth in SAP ^a (vertical feet)	Rationale in SAP	Actual Sample Depth at C3426 ^b (vertical feet)	Observations at C3426 ^b (vertical feet)	Sample Depth at C3427 ^c (vertical feet)
48 – 50.5 ft	Characterize the vadose zone for DNAPL at the depth that corresponds to the initial depth of elevated plutonium concentrations in well 299-W15-8 south of the 216-Z-9 Trench	47.5-49.5 ft; 49.5-52.0 ft (50.5-53.0 ft PNNL sample)	First alpha encountered from 47.5 to 49.5 ft; Interval with orange matrix from 49-49.5 ft	44.5 – 46.2 ft Soil Soil vapor
66.5 – 69 ft	Characterize the Hanford formation upper gravel sequence for 200-PW-1 Operable Unit COPCs as close as possible to the area underneath the footprint of the 216-Z-9 Trench		Hanford upper gravel sequence extends to 65 ft	56.8 – 58.0 ft (selected because this interval is base of Hanford gravel and therefore is as close as possible to area underneath footprint; and to ensure that the silt layer is not missed) Soil
69 – 71.5 ft	Characterize the contact between the Hanford formation upper gravel and sandy sequences for contaminant transport and evaluation of soil-vapor extraction interim action	63.5-66 ft	65-67 ft is silt layer between Hanford gravel sequence and Hanford sand sequence; sample interval has high CCl ₄ , TBP, PCE; 64.5 ft sample vial tests positive for DNAPL; cross well seismic suggests that top of silt is 60 ft bgs at C3427	59.4 – 61.1 ft (selected to encounter “64.5 ft” depth in an inner liner) Soil Soil vapor
Not identified in SAP				61.9 – 63.6 ft (selected to ensure that the silt layer is not missed) Soil (VOCs only and PNNL liner)
86 – 88.5 ft	Characterize the vadose zone for DNAPL within the Hanford formation sandy sequence to evaluate vertical distribution of contaminants	90.0-92.5 ft	Hanford sandy sequence extends from 67-108.5 ft; sample interval has high TBP; unknown clear liquid observed in field screening DNAPL vial	84.8 – 86.5 ft (selected to correspond to 90.0 ft sample in C3426) (selected for duplicate sample) Soil Soil vapor 87.3 – 89.0 ft (selected to ensure that clear liquid is not missed) Soil (VOCs, SVOCs only and PNNL liner)

Table 2-1. Correlation Between Sample Depths in the Sampling and Analysis Plan and Modified Sample Depths in Slant Well 299-W15-48 (C3427), Based on New Information from Well 299-W15-46 (C3426) and the Cross-Well Seismic Reflection Survey. (3 Pages)

Sample Depth in SAP ^a (vertical feet)	Rationale in SAP	Actual Sample Depth at C3426 ^b (vertical feet)	Observations at C3426 ^b (vertical feet)	Sample Depth at C3427 ^c (vertical feet)
99.5 – 102 ft	Characterize the vadose zone near the top of the Cold Creek unit, a zone of potential perching, for contaminant transport and evaluation of soil-vapor extraction interim action	107.0-109.5 PNNL sample)		
102.5 – 105 ft	Characterize the Hanford formation sandy sequence for 200-PW-1 Operable Unit COPCs near the contact with the Cold Creek unit, a zone of potential perching		Cold Creek unit top is at 108.5 ft in C3426; Cold Creek unit top is predicted to be at 103 ft in C3427	100.5-102.2 ft (selected to characterize Hanford sandy sequence above Cold Creek unit) Soil Soil vapor
106 – 108.5 ft	Characterize the Cold Creek unit silt, a potential zone of sorption, for DNAPL	110.0-112.5	Cold Creek unit silt is from 108.5-116.5 ft	103.9-105.6 ft (selected to characterize top of silt) Soil Soil vapor 109.0-110.7 ft (selected to characterize bottom of silt) Soil (VOCs only and PNNL liner) Soil vapor
111 – 113.5 ft	Characterize the Cold Creek unit silt/carbonate contact for contaminant transport and evaluation of soil-vapor extraction interim action	(115.0-117.5 PNNL sample; 1 liner for 200-PW-1 Operable Unit) 117.0-119.5 ft	Cold Creek unit carbonate is from 116.5-118.0 ft; black crumbly layer from 118.0-118.5 ft	
115 – 117.5 ft	Characterize the Cold Creek unit silt/carbonate contact for DNAPL		Cold Creek unit silt/carbonate contact is at 116.5 ft	111.5-112.8 ft (selected to include the silt/carbonate contact and bottom of the Cold Creek unit)
117.5 – 120 ft	Characterize the bottom of the Cold Creek unit for 200-PW-1 Operable Unit COPCs; evaluate contaminant gradients within the Cold Creek unit			Soil Soil vapor

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Table 2-1. Correlation Between Sample Depths in the Sampling and Analysis Plan and Modified Sample Depths in Slant Well 299-W15-48 (C3427), Based on New Information from Well 299-W15-46 (C3426) and the Cross-Well Seismic Reflection Survey. (3 Pages)

Sample Depth in SAP ^a (vertical feet)	Rationale in SAP	Actual Sample Depth at C3426 ^b (vertical feet)	Observations at C3426 ^b (vertical feet)	Sample Depth at C3427 ^c (vertical feet)
120.5 – 123 ft	Characterize the contact between the Cold Creek unit and the Ringold Formation for DNAPL	119.0-121.5 ft		114.5-118.7 ft (selected to include the Cold Creek unit / Ringold contact) (selected for split sample) Soil Soil vapor
123.5 – 126 ft	Characterize the top of the Ringold Formation for contaminant transport and evaluation of soil-vapor extraction interim action; evaluate gradient through the Cold Creek unit.	(122.0-124.5 PNNL sample)	Ringold starts at 118.5 ft	114.5-118.7 ft (selected to characterize the top of the Ringold) Soil (VOCs only and PNNL liner) Soil vapor

^a Depth does not account for 4 ft of fill added at Borehole C3426 before drilling began.

^b Depth does account for 4 ft of fill added at Borehole C3426 before drilling began.

^c Ground surface at Borehole C3427 is 4.5 ft lower than the ground surface at Borehole C3426.

DOE/RL-2001-01, *Plutonium/Organic-Rich Process Condensate/Process Waste Group Operable Unit RI/FS Work Plan: Includes the 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units*.

COPC = contaminant of potential concern.

DNAPL = dense, nonaqueous-phase liquid.

PCE = tetrachloroethylene.

PNNL = Pacific Northwest National Laboratory.

SAP = sampling and analysis plan (DOE/RL-2001-01, Appendix B).

SVOC = semivolatile organic compound.

TBP = tributyl phosphate.

VOC = volatile organic compound.

Table 2-2. Step I Sampling Design to Investigate Potential Carbon Tetrachloride Release Modes.

Potential Release Mode	Step I Sampling Design
Carbon tetrachloride drum storage releases	<i>PFF facility area (drum storage releases, PFP process releases, PFP piping and drain leaks, liquid discharge pipeline leaks, liquid waste discharges)</i> Shallow soil vapor sampling using a systematic grid within the PFP facility area ^a . Deeper soil vapor sampling at shallow concentration hot spots and at known drum storage areas.
Z Plant complex process releases	
Z Plant complex piping and drain leaks	
Discharge pipeline leaks	
Deliberate discharges to engineered liquid waste sites	
Z Plant complex heating, ventilation, and air conditioning releases	<i>PFF heating, ventilation, and air conditioning condensate waste sites</i> Soil vapor sampling at selected locations at the french drains, ponds, and ditches that received heating, ventilation, and air conditioning condensate.
Discharge pipeline leaks	<i>Soils adjacent to liquid discharge pipelines</i> Soil vapor sampling at predetermined spacing adjacent to pipeline pathways outside of the PFP facility area.
Deliberate discharges to engineered liquid waste sites	<i>Liquid waste discharge sites</i> Soil vapor sampling at selected locations at liquid waste discharge sites that received carbon tetrachloride wastes.
Burial ground releases from waste containing carbon tetrachloride	<i>Burial grounds</i> Vapor sampling at burial ground vent risers. Deeper soil vapor sampling adjacent to burial ground trenches, including near vapor hot spots identified by vent riser sampling.

^a The 12/19/02 supplement to the SAP in DOE/RL-2001-01, Appendix C, changed the shallow soil vapor sampling locations from a systematic grid to locations identified by professional judgment because of safety concerns.

PFP = Plutonium Finishing Plant.

Table 2-3. Step II Sampling Design and Discussion Location in this Remedial Investigation I Report. (7 Pages)

Sample Collection Methodology	Key Features of Design ^a	Basis for Sampling Design
Release Sites		
<p>Sampling using direct-push technology and/or passive, sorbent soil vapor collectors to evaluate lateral extent of dispersed carbon tetrachloride vadose zone plumes at the 216-Z-9 Trench, 216-Z-1A Tile Field, and 216-Z-18 Crib.</p> <p>Investigation activities are described in Section 2.4.2.1 and the results are described in Section 3.2.4.1.</p>	<p>Use a direct-push technology to collect soil vapor samples to the north, south, and east of the 216-Z-9 Trench. Starting near the trench boundary, collect samples at approximately 15.2 m (50-ft) intervals, moving progressively farther from the trench. At a minimum, continue until the sampling locations are at least 225 m (750 ft) away from the 216-Z-9 Trench. Continue sampling until carbon tetrachloride concentrations are below detection. At a maximum, continue until the sampling locations are 300 m (1,000 ft) away from the trench.</p> <p>At each sampling location, collect samples from depths of 4.6 m and 7.6 m (15 and 25 ft) below ground surface. Continue sampling at 7.6 m (25 ft) depth intervals until reaching 38.1 m (125 ft) below ground surface or until the direct push technology cannot advance deeper into the subsurface (i.e., refusal).</p> <p>Analyze soil vapor samples for VOCs using field-screening instrument.</p> <p>Passive, sorbent soil vapor collectors may be used instead of, or in addition to, the direct-push technology to characterize the soil vapor plume.</p> <p>During recent drilling of a vertical well on the south side of the 216-Z-9 Trench as part of the DNAPL investigation, a silt layer was identified from 19.8 to 20.4 m (65 to 67 ft) bgs. This silt layer appears to be associated with relatively high carbon tetrachloride vapor concentrations and the potential presence of DNAPL. The lateral distribution of the silt layer in the vicinity of the 216-Z-9 Trench will be investigated as an area of focus for the dispersed plume.</p> <p>Sampling in the vicinities of the 216-Z-1A Tile Field and 216-Z-18 Crib will be considered as the second phase of this task. If the results of the 216-Z-9 Trench sampling indicate that this sampling design should be modified, those proposed changes will be discussed with EPA.</p>	<p>This characterization will be conducted in the vicinities of the primary carbon tetrachloride disposal sites to evaluate lateral migration beyond the waste site boundaries. As part of airflow modeling of soil vapor extraction operations at the 216-Z-9 Trench, the applied vacuum in the Hanford sand was calculated to extend approximately 80 m to 140 m (260 to 460 ft) beyond the trench boundaries for different configurations of on-line wells (BHI-00882). Therefore, sampling at the 216-Z-9 Trench will continue to distances at least 225 m (750 ft) beyond the trench boundaries. The vertical sampling scheme is consistent with the Step I sampling (DOE/RL-2001-01, Appendix C).</p> <p>The Enhanced Access Penetration System will be considered for investigating the silt layer at the 216-Z-9 Trench.</p> <p>Sampling at the 216-Z-1A Tile Field and 216-Z-18 Crib will be considered using a similar strategy.</p>

Table 2-3. Step II Sampling Design and Discussion Location in this Remedial Investigation I Report. (7 Pages)

Sample Collection Methodology	Key Features of Design ¹	Basis for Sampling Design
<p>Sampling using direct-push technology to evaluate potential accumulation areas at the 216-Z-9 Trench, 216-Z-1A Tile Field, and 216-Z-18 Crib. Investigation activities are described in Section 2.4.2.2 and the results are described in Section 3.2.4.2.</p>	<ol style="list-style-type: none"> 1. Develop Cold Creek unit topographic maps in the area surrounding the three primary carbon tetrachloride waste sites using technologies such as seismic response, barometric pressure response, and/or geophysical logging of existing boreholes. 2. Collect soil vapor samples above and within the Cold Creek unit low points and/or breakthrough locations using direct-push technology for confirmation of potential DNAPL or source presence. 3. Collect soil vapor samples above and within the Cold Creek unit at the locations northwest and southwest of the 216-Z-9 Trench where an anomaly that potentially could indicate DNAPL was identified during the seismic reflection survey in 1999. <p>At each sampling location, collect samples from depths of 4.6 m and 7.6 m (15 and 25 ft) below ground surface. Continue sampling at 7.6 m (25 ft) depth intervals until reaching 38.1 m (125 ft) below ground surface or until the direct push technology cannot advance deeper into the subsurface (i.e., refusal).</p> <p>Analyze soil vapor samples for VOCs using field-screening instrument.</p>	<p>This characterization will be conducted near the 216-Z-9 Trench, 216-Z-1A Tile Field, and 216-Z-18 Crib waste sites to evaluate lateral migration beyond the waste site boundaries. The results will be used to identify low points in the formation that could be source or DNAPL accumulation points. This information will support deep vadose zone investigations for source or DNAPL effects on groundwater.</p>
<p>Sampling using direct-push technology adjacent to the 216-T-19 Crib, 216-Z-Ditches, 216-Z-7 Crib, 216-Z-12 Crib, 216-Z-16 Crib, and 216-Z-17 Trench liquid waste discharge sites. Investigation activities are described in Section 2.4.2.3 and the results are described in Section 3.2.4.3.</p>	<p>Collect and analyze soil vapor samples above, within, and below the Cold Creek unit. At each sampling location, collect samples from depths of 4.6 and 7.6 m (15 and 25 ft) below ground surface. Continue sampling at 7.6 m (25 ft) depth intervals until reaching groundwater at approximately 69 m (225 ft) below ground surface or until the direct push technology cannot advance deeper into the subsurface (i.e., refusal).</p> <p>Analyze soil vapor samples for VOCs using field-screening instrument.</p>	<p>Data collected at these release sites during Step I did not extend through the upper vadose zone. Data are needed during Step II in the deep vadose zone. If possible, soil and soil vapor sampling conducted during drilling of a borehole planned for the 216-Z-7 Crib as part of the 200-LW-2 OU remedial investigation (DOE/RL-2001-66) may be used to collect soil vapor and soil sampling data at that site instead of the DPT methods specified in this sampling design.</p>

Table 2-3. Step II Sampling Design and Discussion Location in this Remedial Investigation I Report. (7 Pages)

Sample Collection Methodology	Key Features of Design*	Basis for Sampling Design
<p>Contingency soil sampling at the 216-T-19 Crib, 216-Z-Ditches, 216-Z-7 Crib, 216-Z-12 Crib, 216-Z-16 Crib, and 216-Z-17 Trench liquid waste discharge sites.</p> <p>No soil sampling was conducted since vapor concentrations did not exceed 1,200 ppmv – see Section 3.2.4.3.</p>	<p>If feasible, collect and analyze soil samples at locations with carbon tetrachloride vapor concentrations exceeding 12,000 ppmv to evaluate the presence of DNAPL. Analyze the soil samples for the COPC, COIs, and physical properties identified in the Work Plan (DOE/RL-2001-01, Appendix D).</p> <p>If feasible, collect and analyze soil samples at locations with carbon tetrachloride vapor concentrations exceeding 1,200 p/mv to evaluate the presence of a nearby carbon tetrachloride source. Analyze the soil samples for carbon tetrachloride.</p>	<p>If possible, a direct-push technology with soil sampling capability (e.g., wireline cone penetrometer, Enhanced Access Penetration System) will be used to collect soil samples.</p> <p>The concentration of 12,000 ppmv is 10 percent of the concentration of saturated carbon tetrachloride vapor.</p>
<p>Sampling using direct-push technology at Trench 4 in the 218-W-4C Burial Ground.</p> <p>No Sampling was conducted.</p> <p>Investigation activities are described in Section 2.4.2.4.</p>	<p>Collect and analyze soil vapor samples above, within, and below the Cold Creek unit in the vadose zone adjacent to vent riser T4-04. Sample to both the north and south sides of Trench T-04. If possible, sample soil vapor directly under Trench 4. At each sampling location, collect samples from depths of 4.6 m and 7.6 m (15 and 25 ft) below ground surface. Continue sampling at 7.6 m (25 ft) depth intervals until reaching 69 m (225 ft) below ground surface or until the direct push technology cannot advance deeper into the subsurface (i.e., refusal).</p> <p>Analyze soil vapor samples for VOCs using field-screening instrument.</p> <p>Coordination is needed with the 218-W-4C Burial Ground waste retrieval project.</p>	<p>Data collected near the hot spot in Trench 4 at the 218-W-4C Burial Ground did not extend through the upper vadose zone.</p>
<p>Contingency soil sampling at Trench 4 in the 218-W-4C Burial Ground.</p> <p>No soil sampling was conducted since no further investigation was required at this site – see Section 2.4.2.4.</p>	<p>If feasible, collect and analyze soil samples at locations with carbon tetrachloride vapor concentrations exceeding 12,000 p/mv to evaluate the presence of DNAPL. Analyze the soil samples for the COPC, COIs, and physical properties identified in the Work Plan (DOE/RL-2001-01, Appendix D).</p> <p>If feasible, collect and analyze soil samples at locations with carbon tetrachloride vapor concentrations exceeding 1,200 ppmv to evaluate the presence of a nearby carbon tetrachloride source. Analyze the soil samples for carbon tetrachloride.</p>	<p>If possible, a DPT with soil sampling capability (e.g., wireline cone penetrometer, Enhanced Access Penetration System) will be used to collect soil samples.</p> <p>The concentration of 12,000 ppmv is 10 percent of the concentration of saturated carbon tetrachloride vapor.</p>

Table 2-3. Step II Sampling Design and Discussion Location in this Remedial Investigation I Report. (7 Pages)

Sample Collection Methodology	Key Features of Design ^a	Basis for Sampling Design
<p>Potential sampling using direct-push technology at Plutonium Finishing Plant Protected Area suspect release sites.</p> <p>Investigation activities are described in Section 2.4.2.5 and the results are described in Section 3.2.4.4.</p>	<p>Evaluate FY03 Step I characterization results for Step II characterization requirements.</p>	<p>Carbon tetrachloride soil vapor data from the Step I characterization must be evaluated to determine the potential for deeper vadose zone sources.</p>
<p>Sampling using direct-push technology adjacent to the 216-S-25 Crib liquid waste discharge site.</p> <p>Investigation activities are described in Section 2.4.2.6 and the results are described in Section 3.2.4.5.</p>	<p>Collect and analyze soil vapor samples above, within, and below the Cold Creek unit. At each sampling location, collect samples from depths of 4.6 m and 7.6 m (15 and 25 ft) below ground surface. Continue sampling at 7.6 m (25 ft) depth intervals until reaching groundwater at approximately 69 m (225 ft) below ground surface or until the direct push technology cannot advance deeper into the subsurface (i.e., refusal).</p> <p>Analyze soil vapor samples for VOCs using field-screening instrument.</p>	<p>This potential release site was not investigated during Step I. Soil vapor data adjacent to the 216-S-25 Crib site will be collected during Step II. The 216-S-25 Crib site is outside of the Step I study area.</p>
<p>Contingency soil sampling at the 216-S-25 Crib liquid waste discharge site.</p> <p>No soil sampling was conducted since vapor concentrations did not exceed 1,200 ppmv – see Section 3.2.4.5.</p>	<p>If feasible, collect and analyze soil samples at locations with significant carbon tetrachloride vapor concentrations (exceeding 12,000 ppmv) to evaluate the presence of DNAPL. Analyze the soil samples for the COPC, COIs, and physical properties identified in the Work Plan (DOE/RL-2001-01, Appendix D).</p> <p>If feasible, collect and analyze soil samples at locations with carbon tetrachloride vapor concentrations exceeding 1,200 ppmv to evaluate the presence of a nearby carbon tetrachloride source. Analyze the soil samples for carbon tetrachloride.</p>	<p>If possible, a direct-push technology with soil sampling capability (e.g., wireline cone penetrometer, Enhanced Access Penetration System) will be used to collect soil samples.</p> <p>The concentration of 12,000 ppmv is 10 percent of the concentration of saturated carbon tetrachloride vapor.</p>

Table 2-3. Step II Sampling Design and Discussion Location in this Remedial Investigation I Report. (7 Pages)

Sample Collection Methodology	Key Features of Design ^a	Basis for Sampling Design
<p>Sampling at the 218-W-3A Burial Ground.</p> <p>Investigation activities are described in Section 2.4.2.7 and the results are described in Section 3.2.4.6.</p>	<ol style="list-style-type: none"> 1. Collect vapor samples within engineered trenches through caisson risers or vent risers if caisson risers or vent risers are accessible. 2. If feasible, use passive soil vapor sampling methods (e.g., sorbent collectors or flux chambers) or active vapor sampling methods (e.g., sampling from driven soil vapor probes) on tops of trenches if vent risers are not available. Sample every 15 m (50 ft) along the length of the trench. The depth of the active vapor sampling probes would be determined by ground-penetrating radar surveys. 3. Use direct-push technology to collect soil vapor samples above the Cold Creek unit to the sides of the trenches if vent risers and passive or active shallow measurements are not available. Sample every 15 m (50 ft) along the length of the trench. Exploration using the direct-push technology should extend to a maximum depth of 15 m (50 ft). <p>Sampling using passive or active methods or direct-push technology should be conducted approximately every 15 m (50 ft) along the length of the trench being investigated. At each sampling location, collect samples from depths of 4.6 m and 7.6 m (15 and 25 ft) below ground surface. Continue sampling at 7.6 m (25 ft) depth intervals until reaching 15 m (50 ft) below ground surface or until the direct push technology cannot advance deeper into the subsurface (i.e., refusal).</p> <p>Analyze soil vapor samples for VOCs using field-screening instrument.</p>	<p>Cost effective method to focus vadose zone sampling in suspect burial ground release sites.</p> <p>The passive and active soil vapor sampling methods will be deployed at locations of known shallow carbon tetrachloride contamination to evaluate their effectiveness.</p> <p>This sampling will provide soil vapor concentration data from the vadose zone adjacent to hot spots identified in burial ground trenches.</p>
<p>Contingency soil vapor sampling at hot spots at the 218-W-3A Burial Ground.</p> <p>Soil vapor sampling results did not warrant further vadose zone investigation – see Section 3.2.4.6.</p>	<p>If elevated carbon tetrachloride concentration hot spots are detected in activity #3 above, use direct-push technology to collect soil vapor samples above, within, and below the Cold Creek unit to the sides of the trenches at locations of carbon tetrachloride hot spots. At each sampling location, collect samples from depths of 4.6 m and 7.6 m (15 and 25 ft) below ground surface. Continue sampling at 7.6 m (25 ft) depth intervals until reaching groundwater at approximately 69 m (225 ft) below ground surface or until the direct push technology cannot advance deeper into the subsurface (i.e., refusal).</p> <p>Analyze soil vapor samples for VOCs using field-screening instrument.</p>	<p>This sampling will provide soil vapor concentration data from the vadose zone adjacent to hot spots identified in burial ground trenches.</p>

Table 2-3. Step II Sampling Design and Discussion Location in this Remedial Investigation I Report. (7 Pages)

Sample Collection Methodology	Key Features of Design *	Basis for Sampling Design
<p>Contingency soil sampling at the 218-W-3A Burial Ground.</p> <p>No soil sampling was conducted since soil vapor sampling results did not warrant further vadose zone investigation – see Section 3.2.4.6.</p>	<p>If feasible, collect and analyze soil samples at locations with carbon tetrachloride vapor concentrations exceeding 12,000 ppmv to evaluate the presence of DNAPL. Analyze the soil samples for the COPC, COIs, and physical properties identified in the Work Plan (DOE/RL-2001-01, Appendix D).</p> <p>If feasible, collect and analyze soil samples at locations with carbon tetrachloride vapor concentrations exceeding 1,200 ppmv to evaluate the presence of a nearby carbon tetrachloride source. Analyze the soil samples for carbon tetrachloride.</p>	<p>If possible, a DPT with soil sampling capability (e.g., wireline cone penetrometer, Enhanced Access Penetration System) will be used to collect soil samples.</p> <p>The concentration of 12,000 ppmv is 10 percent of the concentration of saturated carbon tetrachloride vapor.</p>
Source Locations		
<p>Soil vapor and groundwater sampling to investigate the following carbon tetrachloride groundwater “hot spots” (and possible associated release sites/sources):</p> <p>Investigation activities are described in Section 2.4.2.8 and the results are described in Section 3.2.4.7.</p>	<p>1. Conduct soil vapor sampling in nearby deep wells with full or partial screens in vadose zone to evaluate direction of carbon tetrachloride migration. Sampling could be one-time with downhole packer or continuous sampling using passive soil vapor extraction well setup. Approximately 36 wells will be sampled.</p>	<p>Existing groundwater hot spots are evidence for localized concentrations of carbon tetrachloride. “Looking up” from the hot spots may identify the source of the contamination. Persistent hot spots are indicative of a continuing source at that location.</p>
<p>Plume (well or location) (numbers refer to areas on Figure 2.4-4)</p> <p>1. 299-W10-20</p> <p>2. T Tank Farm</p> <p>3. T Plant</p> <p>4. 299-W11-10</p>	<p>Associated Potential Release Site</p> <p>218-W-3A</p> <p>T Tank Farm</p> <p>218-W-8, T Plant</p> <p>T Plant</p>	<p>2. Collect groundwater samples using micro-sampling techniques that allow a sampling device to fit through a small opening in the landing plate in existing wells without requiring that the pump be removed. Conduct micro-sampling at the top of the aquifer in nearby groundwater wells to evaluate proximity to a source and/or type of source (e.g., vapor, DNAPL). Analyze the groundwater sample headspace vapor for carbon tetrachloride using field screening instrument.</p> <p>3. Use direct-push technology to conduct soil vapor sampling above, within, and below Cold Creek unit at locations of apparent continuing sources, based on evaluation of results of sampling described above. At each sampling location, collect samples from depths of 4.6 m and 7.6 m (15 and 25 ft) below ground surface.</p> <p>Wells that are unsealed to atmosphere should be sampled during declining barometric pressure.</p>

Table 2-3. Step II Sampling Design and Discussion Location in this Remedial Investigation I Report. (7 Pages)

Sample Collection Methodology		Key Features of Design*	Basis for Sampling Design
5. 216-T-25 Trench	216-T-25 Trench, 218-W-1, 218-W-2, TX and TY Tank Farms	Continue sampling at 7.6 m (25 ft) depth intervals until reaching groundwater at approximately 69 m (225 ft) below ground surface or until the direct push technology cannot advance deeper into the subsurface (i.e., refusal).	Wells that are unsealed to atmosphere should be sampled during declining barometric pressure. (cont)
6. 299-W15-15	218-W-4B, 218-W-4C	Analyze soil vapor samples for VOCs using field-screening instrument.	
7. 299-W15-16	218-W-4C		
8. West of S and SX Tank Farms	216-S-25 Crib, S and SX Tank Farms		
Contingency soil sampling. No soil sampling was conducted since vapor concentrations did not exceed 1,200 ppmv – see Section 3.2.4.7. The investigation activities of other potential release sites/sources are described in Section 2.4.2.9 and the results are described in Section 3.2.4.8.		<p>If feasible, collect and analyze soil samples at locations with significant carbon tetrachloride vapor concentrations (exceeding 12,000 ppmv) to evaluate the presence of DNAPL. Analyze the soil samples for the COPC, COIs, and physical properties identified in the Work Plan (DOE/RL-2001-01, Appendix D).</p> <p>If feasible, collect and analyze soil samples at locations with carbon tetrachloride vapor concentrations exceeding 1,200 ppmv to evaluate the presence of a nearby carbon tetrachloride source. Analyze the soil samples for carbon tetrachloride.</p>	<p>If possible, a direct-push technology with soil sampling capability (e.g., wireline cone penetrometer, Enhanced Access Penetration System) will be used to collect soil samples.</p> <p>The concentration of 12,000 ppmv is 10 percent of the concentration of saturated carbon tetrachloride vapor.</p>
Evaluation of groundwater plumes (Note: not a sampling activity). The evaluation is discussed in Section 2.4.3.5 and other studies are discussed in Section 2.4.3.		<p>Conduct a statistical evaluation of groundwater concentrations over time to identify persistent hot spots that suggest a continuing source at that location.</p> <p>Track “new” or transient plumes to investigate whether they become persistent, indicating a new continuing source, or can be traced back to the original source</p>	The statistical evaluation will identify groundwater plumes that may be indicative of vadose zone sources.

*Step II sampling does not address all of the data gaps identified during the data quality objectives process. See the potential sampling design limitations discussion in the Work Plan (DOE/RL-2001-01, Appendix D, Section D3.2.6).
 BHI-00882, *Airflow Modeling Report for Vapor Extraction Operations at the 200-ZP-2 Operable Unit (Carbon Tetrachloride Expedited Response Action)*
 DOE/RL-2001-01, *200-PW-1 Plutonium-Rich/Organic-Rich Process Waste Group Operable Unit RI/FS Work Plan*.
 DOE/RL-2001-66, *200-LW-1 300 Area Chemical Laboratory Waste Group Operable Unit RI/FS Work Plan*.
 COPC = contaminant of potential concern.
 COI = contaminant of interest.
 DNAPL = dense, nonaqueous-phase liquid.
 DPT = direct-push technology.
 VOC = volatile organic compound.

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Table 2-4. Summary of Passive Soil-Vapor Sampling Around the Release Sites.

Field Test Location (grid)	Number of Samples	QC (trip blanks + duplicates)	Soil Vapor Points	Deployment Dates	Barometric Pressure Range ¹ (in Hg)
216-Z-9 Trench (coarse)	86	4	1-88	11-14 Aug 03	29.1-29.29
216-Z-9 Trench (refined)	165	8	A1-A80	13-16 Sept 04	29.010-29.236
			A81-A165	14-17 Sept 04	28.886-29.236
TX-TY Tank Farm (coarse)	53	3	B1-B53	15-18 Sept 04	28.884-29.161
Within PFP (coarse)	39	2 + 2	C1-C41	11-15 Nov 04	29.241-29.624
216-Z-1A, 216-Z-12, and 216-Z-18 (coarse)	66	4 + 3	D1-D21, D23-D28, D30-D50	12-16 Nov 04	29.241-29.624
			D22, D29, D51-D56	15-18 Nov 04	29.241-29.681
			D57-D66		
Outside TX Tank Farm (refined)	73	3	E1-E64, E66-E74	5-12 Dec 05	29.31-29.86
216-Z-1A and 216-Z-18 (refined)	80	4	F1-F80	31 Jan – 4 Feb 05	29.077-29.743
East of PFP (refined)	22	1	G1-G22		
East and northeast of 216-Z-9 Trench (refined)	55	3 + 3	B1D853-B1D899, B1D8B0-B1D8B9, B1D8C0-B1D8C3	26 May – 2 Jun 05	28.84-29.38
TX Tank Farm	17	1	H1-H17	3-7 Aug 06	28.93-29.23
Total Samples	656	41			

¹ Barometric pressure recorded at Hanford Meteorological Station, 200 West Area.

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
1	8/11/2003	8/14/2003	566380.8	136017.8
2	8/11/2003	8/14/2003	566441.6	136019.8
3	8/11/2003	8/14/2003	566523.2	136021.2
4	8/11/2003	8/14/2003	566583.6	136037.6
5	8/11/2003	8/14/2003	566634.4	136022.2
6	8/11/2003	8/14/2003	566681.0	136021.0
7	8/11/2003	8/14/2003	566741.7	136020.4
8	8/11/2003	8/14/2003	566785.1	136022.0
9	8/11/2003	8/14/2003	566904.2	136023.3
10	8/11/2003	8/14/2003	566385.6	135961.3
11	8/11/2003	8/14/2003	566443.9	135957.7
12	8/11/2003	8/14/2003	566501.8	135974.8
13	8/11/2003	8/14/2003	566586.6	135963.4
14	8/11/2003	8/14/2003	566636.7	135962.8
15	8/11/2003	8/14/2003	566682.1	135959.9
16	8/11/2003	8/14/2003	566743.6	135959.1
17	8/11/2003	8/14/2003	566793.5	135961.4
18	8/11/2003	8/14/2003	566904.1	135953.5
19	8/11/2003	8/14/2003	566386.2	135920.6
20	8/11/2003	8/14/2003	566447.0	135914.7
21	8/11/2003	8/14/2003	566512.8	135918.3
22	8/11/2003	8/14/2003	566586.4	135910.7
23	8/11/2003	8/14/2003	566636.3	135911.9
24	8/11/2003	8/14/2003	566677.5	135894.5
25	8/11/2003	8/14/2003	566741.9	135912.0
26	8/11/2003	8/14/2003	566817.2	135920.9
27	8/11/2003	8/14/2003	566901.0	135914.1
28	8/11/2003	8/14/2003	566387.0	135857.4
29	8/11/2003	8/14/2003	566453.8	135847.4
30	8/11/2003	8/14/2003	566520.9	135837.1
31	8/11/2003	8/14/2003	566580.0	135844.9
32	8/11/2003	8/14/2003	566631.2	135850.0
33	8/11/2003	8/14/2003	566705.1	135845.6
34	8/11/2003	8/14/2003	566746.8	135868.5
35	8/11/2003	8/14/2003	566794.0	135850.2

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
36	8/11/2003	8/14/2003	566869.2	135851.5
37	8/11/2003	8/14/2003	566637.7	135803.0
38	8/11/2003	8/14/2003	566683.2	135807.5
39	8/11/2003	8/14/2003	566747.7	135807.7
40	8/11/2003	8/14/2003	566792.5	135807.5
41	8/11/2003	8/14/2003	566868.0	135809.5
42	8/11/2003	8/14/2003	566638.9	135735.5
45	8/11/2003	8/14/2003	566803.7	135735.9
46	8/11/2003	8/14/2003	566867.9	135743.3
47	8/11/2003	8/14/2003	566304.0	135704.3
48	8/11/2003	8/14/2003	566639.3	135691.2
49	8/11/2003	8/14/2003	566708.4	135703.0
50	8/11/2003	8/14/2003	566746.8	135702.2
51	8/11/2003	8/14/2003	566792.5	135701.8
52	8/11/2003	8/14/2003	566867.7	135700.6
53	8/11/2003	8/14/2003	566304.3	135674.8
54	8/11/2003	8/14/2003	566697.3	135643.0
55	8/11/2003	8/14/2003	566749.6	135631.3
56	8/11/2003	8/14/2003	566777.2	135647.5
57	8/11/2003	8/14/2003	566303.9	135643.1
58	8/11/2003	8/14/2003	566694.2	135606.6
59	8/11/2003	8/14/2003	566729.3	135598.8
60	8/11/2003	8/14/2003	566791.9	135606.7
61	8/11/2003	8/14/2003	566868.8	135606.5
62	8/11/2003	8/14/2003	566756.3	135568.9
63	8/11/2003	8/14/2003	566692.7	135546.2
64	8/11/2003	8/14/2003	566747.5	135562.0
65	8/11/2003	8/14/2003	566786.8	135574.5
66	8/11/2003	8/14/2003	566872.4	135560.8
67	8/11/2003	8/14/2003	566693.8	135509.3
68	8/11/2003	8/14/2003	566748.9	135516.7
69	8/11/2003	8/14/2003	566694.6	135464.2
70	8/11/2003	8/14/2003	566747.5	135472.8
71	8/11/2003	8/14/2003	566793.2	135470.7
72	8/11/2003	8/14/2003	566867.6	135471.5
73	8/11/2003	8/14/2003	566747.4	135433.0

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
74	8/11/2003	8/14/2003	566792.7	135425.6
75	8/11/2003	8/14/2003	566869.1	135422.4
76	8/11/2003	8/14/2003	566747.4	135372.6
77	8/11/2003	8/14/2003	566790.4	135382.1
78	8/11/2003	8/14/2003	566793.2	135334.9
79	8/11/2003	8/14/2003	566868.8	135334.4
80	8/11/2003	8/14/2003	566703.3	135292.6
81	8/11/2003	8/14/2003	566793.8	135288.9
82	8/11/2003	8/14/2003	566747.8	135244.5
83	8/11/2003	8/14/2003	566866.0	135248.6
84	8/11/2003	8/14/2003	566705.1	135200.5
85	8/11/2003	8/14/2003	566792.5	135199.3
86	8/11/2003	8/14/2003	566656.8	135156.3
87	8/11/2003	8/14/2003	566727.3	135643.9
88	8/11/2003	8/14/2003	566831.3	135642.6
A1	9/13/2004	9/16/2004	566712.5	135703.4
A2	9/13/2004	9/16/2004	566741.5	135702.4
A3	9/13/2004	9/16/2004	566763.4	135702.1
A4	9/13/2004	9/16/2004	566786.6	135701.8
A5	9/13/2004	9/16/2004	566810.0	135701.5
A6	9/13/2004	9/16/2004	566836.3	135701.5
A7	9/13/2004	9/16/2004	566889.9	135700.0
A8	9/13/2004	9/16/2004	566944.8	135700.0
A9	9/13/2004	9/16/2004	566999.0	135698.8
A10	9/13/2004	9/16/2004	566712.5	135676.5
A11	9/13/2004	9/16/2004	566742.1	135679.9
A12	9/13/2004	9/16/2004	566764.6	135679.3
A13	9/13/2004	9/16/2004	566787.5	135679.3
A14	9/13/2004	9/16/2004	566810.7	135678.7
A15	9/13/2004	9/16/2004	566718.0	135652.8
A16	9/13/2004	9/16/2004	566742.1	135653.7
A17	9/13/2004	9/16/2004	566765.5	135654.0
A18	9/13/2004	9/16/2004	566787.8	135654.3
A19	9/13/2004	9/16/2004	566811.0	135653.7
A20	9/13/2004	9/16/2004	566836.3	135649.7
A21	9/13/2004	9/16/2004	566891.1	135650.0

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
A22	9/13/2004	9/16/2004	566944.8	135649.4
A23	9/13/2004	9/16/2004	567000.2	135649.7
A24	9/13/2004	9/16/2004	566718.0	135631.1
A25	9/13/2004	9/16/2004	566743.0	135630.5
A26	9/13/2004	9/16/2004	566765.8	135631.7
A27	9/13/2004	9/16/2004	566777.4	135631.4
A28	9/13/2004	9/16/2004	566814.9	135631.7
A29	9/13/2004	9/16/2004	566718.9	135608.0
A30	9/13/2004	9/16/2004	566739.6	135608.0
A31	9/13/2004	9/16/2004	566787.5	135608.6
A32	9/13/2004	9/16/2004	566814.9	135608.3
A33	9/13/2004	9/16/2004	566836.9	135599.4
A34	9/13/2004	9/16/2004	566890.8	135599.4
A35	9/13/2004	9/16/2004	566944.5	135599.4
A36	9/13/2004	9/16/2004	566998.7	135599.7
A37	9/13/2004	9/16/2004	566722.6	135571.1
A38	9/13/2004	9/16/2004	566742.1	135573.8
A39	9/13/2004	9/16/2004	566765.2	135576.0
A40	9/13/2004	9/16/2004	566787.2	135577.8
A41	9/13/2004	9/16/2004	566811.6	135580.8
A42	9/13/2004	9/16/2004	566720.1	135560.1
A43	9/13/2004	9/16/2004	566743.3	135561.3
A44	9/13/2004	9/16/2004	566764.9	135561.9
A45	9/13/2004	9/16/2004	566788.1	135561.3
A46	9/13/2004	9/16/2004	566809.7	135561.9
A47	9/13/2004	9/16/2004	566718.6	135538.2
A48	9/13/2004	9/16/2004	566742.7	135538.8
A49	9/13/2004	9/16/2004	566764.9	135539.1
A50	9/13/2004	9/16/2004	566788.1	135539.1
A51	9/13/2004	9/16/2004	566811.9	135538.5
A52	9/13/2004	9/16/2004	566838.1	135549.7
A53	9/13/2004	9/16/2004	566890.8	135550.4
A54	9/13/2004	9/16/2004	566945.1	135549.4
A55	9/13/2004	9/16/2004	566998.7	135548.2
A56	9/13/2004	9/16/2004	566718.6	135515.6
A57	9/13/2004	9/16/2004	566741.8	135515.3

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
A58	9/13/2004	9/16/2004	566764.6	135515.6
A59	9/13/2004	9/16/2004	566787.8	135516.2
A60	9/13/2004	9/16/2004	566811.0	135515.3
A61	9/13/2004	9/16/2004	566719.2	135492.7
A62	9/13/2004	9/16/2004	566741.2	135492.7
A63	9/13/2004	9/16/2004	566765.2	135493.4
A64	9/13/2004	9/16/2004	566787.5	135492.4
A65	9/13/2004	9/16/2004	566811.3	135492.7
A66	9/13/2004	9/16/2004	566722.0	135469.6
A67	9/13/2004	9/16/2004	566741.8	135469.9
A68	9/13/2004	9/16/2004	566764.9	135469.6
A69	9/13/2004	9/16/2004	566787.8	135469.6
A70	9/13/2004	9/16/2004	566810.3	135469.6
A71	9/13/2004	9/16/2004	566719.2	135446.7
A72	9/13/2004	9/16/2004	566741.8	135446.4
A73	9/13/2004	9/16/2004	566765.8	135446.7
A74	9/13/2004	9/16/2004	566787.8	135446.7
A75	9/13/2004	9/16/2004	566810.3	135446.7
A76	9/13/2004	9/16/2004	566718.9	135423.2
A77	9/13/2004	9/16/2004	566741.8	135423.9
A78	9/13/2004	9/16/2004	566764.6	135423.9
A79	9/13/2004	9/16/2004	566787.8	135423.6
A80	9/13/2004	9/16/2004	566810.3	135424.5
A81	9/14/2004	9/17/2004	566718.6	135400.4
A82	9/14/2004	9/17/2004	566741.5	135401.0
A83	9/14/2004	9/17/2004	566765.2	135401.0
A84	9/14/2004	9/17/2004	566787.8	135401.0
A85	9/14/2004	9/17/2004	566810.7	135401.0
A86	9/14/2004	9/17/2004	566834.1	135400.1
A87	9/14/2004	9/17/2004	566857.0	135400.4
A88	9/14/2004	9/17/2004	566878.3	135399.8
A89	9/14/2004	9/17/2004	566903.0	135401.0
A90	9/14/2004	9/17/2004	566926.2	135401.0
A91	9/14/2004	9/17/2004	566949.3	135401.3
A92	9/14/2004	9/17/2004	566718.3	135378.4
A93	9/14/2004	9/17/2004	566741.2	135377.8

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
A94	9/14/2004	9/17/2004	566764.9	135377.8
A95	9/14/2004	9/17/2004	566787.8	135377.8
A96	9/14/2004	9/17/2004	566811.3	135377.2
A97	9/14/2004	9/17/2004	566833.8	135377.5
A98	9/14/2004	9/17/2004	566857.0	135378.1
A99	9/14/2004	9/17/2004	566878.3	135378.7
A100	9/14/2004	9/17/2004	566902.7	135377.8
A101	9/14/2004	9/17/2004	566925.6	135377.5
A102	9/14/2004	9/17/2004	566949.0	135377.8
A103	9/14/2004	9/17/2004	566718.3	135355.0
A104	9/14/2004	9/17/2004	566741.8	135355.0
A105	9/14/2004	9/17/2004	566764.9	135355.0
A106	9/14/2004	9/17/2004	566787.8	135355.0
A107	9/14/2004	9/17/2004	566810.7	135354.7
A108	9/14/2004	9/17/2004	566833.8	135354.1
A109	9/14/2004	9/17/2004	566856.4	135353.8
A110	9/14/2004	9/17/2004	566878.3	135355.0
A111	9/14/2004	9/17/2004	566902.7	135355.3
A112	9/14/2004	9/17/2004	566925.6	135354.4
A113	9/14/2004	9/17/2004	566949.0	135355.0
A114	9/14/2004	9/17/2004	566718.3	135331.5
A115	9/14/2004	9/17/2004	566741.8	135331.8
A116	9/14/2004	9/17/2004	566765.2	135331.5
A117	9/14/2004	9/17/2004	566787.5	135331.5
A118	9/14/2004	9/17/2004	566811.0	135331.5
A119	9/14/2004	9/17/2004	566833.8	135331.8
A120	9/14/2004	9/17/2004	566856.7	135332.1
A121	9/14/2004	9/17/2004	566878.3	135330.6
A122	9/14/2004	9/17/2004	566903.0	135331.5
A123	9/14/2004	9/17/2004	566926.2	135331.8
A124	9/14/2004	9/17/2004	566949.0	135331.5
A125	9/14/2004	9/17/2004	566718.3	135308.6
A126	9/14/2004	9/17/2004	566741.8	135308.6
A127	9/14/2004	9/17/2004	566764.6	135308.3
A128	9/14/2004	9/17/2004	566787.8	135308.3
A129	9/14/2004	9/17/2004	566810.7	135308.6

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
A130	9/14/2004	9/17/2004	566833.8	135308.9
A131	9/14/2004	9/17/2004	566857.0	135308.6
A132	9/14/2004	9/17/2004	566878.9	135308.3
A133	9/14/2004	9/17/2004	566903.0	135308.6
A134	9/14/2004	9/17/2004	566925.9	135310.2
A135	9/14/2004	9/17/2004	566948.4	135308.3
A136	9/14/2004	9/17/2004	566718.6	135285.8
A137	9/14/2004	9/17/2004	566741.8	135285.5
A138	9/14/2004	9/17/2004	566764.6	135285.8
A139	9/14/2004	9/17/2004	566787.8	135285.8
A140	9/14/2004	9/17/2004	566811.0	135285.8
A141	9/14/2004	9/17/2004	566833.5	135285.8
A142	9/14/2004	9/17/2004	566856.7	135285.8
A143	9/14/2004	9/17/2004	566878.9	135285.5
A144	9/14/2004	9/17/2004	566902.7	135286.1
A145	9/14/2004	9/17/2004	566925.9	135285.8
A146	9/14/2004	9/17/2004	566948.7	135285.5
A147	9/14/2004	9/17/2004	566718.9	135262.6
A148	9/14/2004	9/17/2004	566741.5	135262.9
A149	9/14/2004	9/17/2004	566764.6	135263.2
A150	9/14/2004	9/17/2004	566788.1	135263.5
A151	9/14/2004	9/17/2004	566811.0	135262.9
A152	9/14/2004	9/17/2004	566834.1	135262.9
A153	9/14/2004	9/17/2004	566857.3	135262.9
A154	9/14/2004	9/17/2004	566879.2	135263.2
A155	9/14/2004	9/17/2004	566719.2	135240.1
A156	9/14/2004	9/17/2004	566741.5	135240.1
A157	9/14/2004	9/17/2004	566764.6	135240.4
A158	9/14/2004	9/17/2004	566788.1	135239.5
A159	9/14/2004	9/17/2004	566811.0	135239.8
A160	9/14/2004	9/17/2004	566834.1	135239.5
A161	9/14/2004	9/17/2004	566719.2	135216.9
A162	9/14/2004	9/17/2004	566741.8	135216.6
A163	9/14/2004	9/17/2004	566764.9	135216.9
A164	9/14/2004	9/17/2004	566788.4	135216.6
A165	9/14/2004	9/17/2004	566810.7	135215.4

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
B1	9/15/2004	9/18/2004	566374.2	136524.5
B2	9/15/2004	9/18/2004	566438.8	136525.1
B3	9/15/2004	9/18/2004	566501.6	136525.7
B4	9/15/2004	9/18/2004	566562.8	136524.5
B5	9/15/2004	9/18/2004	566625.9	136525.1
B6	9/15/2004	9/18/2004	566689.0	136524.2
B7	9/15/2004	9/18/2004	566752.1	136524.5
B8	9/15/2004	9/18/2004	566815.2	136524.8
B9	9/15/2004	9/18/2004	566876.5	136524.8
B10	9/15/2004	9/18/2004	566375.4	136460.5
B11	9/15/2004	9/18/2004	566436.7	136460.8
B12	9/15/2004	9/18/2004	566500.1	136460.5
B13	9/15/2004	9/18/2004	566563.2	136460.8
B14	9/15/2004	9/18/2004	566625.9	136460.5
B15	9/15/2004	9/18/2004	566688.4	136460.5
B16	9/15/2004	9/18/2004	566854.8	136461.1
B17	9/15/2004	9/18/2004	566373.9	136396.8
B18	9/15/2004	9/18/2004	566437.0	136396.5
B19	9/15/2004	9/18/2004	566500.1	136396.5
B20	9/15/2004	9/18/2004	566563.2	136396.8
B21	9/15/2004	9/18/2004	566625.9	136396.8
B22	9/15/2004	9/18/2004	566688.7	136396.5
B23	9/15/2004	9/18/2004	566854.8	136396.8
B24	9/15/2004	9/18/2004	566373.6	136332.5
B25	9/15/2004	9/18/2004	566436.7	136332.5
B26	9/15/2004	9/18/2004	566500.1	136332.5
B27	9/15/2004	9/18/2004	566562.5	136332.5
B28	9/15/2004	9/18/2004	566627.2	136332.2
B29	9/15/2004	9/18/2004	566690.6	136334.0
B30	9/15/2004	9/18/2004	566855.2	136334.0
B31	9/15/2004	9/18/2004	566375.1	136268.2
B32	9/15/2004	9/18/2004	566436.7	136268.5
B33	9/15/2004	9/18/2004	566500.7	136268.8
B34	9/15/2004	9/18/2004	566563.5	136268.2
B35	9/15/2004	9/18/2004	566630.2	136268.8
B36	9/15/2004	9/18/2004	566874.7	136268.8

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
B37	9/15/2004	9/18/2004	566373.6	136204.8
B38	9/15/2004	9/18/2004	566436.4	136204.5
B39	9/15/2004	9/18/2004	566495.8	136204.8
B40	9/15/2004	9/18/2004	566625.9	136204.8
B41	9/15/2004	9/18/2004	566874.7	136204.8
B42	9/15/2004	9/18/2004	566373.3	136141.1
B43	9/15/2004	9/18/2004	566436.7	136140.7
B44	9/15/2004	9/18/2004	566496.4	136140.7
B45	9/15/2004	9/18/2004	566625.6	136140.4
B46	9/15/2004	9/18/2004	566874.4	136141.1
B47	9/15/2004	9/18/2004	566373.9	136076.4
B48	9/15/2004	9/18/2004	566437.3	136076.4
B49	9/15/2004	9/18/2004	566496.7	136076.1
B50	9/15/2004	9/18/2004	566563.2	136077.0
B51	9/15/2004	9/18/2004	566625.9	136076.7
B52	9/15/2004	9/18/2004	566689.0	136076.1
B53	9/15/2004	9/18/2004	566875.3	136076.7
C1	11/11/2004	11/15/2004	566396.1	135776.2
C2	11/11/2004	11/15/2004	566429.0	135776.2
C3	11/11/2004	11/15/2004	566467.8	135743.0
C4	11/11/2004	11/15/2004	566537.9	135754.6
C5	11/11/2004	11/15/2004	566590.9	135755.8
C6	11/11/2004	11/15/2004	566395.8	135727.4
C7	11/11/2004	11/15/2004	566421.1	135726.8
C8	11/11/2004	11/15/2004	566441.8	135727.1
C9	11/11/2004	11/15/2004	566497.3	135714.0
C10	11/11/2004	11/15/2004	566541.2	135718.3
C11	11/11/2004	11/15/2004	566586.6	135709.2
C12	11/11/2004	11/15/2004	566635.4	135726.5
C13	11/11/2004	11/15/2004	566376.6	135686.3
C14	11/11/2004	11/15/2004	566404.0	135678.7
C16	11/11/2004	11/15/2004	566452.5	135688.1
C17	11/11/2004	11/15/2004	566488.2	135679.6
C18	11/11/2004	11/15/2004	566521.1	135684.8
C19	11/11/2004	11/15/2004	566550.4	135689.0
C20	11/11/2004	11/15/2004	566586.3	135693.3

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
C21	11/11/2004	11/15/2004	566636.0	135695.1
C22	11/11/2004	11/15/2004	566586.3	135665.6
C23	11/11/2004	11/15/2004	566636.9	135666.5
C24	11/11/2004	11/15/2004	566378.1	135646.7
C25	11/11/2004	11/15/2004	566396.1	135622.3
C26	11/11/2004	11/15/2004	566468.4	135620.5
C27	11/11/2004	11/15/2004	566504.9	135607.3
C28	11/11/2004	11/15/2004	566547.0	135607.0
C29	11/11/2004	11/15/2004	566583.3	135631.4
C30	11/11/2004	11/15/2004	566637.2	135637.2
C31	11/11/2004	11/15/2004	566395.5	135582.7
C32	11/11/2004	11/15/2004	566415.9	135561.9
C33	11/11/2004	11/15/2004	566497.0	135570.5
C34	11/11/2004	11/15/2004	566539.1	135569.6
C36	11/11/2004	11/15/2004	566586.0	135597.9
C37	11/11/2004	11/15/2004	566397.6	135528.4
C38	11/11/2004	11/15/2004	566444.3	135526.3
C39	11/11/2004	11/15/2004	566491.5	135532.1
C40	11/11/2004	11/15/2004	566549.1	135529.6
C41	11/11/2004	11/15/2004	566580.8	135547.0
D1	11/15/2004	11/18/2004	566300.1	135474.2
D2	11/15/2004	11/18/2004	566328.8	135475.1
D3	11/15/2004	11/18/2004	566378.1	135474.8
D4	11/15/2004	11/18/2004	566449.2	135476.6
D5	11/15/2004	11/18/2004	566513.8	135476.3
D6	11/15/2004	11/18/2004	566540.3	135465.9
D7	11/15/2004	11/18/2004	566589.7	135475.7
D8	11/15/2004	11/18/2004	566659.8	135475.7
D9	11/15/2004	11/18/2004	566415.9	135440.9
D10	11/15/2004	11/18/2004	566481.5	135441.8
D11	11/15/2004	11/18/2004	566624.4	135440.6
D12	11/15/2004	11/18/2004	566300.7	135414.4
D13	11/15/2004	11/18/2004	566329.7	135418.7
D14	11/15/2004	11/18/2004	566378.8	135415.3
D15	11/15/2004	11/18/2004	566449.8	135415.3
D16	11/15/2004	11/18/2004	566512.6	135419.0

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
D17	11/15/2004	11/18/2004	566551.0	135419.9
D18	11/15/2004	11/18/2004	566580.2	135415.9
D19	11/15/2004	11/18/2004	566659.5	135415.3
D20	11/15/2004	11/18/2004	566414.7	135390.3
D21	11/15/2004	11/18/2004	566483.0	135391.2
D22	11/15/2004	11/18/2004	566564.7	135391.6
D23	11/15/2004	11/18/2004	566623.8	135390.6
D24	11/15/2004	11/18/2004	566300.4	135371.4
D25	11/15/2004	11/18/2004	566335.2	135370.8
D26	11/15/2004	11/18/2004	566379.7	135369.9
D27	11/15/2004	11/18/2004	566449.5	135370.2
D28	11/15/2004	11/18/2004	566509.5	135371.4
D29	11/15/2004	11/18/2004	566533.9	135370.8
D30	11/15/2004	11/18/2004	566586.0	135369.6
D31	11/15/2004	11/18/2004	566644.2	135371.1
D32	11/15/2004	11/18/2004	566418.4	135346.7
D33	11/15/2004	11/18/2004	566487.9	135346.1
D34	11/15/2004	11/18/2004	566614.4	135350.4
D35	11/15/2004	11/18/2004	566352.5	135330.9
D36	11/15/2004	11/18/2004	566389.7	135329.7
D37	11/15/2004	11/18/2004	566448.5	135330.9
D38	11/15/2004	11/18/2004	566501.9	135330.3
D39	11/15/2004	11/18/2004	566540.6	135329.7
D40	11/15/2004	11/18/2004	566586.0	135330.6
D41	11/15/2004	11/18/2004	566349.5	135285.8
D42	11/15/2004	11/18/2004	566499.8	135285.5
D43	11/15/2004	11/18/2004	566536.9	135285.2
D44	11/15/2004	11/18/2004	566589.7	135284.9
D45	11/15/2004	11/18/2004	566349.2	135236.7
D46	11/15/2004	11/18/2004	566394.3	135236.1
D47	11/15/2004	11/18/2004	566449.5	135236.1
D48	11/15/2004	11/18/2004	566498.8	135236.1
D49	11/15/2004	11/18/2004	566547.3	135227.0
D50	11/15/2004	11/18/2004	566582.4	135236.1
D51	11/15/2004	11/18/2004	566349.2	135195.3
D52	11/15/2004	11/18/2004	566399.2	135195.6

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Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
D53	11/15/2004	11/18/2004	566449.5	135196.5
D54	11/15/2004	11/18/2004	566499.8	135195.6
D55	11/15/2004	11/18/2004	566540.0	135195.9
D56	11/15/2004	11/18/2004	566579.6	135196.2
D57	11/15/2004	11/18/2004	566349.8	135156.2
D58	11/15/2004	11/18/2004	566400.1	135155.3
D59	11/15/2004	11/18/2004	566450.1	135155.9
D60	11/15/2004	11/18/2004	566499.5	135155.6
D61	11/15/2004	11/18/2004	566550.0	135155.9
D62	11/15/2004	11/18/2004	566349.5	135115.1
D63	11/15/2004	11/18/2004	566399.8	135116.0
D64	11/15/2004	11/18/2004	566449.5	135115.7
D65	11/15/2004	11/18/2004	566499.5	135116.0
D66	11/15/2004	11/18/2004	566549.4	135116.3
E1	12/5/2005	12/12/2005	566711.3	136039.6
E2	12/5/2005	12/12/2005	566735.1	136039.6
E3	12/5/2005	12/12/2005	566759.1	136038.0
E4	12/5/2005	12/12/2005	566780.5	136037.7
E5	12/5/2005	12/12/2005	566804.6	136036.8
E6	12/5/2005	12/12/2005	566827.7	136036.2
E7	12/5/2005	12/12/2005	566848.4	136049.0
E8	12/5/2005	12/12/2005	566872.5	136037.4
E9	12/5/2005	12/12/2005	566666.2	136058.5
E10	12/5/2005	12/12/2005	566688.7	136058.1
E11	12/5/2005	12/12/2005	566711.6	136058.1
E12	12/5/2005	12/12/2005	566734.5	136058.1
E13	12/5/2005	12/12/2005	566758.8	136058.5
E14	12/5/2005	12/12/2005	566780.5	136058.1
E15	12/5/2005	12/12/2005	566803.6	136058.8
E16	12/5/2005	12/12/2005	566826.5	136058.1
E17	12/5/2005	12/12/2005	566872.5	136058.1
E18	12/5/2005	12/12/2005	566918.6	136058.1
E19	12/5/2005	12/12/2005	566941.7	136058.1
E20	12/5/2005	12/12/2005	566665.6	136081.3
E21	12/5/2005	12/12/2005	566691.5	136082.5
E22	12/5/2005	12/12/2005	566711.6	136080.7

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
E23	12/5/2005	12/12/2005	566872.5	136081.3
E24	12/5/2005	12/12/2005	566895.7	136081.3
E25	12/5/2005	12/12/2005	566918.6	136081.3
E26	12/5/2005	12/12/2005	566941.7	136081.3
E27	12/5/2005	12/12/2005	566665.6	136104.2
E28	12/5/2005	12/12/2005	566688.7	136104.2
E29	12/5/2005	12/12/2005	566872.5	136104.2
E30	12/5/2005	12/12/2005	566895.7	136104.2
E31	12/5/2005	12/12/2005	566918.6	136104.2
E32	12/5/2005	12/12/2005	566941.7	136104.2
E33	12/5/2005	12/12/2005	566872.5	136127.3
E34	12/5/2005	12/12/2005	566895.7	136127.3
E35	12/5/2005	12/12/2005	566918.6	136127.3
E36	12/5/2005	12/12/2005	566941.7	136127.3
E37	12/5/2005	12/12/2005	566872.5	136150.2
E38	12/5/2005	12/12/2005	566895.7	136150.2
E39	12/5/2005	12/12/2005	566918.6	136150.2
E40	12/5/2005	12/12/2005	566941.7	136150.2
E41	12/5/2005	12/12/2005	566872.5	136173.1
E42	12/5/2005	12/12/2005	566895.7	136173.1
E43	12/5/2005	12/12/2005	566918.6	136173.1
E44	12/5/2005	12/12/2005	566941.7	136173.1
E45	12/5/2005	12/12/2005	566872.5	136196.2
E46	12/5/2005	12/12/2005	566895.7	136196.2
E47	12/5/2005	12/12/2005	566918.6	136196.2
E48	12/5/2005	12/12/2005	566941.7	136196.2
E49	12/5/2005	12/12/2005	566872.5	136219.1
E50	12/5/2005	12/12/2005	566895.7	136219.1
E51	12/5/2005	12/12/2005	566918.6	136219.1
E52	12/5/2005	12/12/2005	566941.7	136219.1
E53	12/5/2005	12/12/2005	566872.5	136242.2
E54	12/5/2005	12/12/2005	566895.7	136242.2
E55	12/5/2005	12/12/2005	566918.6	136242.2
E56	12/5/2005	12/12/2005	566941.7	136242.2
E57	12/5/2005	12/12/2005	566872.5	136265.1
E58	12/5/2005	12/12/2005	566895.7	136265.1

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
E59	12/5/2005	12/12/2005	566918.6	136265.1
E60	12/5/2005	12/12/2005	566941.7	136265.1
E61	12/5/2005	12/12/2005	566872.5	136288.3
E62	12/5/2005	12/12/2005	566895.7	136288.3
E63	12/5/2005	12/12/2005	566918.6	136288.3
E64	12/5/2005	12/12/2005	566941.7	136288.3
E66	12/5/2005	12/12/2005	566851.2	136314.2
E67	12/5/2005	12/12/2005	566872.5	136311.1
E68	12/5/2005	12/12/2005	566895.7	136311.1
E69	12/5/2005	12/12/2005	566918.6	136311.1
E70	12/5/2005	12/12/2005	566941.7	136311.1
E71	12/5/2005	12/12/2005	566826.5	136334.3
E72	12/5/2005	12/12/2005	566849.7	136334.3
E73	12/5/2005	12/12/2005	566872.5	136334.3
E74	12/5/2005	12/12/2005	566895.7	136334.3
F1	1/31/2005	2/4/2005	566378.1	135244.3
F2	1/31/2005	2/4/2005	566402.2	135244.3
F3	1/31/2005	2/4/2005	566425.1	135244.6
F4	1/31/2005	2/4/2005	566448.2	135244.3
F5	1/31/2005	2/4/2005	566471.4	135244.3
F6	1/31/2005	2/4/2005	566494.3	135244.3
F7	1/31/2005	2/4/2005	566379.1	135267.5
F8	1/31/2005	2/4/2005	566401.9	135267.5
F9	1/31/2005	2/4/2005	566425.4	135267.5
F10	1/31/2005	2/4/2005	566447.9	135267.5
F11	1/31/2005	2/4/2005	566471.4	135267.5
F12	1/31/2005	2/4/2005	566494.6	135267.5
F13	1/31/2005	2/4/2005	566379.1	135290.4
F14	1/31/2005	2/4/2005	566401.9	135290.4
F15	1/31/2005	2/4/2005	566425.1	135290.4
F16	1/31/2005	2/4/2005	566447.6	135290.4
F17	1/31/2005	2/4/2005	566471.4	135290.4
F18	1/31/2005	2/4/2005	566494.3	135290.4
F19	1/31/2005	2/4/2005	566379.4	135313.5
F20	1/31/2005	2/4/2005	566402.5	135313.5
F21	1/31/2005	2/4/2005	566425.4	135313.5

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
F22	1/31/2005	2/4/2005	566447.9	135313.5
F23	1/31/2005	2/4/2005	566471.1	135313.5
F24	1/31/2005	2/4/2005	566494.3	135313.8
F25	1/31/2005	2/4/2005	566448.2	135340.0
F26	1/31/2005	2/4/2005	566470.2	135340.0
F27	1/31/2005	2/4/2005	566494.0	135339.1
F28	1/31/2005	2/4/2005	566516.5	135340.0
F29	1/31/2005	2/4/2005	566540.0	135339.4
F30	1/31/2005	2/4/2005	566562.5	135339.7
F31	1/31/2005	2/4/2005	566585.1	135335.8
F32	1/31/2005	2/4/2005	566608.6	135339.1
F33	1/31/2005	2/4/2005	566448.2	135362.9
F34	1/31/2005	2/4/2005	566471.1	135362.6
F35	1/31/2005	2/4/2005	566493.4	135362.3
F36	1/31/2005	2/4/2005	566516.5	135362.3
F37	1/31/2005	2/4/2005	566538.8	135364.4
F38	1/31/2005	2/4/2005	566562.5	135364.1
F39	1/31/2005	2/4/2005	566582.4	135363.5
F40	1/31/2005	2/4/2005	566607.7	135364.4
F41	1/31/2005	2/4/2005	566447.6	135385.5
F42	1/31/2005	2/4/2005	566470.8	135385.5
F43	1/31/2005	2/4/2005	566493.7	135385.5
F44	1/31/2005	2/4/2005	566517.1	135385.5
F45	1/31/2005	2/4/2005	566540.0	135385.1
F46	1/31/2005	2/4/2005	566562.8	135385.5
F47	1/31/2005	2/4/2005	566585.1	135385.1
F48	1/31/2005	2/4/2005	566608.3	135386.1
F49	1/31/2005	2/4/2005	566447.9	135408.6
F50	1/31/2005	2/4/2005	566471.1	135408.3
F51	1/31/2005	2/4/2005	566494.0	135408.3
F52	1/31/2005	2/4/2005	566516.8	135408.6
F53	1/31/2005	2/4/2005	566539.7	135408.3
F54	1/31/2005	2/4/2005	566563.2	135408.6
F55	1/31/2005	2/4/2005	566585.4	135408.3
F56	1/31/2005	2/4/2005	566608.9	135408.3
F57	1/31/2005	2/4/2005	566447.6	135431.2

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Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
F58	1/31/2005	2/4/2005	566470.8	135431.5
F59	1/31/2005	2/4/2005	566493.7	135431.5
F60	1/31/2005	2/4/2005	566517.1	135431.2
F61	1/31/2005	2/4/2005	566540.0	135431.5
F62	1/31/2005	2/4/2005	566562.8	135431.5
F63	1/31/2005	2/4/2005	566585.7	135431.2
F64	1/31/2005	2/4/2005	566608.0	135431.8
F65	1/31/2005	2/4/2005	566447.9	135454.9
F66	1/31/2005	2/4/2005	566470.8	135454.6
F67	1/31/2005	2/4/2005	566493.4	135454.6
F68	1/31/2005	2/4/2005	566516.8	135454.9
F69	1/31/2005	2/4/2005	566540.0	135454.3
F70	1/31/2005	2/4/2005	566563.5	135454.3
F71	1/31/2005	2/4/2005	566585.7	135454.0
F72	1/31/2005	2/4/2005	566608.9	135454.0
F73	1/31/2005	2/4/2005	566447.3	135477.8
F74	1/31/2005	2/4/2005	566470.8	135478.1
F75	1/31/2005	2/4/2005	566493.4	135477.8
F76	1/31/2005	2/4/2005	566516.8	135477.5
F77	1/31/2005	2/4/2005	566540.0	135477.2
F78	1/31/2005	2/4/2005	566563.2	135477.5
F79	1/31/2005	2/4/2005	566585.1	135476.6
F80	1/31/2005	2/4/2005	566610.1	135476.3
G1	1/31/2005	2/4/2005	566627.5	135636.3
G2	1/31/2005	2/4/2005	566650.6	135636.0
G3	1/31/2005	2/4/2005	566674.1	135636.6
G4	1/31/2005	2/4/2005	566697.0	135637.2
G5	1/31/2005	2/4/2005	566627.8	135659.2
G6	1/31/2005	2/4/2005	566650.9	135659.5
G7	1/31/2005	2/4/2005	566694.2	135658.6
G8	1/31/2005	2/4/2005	566627.8	135682.6
G9	1/31/2005	2/4/2005	566650.6	135682.6
G10	1/31/2005	2/4/2005	566675.3	135682.3
G11	1/31/2005	2/4/2005	566696.7	135682.0
G12	1/31/2005	2/4/2005	566627.8	135705.8
G13	1/31/2005	2/4/2005	566650.6	135705.5

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
G14	1/31/2005	2/4/2005	566673.8	135705.2
G15	1/31/2005	2/4/2005	566696.7	135705.5
G16	1/31/2005	2/4/2005	566627.8	135728.7
G17	1/31/2005	2/4/2005	566653.1	135726.5
G18	1/31/2005	2/4/2005	566669.8	135728.0
G19	1/31/2005	2/4/2005	566682.6	135728.7
G20	1/31/2005	2/4/2005	566637.8	135751.5
G21	1/31/2005	2/4/2005	566664.0	135747.6
G22	1/31/2005	2/4/2005	566682.0	135751.5
H1	8/3/2006	8/7/2006	566826.4	136278.9
H2	8/3/2006	8/7/2006	566849.1	136265.4
H3	8/3/2006	8/7/2006	566825.9	136242.2
H4	8/3/2006	8/7/2006	566849.1	136218.8
H5	8/3/2006	8/7/2006	566825.9	136196.5
H6	8/3/2006	8/7/2006	566849.1	136173.1
H7	8/3/2006	8/7/2006	566825.9	136150.2
H8	8/3/2006	8/7/2006	566709.8	136127.3
H9	8/3/2006	8/7/2006	566757.3	136127.3
H10	8/3/2006	8/7/2006	566800.0	136127.3
H11	8/3/2006	8/7/2006	566849.1	136127.3
H12	8/3/2006	8/7/2006	566734.1	136104.2
H13	8/3/2006	8/7/2006	566779.6	136104.2
H14	8/3/2006	8/7/2006	566825.9	136104.2
H15	8/3/2006	8/7/2006	566757.3	136081.3
H16	8/3/2006	8/7/2006	566800.0	136081.3
H17	8/3/2006	8/7/2006	566849.1	136081.3
B1D853	5/26/2005	6/2/2005	567048.5	136023.3
B1D854	5/26/2005	6/2/2005	567048.5	135953.5
B1D855	5/26/2005	6/2/2005	567048.5	135914.1
B1D856	5/26/2005	6/2/2005	567048.5	135851.5
B1D857	5/26/2005	6/2/2005	567048.5	135809.5
B1D858	5/26/2005	6/2/2005	566998.9	135809.5
B1D859	5/26/2005	6/2/2005	566998.9	135809.5
B1D860	5/26/2005	6/2/2005	566949.2	135809.5
B1D861	5/26/2005	6/2/2005	566998.9	135851.5
B1D862	5/26/2005	6/2/2005	566998.9	135914.1

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
B1D863	5/26/2005	6/2/2005	566998.9	135953.5
B1D864	5/26/2005	6/2/2005	566949.2	136023.3
B1D865	5/26/2005	6/2/2005	566998.9	136023.3
B1D866	5/26/2005	6/2/2005	566949.2	135953.5
B1D867	5/26/2005	6/2/2005	566949.2	135914.1
B1D868	5/26/2005	6/2/2005	566949.2	135851.5
B1D869	5/26/2005	6/2/2005	567048.5	135743.3
B1D870	5/26/2005	6/2/2005	566998.9	135743.3
B1D871	5/26/2005	6/2/2005	566949.2	135743.3
B1D872	5/26/2005	6/2/2005	567048.5	135698.9
B1D873	5/26/2005	6/2/2005	567048.5	135648.4
B1D874	5/26/2005	6/2/2005	567048.5	135598.4
B1D875	5/26/2005	6/2/2005	567048.5	135548.1
B1D876	5/26/2005	6/2/2005	567048.5	135527.1
B1D877	5/26/2005	6/2/2005	567048.5	135506.1
B1D878	5/26/2005	6/2/2005	567048.5	135485.1
B1D879	5/26/2005	6/2/2005	567048.5	135464.1
B1D880	5/26/2005	6/2/2005	567048.5	135443.2
B1D881	5/26/2005	6/2/2005	566998.9	135464.1
B1D882	5/26/2005	6/2/2005	566998.9	135485.1
B1D883	5/26/2005	6/2/2005	566998.9	135506.1
B1D884	5/26/2005	6/2/2005	566998.9	135527.1
B1D888	5/26/2005	6/2/2005	566904.2	135506.1
B1D889	5/26/2005	6/2/2005	566904.2	135527.1
B1D890	5/26/2005	6/2/2005	566904.2	135527.1
B1D891	5/26/2005	6/2/2005	566949.2	135527.1
B1D892	5/26/2005	6/2/2005	566949.2	135506.1
B1D893	5/26/2005	6/2/2005	566949.2	135485.1
B1D894	5/26/2005	6/2/2005	566949.2	135464.1
B1D895	5/26/2005	6/2/2005	566949.2	135443.2
B1D896	5/26/2005	6/2/2005	566949.2	135422.2
B1D897	5/26/2005	6/2/2005	566949.2	135422.2
B1D898	5/26/2005	6/2/2005	566998.9	135338.2
B1D899	5/26/2005	6/2/2005	566998.9	135359.2
B1D8B0	5/26/2005	6/2/2005	566998.9	135380.2
B1D8B1	5/26/2005	6/2/2005	566998.9	135401.2

Table 2-5 Passive Soil-Vapor Locations Around Release Sites. (19 Pages)

Soil Vapor Point	Sample Date		Easting (m)	Northing (m)
	Emplaced	Extracted		
B1D8B2	5/26/2005	6/2/2005	566998.9	135422.2
B1D8B3	5/26/2005	6/2/2005	566998.9	135443.2
B1D8B4	5/26/2005	6/2/2005	566904.2	135422.2
B1D8B5	5/26/2005	6/2/2005	566904.2	135443.2
B1D8B6	5/26/2005	6/2/2005	566904.2	135464.1
B1D8B7	5/26/2005	6/2/2005	566904.2	135481.4
B1D8B8	5/26/2005	6/2/2005	566859.2	135485.1
B1D8B9	5/26/2005	6/2/2005	566814.2	135485.1
B1D8C0	5/26/2005	6/2/2005	566814.2	135464.1
B1D8C1	5/26/2005	6/2/2005	566814.2	135443.2
B1D8C2	5/26/2005	6/2/2005	566814.2	135422.2
B1D8C3	5/26/2005	6/2/2005	566859.2	135443.2

Table 2-6. Cone Penetrometer Summary Around the
216-Z-9 Trench. (3 Pages)

Well ID	CPT Push	Date	Easting (m)	Northing (m)	Ground Elevation (m)	Refusal Depth (m)
C4698	P1	1/12/05	566878.2	135334.5	NM	23.5
C4743	P1A		566878.24	135334.5	NM	25
C4699	P2	1/10/05	566764.4	135423.8	NM	41.2
C4744	P2A		566764.25	135422.4	NM	33.3
C4700	P3	1/10/05	566811.0	135515.1	NM	27
C4701	P4	1/11/05	566742.8	135561.0	NM	47.8
C4745	P4A		566744.33	135560.9	NM	48
C4702	P5	1/12/05	566794.2	135589.9	NM	28.7
C4703	P6	1/10/05	566778.2	135644.3	NM	56.5
C4746	P6A		566775.90	135642.4	NM	56.2
C4704	P7	1/11/05	566728.7	135644.1	NM	39.9
C4747	P7A		566731.16	135639.3	NM	40.2
C4763	P8A	4/14/05	566637.5	135733.2	205.8	16.2
C4777	P8B	4/28/05	566637.8	135732.9	205.8	15.7
C4778	P8C	4/28/05	566638.1	135733.8	205.8	15.4
C4762	P9A	4/14/05	566666.2	135709.5	204.5	19.6
C4779	P9B	4/28/05	566669.2	135707.0	204.6	13.3
C4787	P9C	5/3/05	566668.3	135706.7	204.6	12.4
C4788	P9D	5/3/05	566667.7	135706.7	204.6	13.4
C4789	P9E	5/3/05	566668.3	135707.3	204.6	17.7
C4790	P9F	5/3/05	566667.7	135707.6	204.6	11.5
C4764	P10A	4/15/05	566684.5	135748.5	205.5	35.4
C4791	P10B	5/3/05	566684.5	135749.1	205.5	2.3
C4792	P10C	5/4/05	566684.5	135749.4	205.5	15.5
C4793	P10D	5/4/05	566684.5	135750.3	205.5	15.7
C4794	P10E	5/4/05	566684.5	135748.2	205.5	15.5
C4760	P11A	4/13/05	566696.0	135707.6	204.7	22.5
C4795	P11B	5/4/05	566697.9	135707.9	204.4	13.7
C4761	P12A	4/13/05	566699.4	135667.1	204.4	23.8
C4776	P12B	4/27/05	566698.8	135667.7	204.4	19.4
C4796	P12C	5/4/05	566699.1	135666.8	204.4	2.1
C4753	P13A	4/8/05	566734.8	135680.8	204.0	22.3
C4803	P13B	5/6/05	566734.8	135681.1	204.0	11.2
C4804	P13C	5/6/05	566734.8	135682.0	204.0	15.8
C4754	P14A	4/8/05	566774.4	135679.9	203.1	13.8

Table 2-6. Cone Penetrometer Summary Around the
216-Z-9 Trench. (3 Pages)

Well ID	CPT Push	Date	Easting (m)	Northing (m)	Ground Elevation (m)	Refusal Depth (m)
C4755	P14B	4/8/05	566775.0	135679.9	203.1	21.3
C4797	P14C	5/4/05	566775.9	135679.6	203.1	13.6
C4805	P14D	5/6/05	566776.5	135679.6	203.1	14.1
C4806	P14E	5/6/05	566775.0	135679.6	203.1	11.9
C4756	P15A	4/8/05	566815.2	135679.0	202.8	19.8
C4798	P15B	5/4/05	566812.2	135679.0	202.8	9.8
C4807	P15C	5/6/05	566813.7	135679.0	202.8	15.8
C4856	P17A	5/18/05	566764.6	135637.2	202.6	25.8
C4859	P17B	4/19/05	566763.7	135637.2	202.6	25.0
C4860	P17C	5/19/05	566762.8	135637.2	202.6	7.9
C4861	P17D	5/19/05	566762.2	135637.2	202.6	14.3
C4862	P17E	5/19/05	566762.8	135637.2	202.6	15.8
C4863	P17F	5/20/05	566764.0	135637.2	202.6	32.2
C4864	P17G	5/20/05	566764.6	135638.1	202.6	30.2
C4748	P18A	4/5/05	566796.9	135616.5	202.0	20.3
C4749	P18B	4/6/05	566795.4	135615.9	202.0	20.2
C4771	P18C	4/20/05	566795.4	135617.1	202.0	5.3
C4772	P18D	4/20/05	566795.1	135617.1	202.0	22.0
C4784	P18E	5/2/05	566796.6	135617.4	202.0	9.4
C4785	P18F	5/3/05	566796.6	135616.8	202.0	13.6
C4786	P18G	5/3/05	566796.3	135617.7	202.0	12.9
C4750	P19A	4/6/05	566814.3	135632.6	201.2	9.9
C4751	P19B	4/7/05	566814.9	135632.6	201.2	10.8
C4773	P19C	4/21/05	566816.1	135632.6	201.2	9.4
C4774	P19D	4/26/05	566816.7	135632.6	201.2	10.2
C4775	P19E	4/26/05	566817.4	135632.6	201.2	10.1
C4857	P20A	5/18/05	566746.9	135637.2	202.7	12.0
C4858	P20B	5/18/05	566746.6	135637.2	202.7	13.7
C4757	P21A	4/12/05	566725.6	135570.2	205.3	11.3
C4758	P21B	4/12/05	566725.6	135569.6	205.3	11.2
C4808	P21C	4/12/05	566725.9	135571.1	205.3	12.8
C4783	P21D	5/2/05	566725.6	135571.4	205.3	11.4
C4752	P22A	4/7/05	566776.2	135602.2	201.7	20.5
C4759	P22B	4/12/05	566777.1	135602.8	201.7	20.4
C4799	P22C	5/5/05	566777.1	135602.5	201.7	12.0
C4800	P22D	5/5/05	566777.1	135601.9	201.7	15.5

Table 2-6. Cone Penetrometer Summary Around the
216-Z-9 Trench. (3 Pages)

Well ID	CPT Push	Date	Easting (m)	Northing (m)	Ground Elevation (m)	Refusal Depth (m)
C4801	P22E	5/5/05	566777.1	135601.3	201.7	16.6
C4802	P22F	5/5/05	566777.1	135600.6	201.7	18.6
C4809	P22G	5/16/05	566777.1	135603.4	201.7	21.4
C4768	P23A	4/19/05	566763.1	135571.4	204.4	27.1
C4769	P23B	4/19/05	566763.1	135570.5	204.4	13.1
C4770	P23C	4/20/05	566761.6	135570.5	204.4	12.2
C4780	P23D	5/2/05	566764.9	135571.1	204.4	12.2
C4781	P23E	5/2/05	566764.6	135570.5	204.4	17.6
C4782	P23F	5/2/05	566764.6	135571.4	204.4	9.7
C4810	P24A	5/17/05	566729.6	135618.6	204.6	17.0
C4811	P24B	5/17/05	566729.6	135619.5	204.6	13.6
C4812	P24C	5/17/05	566729.6	135620.2	204.6	13.1
C4813	P24D	5/18/05	566729.6	135621.1	204.6	13.4
C4765	P26A	4/18/05	566781.7	135514.4	203.3	13.0
C4766	P27A	4/18/05	566873.4	135330.9	204.5	8.6
C4767	P27B	4/18/05	566873.7	135333.9	204.5	7.7

CPT = cone penetrometer.
ID = identification (number).
NM = not measured.

Table 2-7. Cone Penetrometer Summary Around the
216-Z-1A Tile Field. (3 Pages)

Well ID	CPT Push	Date	Easting (m)	Northing (m)	Ground Elevation (m)	Refusal Depth (m)
C4906	P25A	7/27/05	566725.6	135531.5	203.8	12.85
C4907	P25B	7/27/05	566726.2	135531.5	203.8	13.30
C4905	P28A	7/27/05	566612.2	135410.1	207.8	23.70
C4866	P29A	7/19/05	566563.5	135409.2	204.9	20.30
C4867	P29B	7/20/05	566563.5	135408.3	204.9	27.61
C4917	P29C	8/2/05	566564.4	135409.2	204.9	18.95
C4918	P29D	8/2/05	566564.7	135408.3	204.9	16.20
C4919	P29E	8/2/05	566564.1	135409.8	204.9	16.95
C4920	P29F	8/2/05	566564.1	135408.9	204.9	12.20
C4921	P29G	8/2/05	566564.1	135408.3	204.9	12.15
C4871	P30A	7/21/05	566532.1	135409.5	204.3	11.25

Table 2-7. Cone Penetrometer Summary Around the
216-Z-1A Tile Field. (3 Pages)

Well ID	CPT Push	Date	Easting (m)	Northing (m)	Ground Elevation (m)	Refusal Depth (m)
C4872	P30B	7/21/05	566532.1	135408.6	204.3	11.00
C4925	P30C	8/3/05	566531.8	135409.8	204.3	10.75
C4932	P30D	8/4/05	566531.8	135410.4	204.3	23.93
C4934	P30E	8/5/05	566530.8	135410.4	204.3	22.41
C4963	P30F	8/16/05	566531.2	135411.1	204.3	12.25
C4964	P30G	8/16/05	566531.2	135409.5	204.3	24.36
C4958	P30H	8/17/05	566531.2	135410.1	204.3	17.76
C4959	P30I	8/17/05	566531.2	135409.2	204.3	13.30
C4960	P30J	8/17/05	566532.7	135410.4	204.3	18.29
C4961	P30K	8/17/05	566533.0	135409.8	204.3	11.28
C4962	P30L	8/18/05	566531.2	135410.4	204.3	18.90
C4873	P31A	7/21/05	566530.5	135446.7	204.7	22.11
C4926	P31B	8/3/05	566530.2	135447.3	204.7	2.19
C4933	P31C	8/4/05	566531.2	135447.3	204.7	12.80
C4874	P32A	7/21/05	566501.9	135419.6	208.7	21.26
C4904	P32B	7/27/05	566501.6	135420.2	208.7	20.10
C4927	P32C	8/3/05	566500.7	135419.0	208.7	15.41
C4928	P32D	8/4/05	566501.0	135418.4	208.7	11.05
C4929	P32E	8/4/05	566500.7	135419.6	208.7	21.04
C4911	P33A	7/28/05	566471.7	135313.8	208.3	12.55
C4912	P33B	7/28/05	566471.7	135313.2	208.3	13.40
C4936	P33C	8/5/05	566471.4	135314.4	208.3	11.05
C4870	P34A	7/21/05	566531.2	135371.7	204.1	28.21
C4923	P34B	8/3/05	566532.1	135372.3	204.1	2.50
C4924	P34C	8/3/05	566531.8	135371.4	204.1	17.45
C4865	P35A	7/19/05	566561.0	135374.8	204.9	27.62
C4915	P35B	8/1/05	566561.6	135374.8	204.9	21.16
C4916	P35C	8/2/05	566561.6	135375.4	204.9	26.56
C4868	P36A	7/20/05	566561.0	135445.5	204.8	11.80
C4869	P36B	7/20/05	566561.0	135446.1	204.8	12.50
C4922	P36C	8/2/05	566561.3	135444.9	204.8	9.85
C4878	P37A	7/22/05	566587.2	135436.4	208.4	19.90
C4879	P38A	7/25/05	566587.8	135397.6	207.4	27.21
C4935	P38B	8/5/05	566587.8	135398.3	207.4	26.06
C4880	P39A	7/25/05	566556.8	135353.8	206.8	12.35

Table 2-7. Cone Penetrometer Summary Around the 216-Z-1A Tile Field. (3 Pages)

Well ID	CPT Push	Date	Easting (m)	Northing (m)	Ground Elevation (m)	Refusal Depth (m)
C4897	P39B	7/25/05	566557.4	135353.8	206.8	12.35
C4903	P40A	7/26/05	566621.4	135462.0	207.8	20.10
C4908	P41A	7/28/05	566697.9	135448.5	204.2	13.25
C4909	P41B	7/28/05	566697.3	135449.2	204.2	13.65
C4910	P42A	7/28/05	566615.0	135337.3	206.6	21.10
C4875	P43A	7/22/05	566494.9	135360.2	208.7	24.80
C4898	P44A	7/25/05	566498.2	135385.2	209.4	22.36
C4930	P44B	8/4/05	566498.8	135385.2	209.4	21.34
C4899	P45A	7/25/05	566449.8	135432.1	209.0	15.00
C4900	P45B	7/26/05	566450.1	135431.5	209.0	15.55
C4876	P46A	7/22/05	566494.6	135480.2	208.0	11.90
C4877	P46B	7/22/05	566495.5	135480.2	208.0	12.70
C4901	P47A	7/26/05	566386.7	135423.9	208.6	0.35
C4902	P48A	7/26/05	566366.3	135484.5	209.7	23.20
C4931	P48B	8/4/05	566365.3	135485.1	209.7	22.87
C4913	P49A	8/1/05	566757.9	135586.9	203.4	14.25
C4914	P49B	8/1/05	566757.9	135586.3	203.4	16.20
C4939	P49C	8/12/05	566757.0	135585.4	203.4	9.76
C4940	P49D	8/12/05	566757.6	135585.4	203.4	14.75
C4941	P49E	8/15/05	566757.9	135585.4	203.4	0.55
C4942	P49F	8/15/05	566757.9	135585.4	203.4	12.40
C4943	P49G	8/15/05	566757.3	135585.1	203.4	15.15
C4944	P49H	8/15/05	566757.9	135585.1	203.4	13.75
C4945	P49I	8/15/05	566756.7	135584.2	203.4	13.51
C4946	P49J	8/16/05	566757.0	135584.2	203.4	11.05
C4956	P49K	8/16/05	566757.0	135584.2	203.4	14.30
C4957	P49L	8/16/05	566757.9	135584.2	203.4	13.50

CPT = cone penetrometer.

ID = identification (number).

Table 2-8. Sampling Location Rationale in the Plutonium Finishing Plant Protected Area.

Well Identification Number	Temporary Sampling Location Number ^a	Rationale
C4064	Z13	Investigation of the three French drains that received heating, ventilation, and air conditioning condensate discharges
C4066	Z14	
C4065	Z15	
C3879	17	Investigation of the drum storage area (Note: Two locations will be investigated per Table 3-3 in the sampling and analysis plan [DOE/RL-2001-01, Appendix C], because no shallow soil-vapor sampling will be conducted)
C3877	24	
C4060	6	Investigation of the liquid waste discharge pipeline to the 216-Z-1A Tile Field liquid-waste discharge site
C4059	15	
C3494 (W15-764)	25	Investigation of the liquid-waste discharge pipeline to the 216-Z-9 Trench liquid-waste discharge site [Note: The soil-vapor sampling was conducted during drilling of well 299-W15-764 (Borehole C3494)]
C4059	15	Investigation of liquid-waste discharges to unplanned release site UPR-200-W-103
C4061	4	Investigation of liquid-waste discharge pipeline to the 216-Z Ditches system
C4060	6	Investigation of liquid-waste discharges to the 241-Z-361 Settling Tank
C3876	7	
C4068	28	Investigation near location of groundwater well 299-W15-16
C4062	2	Investigation of southwest portion of Plutonium Finishing Plant Protected Area
C4067	11	
C4063	20	
C4136	55	investigation of northern portion of Plutonium Finishing Plant Protected Area
C4137	46	
C4138	48	
C3878	26	Investigation of carbon tetrachloride tank storage area

^a Based on Figure 1 in the supplement to the SAP in DOE/RL-2001-01, Appendix C, p. C-84.

Table 2-9. Guzzler/GeoProbe Boreholes within the Plutonium Finishing Plant Facility Area. (2 Pages)

Well ID	Temporary Number *	Guzzler Total Depth (ft bgs)	Ground Surface	Guzzler Operation Date	GeoProbe Total Depth (ft)	Sample Intervals (ft bgs)		Sample Date
C3876	7	5	Gravel	7/23/03	34.2	14	14.5	8/19/03
						23.7	25	8/18/03
						33.2	34.2	8/18/03
C3877	24	7.6	Gravel	7/23/03	46.7	15	15.6	8/20/03
						24.4	27.3	8/20/03
						45.8	46.5	8/20/03
C3878	26	7.5	Asphalt	7/24/03	45.4	14	14.5	8/18/03
						25	25.5	8/18/03
						43.6	44.2	8/18/03
C3879	17	8	Asphalt	7/24/03	41.3	13.1	13.8	8/19/03
						25	27	8/19/03
						40.3	41.1	8/19/03
C4059	15	8.1	Gravel	7/24/03	42.9	15.5	17.6	8/20/03
						23.8	24.6	8/20/03
						41.7	42.8	8/20/03
C4060	6	8	Gravel	7/24/03	36	13.5	14	8/22/03
						25	25.5	8/22/03
						35	35.5	8/22/03
C4061	4	8	Gravel	7/24/03	36.5	15.5	16.5	8/25/03
						24	25	8/25/03
						35.5	36.5	8/25/03
C4062	2	8	Gravel	7/24/03	31	14	14.7	8/26/03
						24	25	8/26/03
						30	31	8/26/03
C4063	20	8	Gravel	7/24/03	42.2	13.5	15.3	8/26/03
						22.8	23.3	8/26/03
						41.4	42.2	8/26/03
C4064	Z-13	6.9	Gravel	7/25/03	28.5	14	14.5	8/21/03
						27.3	28.5	8/21/03

Table 2-9. Guzzler/GeoProbe Boreholes within the Plutonium Finishing Plant Facility Area. (2 Pages)

Well ID	Temporary Number *	Guzzler Total Depth (ft bgs)	Ground Surface	Guzzler Operation Date	GeoProbe Total Depth (ft)	Sample Intervals (ft bgs)		Sample Date
C4065	Z-15	7.3	Asphalt	7/25/03	44	15	16	8/25/03
						22.2	23.2	8/25/03
						43	44	8/25/03
C4066	Z-14	8	Asphalt	7/25/03	40	14.5	15	8/21/03
						24.5	25.5	8/21/03
						39	40	8/21/03
C4067	11	8	Gravel	7/25/03	39	15.5	17.5	8/28/03
						24.3	25.3	8/28/03
						38	39	8/28/03
C4068	28	8	Gravel	7/25/03	32	14.3	14.8	8/26/03
						25	26	8/26/03
						31	32	8/26/03
C4136	55	7.7	Gravel	7/28/03	36	15.5	16.5	8/27/03
						23.5	25	8/27/03
						35	36	8/27/03
C4137	46	7.9	Gravel	7/28/03	38.5	14	14.5	8/27/03
						24.8	25.3	8/27/03
						37.3	38.3	8/27/03
C4138	48	8	Asphalt	7/28/03	47.5	14.5	15.5	8/28/03
						22	25	8/28/03
						46.5	47.5	8/28/03

* Based on Figure 1 in the supplement to the SAP in DOE/RL-2001-01, Appendix C, p. C-84.
 GeoProbe is a registered trademark of GeoProbe Systems, Salina, Kansas.
 ID = identification (number).

Table 2-10. Passive Soil-Vapor Survey at the 218-W-3A Burial Ground.

Field Sample Point	Date Emplaced	Date Extracted	HEIS Number	Northing (m)	Easting (m)
T9S-1	6/30/2005	7/5/2005	B1DDX4	136876.562	566220.983
T9S-2	6/30/2005	7/5/2005	B1DDW5	136876.374	566099.286
T9S-3	6/30/2005	7/5/2005	B1DDW6	136876.397	566114.498
T9S-4	6/30/2005	7/5/2005	B1DDW7	136876.421	566129.710
T9S-5	6/30/2005	7/5/2005	B1DDW8	136876.444	566144.923
T9S-6	6/30/2005	7/5/2005	B1DDW9	136876.468	566160.135
T9S-7	6/30/2005	7/5/2005	B1DDX0	136876.491	566175.347
T9S-8	6/30/2005	7/5/2005	B1DDX1	136876.515	566190.559
T9S-9	6/30/2005	7/5/2005	B1DDX2	136876.538	566205.771
T9S-9D	6/30/2005	7/5/2005	B1DDX3	136876.538	566205.771
T9S-10	6/30/2005	7/5/2005	B1DDX5	136876.585	566236.196
T06-1	6/30/2005	7/5/2005	B1DDY8	137047.617	566266.356
T06-2	6/30/2005	7/5/2005	B1DDX6	137046.446	566099.024
T06-3	6/30/2005	7/5/2005	B1DDX7	137046.470	566114.236
T06-4	6/30/2005	7/5/2005	B1DDX8	137046.493	566129.448
T06-5	6/30/2005	7/5/2005	B1DDX9	137046.505	566137.054
T06-6	6/30/2005	7/5/2005	B1DDY0	137046.540	566159.872
T06-7	6/30/2005	7/5/2005	B1DDY1	137046.563	566175.085
T06-8	6/30/2005	7/5/2005	B1DDY2	137046.587	566190.297
T06-9	6/30/2005	7/5/2005	B1DDY3	137046.610	566205.509
T06-10	6/30/2005	7/5/2005	B1DDY4	137046.634	566220.721
T06-10D	6/30/2005	7/5/2005	B1DDY5	137046.634	566220.721
T06-11	6/30/2005	7/5/2005	B1DDY6	137046.657	566235.933
T06-12	6/30/2005	7/5/2005	B1DDY7	137046.681	566251.146

HEIS = Hanford Environmental Information System database.

Table 2-11 Wells Identified for Soil-Vapor and Groundwater Sampling at the Groundwater "Hot Spot" Areas. (2 Pages)

Groundwater "Hot Spot" Location *	Associated Potential Release Site	Well	Depth to Groundwater (ft Below Top of Casing)		Depth to Bottom (ft Below Top of Casing)	Screen Interval (ft)	Length of Screen Above Water Table (ft)	Length of Screen Below Water Table (ft)
1. 299-W10-20	218-W-3A Burial Ground	299-W10-19	N/A*	9/6/2005	238.3	214.4 - 234.5	20.1	0
		299-W10-20	240.1	9/19/05	245.2	221.7 - 241.6	18.4	1.5
		299-W10-21	229.7	9/19/05	232.2	209.3 - 229.3	20	0
2. T Tank Farm	T Tank Farm	299-W10-1	234.5	8/29/05	302.8	190 - 270	44.5	35.5
		299-W10-8	238.7	8/25/05	250.7	211 - 251	27.7	12.3
		299-W10-23	260.0	9/19/05	261.2	225.8 - 260.9	34.2	0.9
		299-W10-24	243.8	9/20/05	268.4	232.9 - 268.0	11	24.1
		299-W11-28	N/A*	8/25/05	247.4	224.0 - 244.9	20.9	0
		299-W11-40	243.5	11/23/05	272.2	238.1-273.1	5.4	29.6
		299-W11-41	245.9	9/26/05	273.7	236.7 - 271.7	9.2	25.8
		299-W11-42	247	9/30/05	273.8	236.8 - 271.8	10.2	24.8
3. T Plant	218-W-8 Burial Ground; T Plant	299-W11-7	268.4	9/27/05	274.5	245 - 290	23.4	21.6
		299-W11-14	277.0	6/21/06	276.9	250 - 313	27	36
		299-W11-37	285.6	9/27/05	294.3	260.2 - 291.3	25.4	5.7
4. 299-W11-10	T Plant	299-W11-10	293.8	8/30/05	300.3	256 - 304	37.8	10.2
		299-W11-3	279.9	10/11/05	287.8	254 - 267	13	0
						277 - 287.8	0	10.8
5. 216-T-25 Trench	216-T-25 Trench, 218-W-1 & W-2 Burial Grounds, TX-TY Tank Farm	299-W10-4	228.6	9/26/05	238.8	190 - 245	38.6	16.4
		299-W10-5	229.1	8/30/05	241.1	175 - 220	45	0
		299-W15-40	226	6/22/05	256.4	218.0 - 253.1	8	27.1
		299-W15-43	229	6/23/05	266.2	226.4 - 261.4	2.6	32.4
		299-W15-765	224	6/22/05	259.2	220 - 255	4	31

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Table 2-11 Wells Identified for Soil-Vapor and Groundwater Sampling at the Groundwater "Hot Spot" Areas. (2 Pages)

Groundwater "Hot Spot" Location ^a	Associated Potential Release Site	Well	Depth to Groundwater (ft Below Top of Casing)		Depth to Bottom (ft Below Top of Casing)	Screen Interval (ft)	Length of Screen Above Water Table (ft)	Length of Screen Below Water Table (ft)
6. 299-W15-15	218-W-4B and 218-W-4C Burial Grounds	299-W15-14	205.3	8/30/05	219.9	unknown	unknown	unknown
		299-W15-15	250.6	9/26/05	252.8	223 - 255	27.6	4.4
7. 299-W15-16	218-W-4C Burial Grounds	299-W15-16	N/A*	9/29/05	243.5	208 - 238	30	0
		299-W15-17	239.5	9/29/05	432.3	422.5 - 432.5	0	10
		299-W15-30	240.7	9/29/05	263.5	218.1 - 258	22.6	17.3
		299-W15-31A	236.1	9/22/05	255.6	212.5 - 252.4	27	12.9
8. West of S-SX Tank Farm	216-S-25 Crib, S-SX Tank Farm	299-W18-15	217	9/22/05	239.4	170 - 243	47	26
		299-W23-4	218.2	6/21/06	249.7	180 - 300	38.2	81.8
		299-W23-10	221.3	9/22/05	223.4	165 - 178	13	0
						186 - 230	35.3	8.7
		299-W23-15	213	9/22/05	unknown	185.7 - 222.4	27.3	9.4
C4890**	216	7/11/05	224	N/A	N/A	N/A		

^a See Figure 2-9 for general locations.

* Well is dry.

** Sampled using the Enhanced Access Penetration System (see Section 2.4.2.6). Depths were measured relative to ground surface.

N/A = not applicable.

Table 2-12. Wells for Depth-Discrete Groundwater Sampling.

Groundwater "Hot Spot" Area	Well Selected for Depth-Discrete Groundwater Sampling
1	The key well, 299-W10-20, does not have sufficient water for depth-discrete sampling.
2	<p>Sample well 299-W11-42. The water table was estimated to be at 245 ft in this well in July 2005, and the well was estimated to have 35 ft of water. Sample at 5 ft and 10 ft below the static water level.</p> <p>Well 299-W11-25B, which was drilled adjacent to well 299-W11-39, was sampled at depth-discrete intervals every 20 ft below the water table to the Ringold Formation lower mud during drilling in February 2005.</p>
3	The key well, 299-W11-14, does not have sufficient water for depth-discrete sampling.
4	Sample well 299-W11-10. The water table was estimated to be at 291.8 ft in this well in July 2005, and the well was estimated to have 8.5 ft of water. Sample at 4 ft and 8 ft below the static water level.
5	Three key wells, 299-W15-40, 299-W15-43, and 299-W15-765, were sampled at depth-discrete intervals by Vista Engineering in January 2005 (Area 5).
6	The key well, 299-W15-15, does not have sufficient water for depth-discrete sampling.
7	One key well, 299-W15-30, was sampled at depth-discrete intervals by Vista Engineering in February 2005 (Area 7).
8	Sample well 299-W23-4. The water table was estimated to be at 219.6 ft in this well in July 2005, and the well was estimated to have 30 ft of water. Sample at 5 ft, 15 ft, and 25 ft below the static water level.

Table 2-13. Passive Soil-Vapor Survey at T Plant.

Field Sample Point	Date Emplaced	Date Extracted	HEIS Number	Northing (m)	Easting (m)
1	5/26/2005	6/1/2005	B1D831	136649.526	567282.987
2	5/26/2005	6/1/2005	B1D832	136711.219	567280.699
2-DUP	5/27/2005	6/1/2005	B1D833	136711.219	567280.699
3	5/26/2005	6/1/2005	B1D834	136773.152	567278.338
4	5/26/2005	6/1/2005	B1D830	136651.385	567332.916
5	5/26/2005	6/1/2005	B1D829	136713.139	567330.624
6	5/26/2005	6/1/2005	B1D828	136774.991	567328.305
7	5/26/2005	6/1/2005	B1D827	136821.135	567326.585
8	5/26/2005	6/1/2005	B1D841	136653.306	567382.895
9	5/26/2005	6/1/2005	B1D842	136714.999	567380.553
10	5/26/2005	6/1/2005	B1D837	136776.836	567378.26
11	5/26/2005	6/1/2005	B1D822	136826.816	567376.448
12	5/26/2005	6/1/2005	B1D835	136876.722	567374.605
13	5/26/2005	6/1/2005	B1D836	136926.721	567372.741
14	5/26/2005	6/1/2005	B1D840	136655.161	567432.823
15	5/26/2005	6/1/2005	B1D839	136716.921	567430.538
16	5/26/2005	6/1/2005	B1D838	136778.67	567428.242
17	5/26/2005	6/1/2005	B1D821	136828.635	567426.403
18	5/26/2005	6/1/2005	B1D823	136882.567	567424.36
19	5/26/2005	6/1/2005	B1D824	136928.569	567422.671
20	5/26/2005	6/1/2005	B1D820	136780.452	567478.24
21	5/26/2005	6/1/2005	B1D819	136831.224	567477.041
22	5/26/2005	6/1/2005	B1D826	136881.144	567474.477
23	5/26/2005	6/1/2005	B1D825	136931.083	567471.891
24	5/26/2005	6/1/2005	B1D818	136880.144	567524.500
25	5/26/2005	6/1/2005	B1D817	136941.083	567524.500
26	5/26/2005	6/1/2005	B1D843	136684.475	567592.72
27	5/26/2005	6/1/2005	B1D844	136725.14	567621.875
28	5/26/2005	6/1/2005	B1D845	136765.79	567650.983
28-DUP	5/27/2005	6/1/2005	B1D846	136765.79	567650.983
29	5/26/2005	6/1/2005	B1D847	136806.422	567680.069
30	5/26/2005	6/1/2005	B1D848	136847.085	567709.192

Table 2-14. Soil-Vapor Samples Collected During Fiscal Year 2001 to Fiscal Year 2006 Well Drilling. (3 Pages)

Well Name	Well ID	Top of Sample Depth (ft)	Sample Date	HEIS Number	SAF	Reference	Location
W15-95	A7394	105.5	5/21/2001	B12192	B01-088	BHI-01631	North side 216-Z-9 Trench
		114.0	5/22/2001	B12193			
		122.0	5/23/2001	B12195			
		146.5	5/25/2001	B12196			
		164.5	5/30/2001	B12197			
		184.4	5/31/2001	B12198			
		184.4	5/31/2001	B12198			
		184.4	6/1/2001	B12199			
		184.4	6/1/2001	B12199			
W15-84	A7384	109.5	6/8/2001	B124R3	B01-088	BHI-01631	West side 216-Z-9 Trench
		120.6	6/11/2001	B124R4			
		131.0	6/12/2001	B124R5			
		149.8	6/12/2001	B124R6			
		170.0	6/13/2001	B12621			
		180.8	6/14/2001	B12622			
		193.0	6/15/2001	B12693			
W15-764	C3494	28.0	10/10/2001	B12XH5	B01-115	BHI-01631	East side of PFP by Z-9 effluent lines
		60.0	10/12/2001	B12XH6			
		80.0	10/15/2001	B12XH7			
		100.0	10/16/2001	B12XH8			
		120.0	10/18/2001	B12XH9			
		125.0	10/18/2001	B12XJ0			
W15-42	C3803	28.0	11/28/2001	B13F38	B01-115	BHI-01631	East side of PFP
		60.0	11/30/2001	B13F39			
		79.5	12/4/2001	B13F40			
		99.5	12/17/2001	B13F41			
		117.3	12/19/2001	B13F42			
		123.0	12/20/2001	B13F43			
		132.0	1/3/2002	B13F44			
		136.2	1/3/2002	B13F45			
		160.0	1/4/2002	B13F46			
		179.6	1/8/2002	B13F47			
		187.0	1/14/2002	B13F48			
		198.5	1/15/2002	B13Y00			
219.0	1/17/2002	B13Y01					

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Table 2-14. Soil-Vapor Samples Collected During Fiscal Year 2001 to Fiscal Year 2006 Well Drilling. (3 Pages)

Well Name	Well ID	Top of Sample Depth (ft)	Sample Date	HEIS Number	SAF	Reference	Location
W18-16	C4303	122	11/1/2004	B1C7N9	F03-022	D&D-30838	East of 216-Z-1A Tile Field
		122	11/1/2004	B1C7P0			
		144	11/3/2004	B1C7P5			
		144	11/3/2004	B1C7P6			
		229.5	11/15/2004	B1C7R0			
		229.5	11/15/2004	B1C7R1			
W15-49	C4301	130.0	11/12/2004	B1C7R2	F03-022	D&D-30838	Northeast of 218-W-4B Burial Ground
		130.0	11/12/2004	B1C7R3			
		167.8	11/16/2004	B1C7R4			
		167.8	11/16/2004	B1C7R8			
		230.0	11/23/2004	B1C7R9			
		230.0	11/23/2004	B1C7T3			
W15-50	C4302	107	1/10/2005	B1C3J0	F03-022	D&D-30838	North of 216-Z-9, South of 216-T-19
		107	1/10/2005	B1C3J1			
		109	1/10/2005	B1C3J3			
		109	1/10/2005	B1C3J4			
		209	1/17/2005	B1C3J6			
		209	1/17/2005	B1C3J7			
-	C4738	128	2/7/2005	B1C7T4	F03-022	D&D-30838	216-T-33 Crib
		128	2/7/2005	B1C7T5			
W15-43	C3955	228.5	6/23/2005	B1HL62	F05-003	D&D-30838	West of TX Tank Farm
		228.5	6/23/2005	B1HL63			
W15-94	C4684	127	9/20/2005	B1FRW5	F05-003	D&D-30838	East of 218-W-4C Burial Ground
		127	9/20/2005	B1FRW6			
		169	9/20/2005	B1FRW7			
		169	9/20/2005	B1FRW8			
		235	9/22/2005	B1FRW9			
		235	9/22/2005	B1FRX0			
W11-47	C4990	90	1/13/2006	B1JHB5	F05-003	D&D-30838	East of T Tank Farm
		90	1/13/2006	B1JHB6			
		133	1/18/2006	B1JHB9			
		133	1/18/2006	B1JHC0			
		235	2/8/2006	B1JHC1			
		235	2/8/2006	B1JHC2			

Table 2-14. Soil-Vapor Samples Collected During Fiscal Year 2001 to Fiscal Year 2006 Well Drilling. (3 Pages)

Well Name *	Well ID	Top of Sample Depth (ft)	Sample Date	HEIS Number	SAF	Reference	Location
W15-224	C4986	116	2/9/2006	B1JN36	F05-003	D&D-30838	East of 218-W-4B Burial Ground
		116	2/9/2006	B1JN37			
		144.7-146.7	2/14/2006	B1JN38			
		144.7-146.7	2/14/2006	B1JN39			
		228-230	2/15/2006	B1JN40			
		228-230	2/15/2006	B1JN41			
-	C4183	75.5	3/1/2005	B1CKM9	F05-003	D&D-25461	216-Z-7 Crib
		96.5	3/3/2005	B1CKN3			
		117.5	3/4/2005	B1CKN7			
		149.4	3/8/2005	B1CKP1			
		170	3/14/2005	B1CKP5			
		195	3/18/2005	B1CKP9			
		219	3/24/2005	B1CPR0			
W10-25	C4987	88	4/6/2006	B1JN33	F05-003	D&D-30838	East of 218-W-3A Burial Ground
		88	4/6/2006	B1J2M0			
		122	4/6/2006	B1JN34			
		122	4/6/2006	B1J2M1			
W10-31	C5194	235	4/27/2006	B1JN35	F05-003	D&D-30838	East of 218-W-3A Burial Ground
		235	4/27/2006	B1J2M2			
-	C3102	225	7/19/2001	B12D87	B01-097	BHI-01606	216-T-26 Crib

* Well prefix 299- omitted.

HEIS = Hanford Environmental Information System database.

ID = identification (number).

SAF = Sampling Authorization Form (number).

SAP = sampling and analysis plan (DOE/RL-2001-01, Appendix D).

BHI-01606, Borehole Summary Report for Borehole C3102 in the 216-T-26 Crib, 200-TW-1 Scavenged Waste Group Operable Unit.

BHI-01631, Carbon Tetrachloride Field Investigation Report for Drilling in the Vicinity of the PFP and the 216-Z-9 Trench.

D&D-25461, 200-LW-1 and 200-LW-2 Operable Units - Borehole Summary for Boreholes in the 216-S-20, 216-T-28, and 216-Z-7 Crib.

D&D-30838, 200-PW-1 Operable Unit Report on Step II Sampling and Analysis of the Dispersed Carbon Tetrachloride Vadose Zone Plume.

Table 2-15. 1991 Active Soil-Vapor Sample Locations
Around the 216-Z-1A / 216-Z-18 Areas.

Point ID	Sample Date	Easting (m)	Northing (m)
Z18S-1	3/14/1991	566438.5	135244.3
Z18C-1	3/14/1991	566437.9	135284.6
Z18E-1	3/14/1991	566488.2	135284.6
Z18E-2	3/14/1991	566498.5	135284.6
Z18E-3	3/14/1991	566515.3	135326.6
Z18N-1	3/14/1991	566430.9	135327.2
Z18N-10	3/14/1991	566389.1	135419.9
Z18N-11	3/14/1991	566430.9	135474.2
Z18N-12	3/14/1991	566389.1	135475.1
Z18N-2	3/14/1991	566488.8	135333.6
Z18N-3	3/14/1991	566430.9	135350.7
Z18N-4	3/14/1991	566389.1	135336.1
Z18N-5	3/14/1991	566488.8	135367.8
Z18N-6	3/14/1991	566513.2	135367.8
Z18N-7	3/14/1991	566430.9	135409.2
Z18N-8	3/14/1991	566389.1	135369.6
Z18N-9	3/14/1991	566389.1	135396.1
Z18W-1	3/14/1991	566390.3	135284.6
Z18W-2	3/14/1991	566371.7	135320.5
Z18W-3	3/14/1991	566357.1	135318.7
Z18W-4	3/14/1991	566364.1	135284.6
Z18W-5	3/14/1991	566364.4	135365.9

3.0 REMEDIAL INVESTIGATION RESULTS

This chapter describes the hydrogeologic framework in the Plutonium/Organic-Rich Group OU and the nature and extent of contamination at the four representative waste sites and for the dispersed carbon tetrachloride vadose-zone plume evaluated during the RI. The information presented in this chapter consists of site-specific data (e.g., geologic logs, soil and soil-vapor sampling results) collected during the RI and existing information derived from DOE/RL-98-28, DOE/RL-2001-01, and other 200 Areas and site-specific reports.

3.1 HYDROGEOLOGIC FRAMEWORK

This section summarizes the geology and hydrogeology associated with the 200 Areas inclusive of the Plutonium/Organic-Rich Group OU. Additional information on the hydrogeologic setting of the OU can be found in the Implementation Plan (DOE/RL-98-28, Appendix F), the Work Plan (DOE/RL-2001-01, Section 2.1), and other documents as cited in the text.

3.1.1 Topography

The 200-PW-1, 200-PW-3, and 200-PW-6 OUs include wastes sites located in the 200 East and 200 West Areas of the Hanford Site. The 200 Areas are located on a broad, relatively flat area that constitutes a local topographic high commonly referred to as the 200 Areas Plateau (Figure 3-1). The plateau is a giant flood bar (Cold Creek Bar) that was formed during cataclysmic ice-age floods from glacial Lake Missoula. The flood bar may have started forming during the earliest floods 1 to 2 million years ago. The Cold Creek Bar trends generally east-west, with elevations between 197 and 225 m (647 to 740 ft). The plateau drops off rather steeply to the north and east into a former flood channel that runs east-southeast with elevation changes of between 15 and 30 m (50 and 100 ft). The plateau gently decreases in elevation to the south into the Cold Creek valley and to the east toward the Columbia River. Most of the 200 West Area and the southern half of the 200 East Area are situated on the Cold Creek Bar, while the northern half of the 200 East Area lies on the edge of a former flood channel.

A secondary flood channel running south from the main channel bisects the 200 West Area. The buried former river and flood channels may provide preferential pathways for contaminant movement in the vadose zone and groundwater. More detail on the physical setting of the 200 Areas and vicinity is provided in the Implementation Plan, Appendix F (DOE/RL-98-28).

Waste sites in the 200 West Area are situated on a relatively flat area within the secondary flood channel that bisects the 200 West Area. Surface elevations range from approximately 201 to 217 m (660 to 712 ft). Waste-site surface elevations in the 200 East Area range from about 189 m (620 ft) in the northern portion to about 220 m (720 ft) in the southern portion. The ground surface in the 200 East Area slopes gently to the northeast.

3.1.2 Geology Summary

The 200 East and 200 West Areas of the Hanford Site are located within the Pasco Basin, a relatively large depression in southeastern Washington. Over the last 16 million years, the basin filled with materials that form rocks (i.e., volcanic lava flows) and unconsolidated sediments (e.g., silt, sand, gravel). Beneath the ground surface, major geologic units of interest (from oldest to youngest) include the Elephant Mountain Member basalt of the Saddle Mountains Basalt Formation, Ringold Formation, CCU, Hanford formation, and surficial deposits (Figure 3-2).

Basalt is a volcanic rock extruded from the earth during volcanic events. The Elephant Mountain Member basalt is the uppermost basalt unit encountered beneath the 200 East and 200 West Areas of the Hanford Site and generally has been the deepest geologic unit penetrated by RIs. The basalt is laterally continuous beneath the 200 East and 200 West Areas except for a relatively small area north of the 200 East Area boundary, where the basalt is not found because it most likely was removed by subsequent erosion.

The Ringold Formation is a semiconsolidated to unconsolidated sedimentary deposit. It consists of heterogeneous deposits of clay, silt, sand, gravel, and cobbles deposited by old rivers and lakes after the basalt was deposited. The Ringold Formation is important to the study area, because typically it is the unit where groundwater is located in the 200 West Area. Wells drilled to sample groundwater typically are completed within the Ringold Formation.

Above the Ringold Formation, the CCU is encountered. The CCU comprises old river, windblown, and soil deposits. The main divisions of the CCU are the lower caliche and the upper silt. Caliche generally comprises ancient soil in which minerals have leached to lower soil horizons. The leached minerals, typically calcium carbonate, accumulate in the lower horizons and cement the soil grains together, forming a "hardpan" layer. The CCU caliche within the study area typically contains calcium carbonate cement and other materials such as sand, silt, and clay in a hardened matrix. However, the presence and amount of calcium carbonate cement is variable, so the physical properties of this unit vary from "soil like" to "rock like". The CCU is an important unit in the study area, because these finer grained geologic deposits impede the vertical migration of liquid and contaminants in the subsurface beneath the waste site. The CCU generally is absent beneath the 200 East Area because of nondeposition or erosion subsequent to deposition.

The Hanford formation is found beneath the study area above the CCU, or above the Ringold Formation where the CCU is not present. The Hanford formation comprises heterogeneous mixtures of silt, sand, gravel, cobbles, and boulders deposited during Pleistocene (Ice Age) floods. Clastic dikes can be present within the Hanford formation. Clastic dikes are subvertical intrusions of sediment into overlying or underlying sediments. The clastic dikes also may impede or enhance the migration of liquid and contaminants in the subsurface. Within the Hanford formation are localized lenses of silt and very fine sands (i.e., fine-grained deposits) that also influence the movement of liquids and contaminants in the subsurface. The Hanford formation is important to the study area, because it is the geologic unit directly beneath the waste sites that contamination passed through to reach the CCU and groundwater.

Overlying the Hanford formation are surficial deposits that mostly comprise wind blown (eolian) silt and sand. Fill material also was placed at some locations within the 200 East and 200 West Areas and consists of reworked Hanford formation sediments.

A simplistic model of contaminant transport (i.e., movement) in the subsurface beneath the 200 East and West Areas would consist of liquid materials being disposed on or below the ground surface. The contamination then percolates through the unconsolidated sediments (i.e., the Hanford formation, CCU, and upper Ringold Formation units) and ultimately to the groundwater. The unsaturated geologic materials above the groundwater collectively are referred to as the vadose zone. Transport of contamination within the vadose zone is a relatively complex process influenced by the physical and chemical properties of both the soil and contamination.

Some of the contamination in the liquid disposed of at the ground surface (e.g., carbon tetrachloride) can evaporate (volatilize) at the ground or during vertical movement through the soil. The remaining contamination moves vertically through the vadose zone. However, as the contamination passes through the different (heterogeneous) geologic layers in the vadose zone, it spreads out in all directions (disperses) based on the soil and contamination properties. When contamination encounters finer grained materials (silt layers and the CCU), the contamination spreads out laterally until a vertical pathway is found that allows the contamination to continue to move vertically downward. When the contamination reaches the water table, it disperses and moves with the groundwater. Groundwater flow beneath the 200 East and 200 West Areas is generally toward the Columbia River.

Because of the different depths and the varying material properties of the geologic units beneath the 200 East and 200 West Areas, various subsurface access methods were used to reach different depths and achieve the sampling goals at the different waste sites investigated for this RI. These subsurface access methods are described in this RI report. In general, percussion probe drilling technology (i.e., GeoProbe) is used to reach depths of less than 15 m (50 ft) bgs. CPT was used to reach depths of about 23 m (75 ft) below ground surface. The HHR, EAPS, and drilling technologies (e.g., sonic or cable tool drilling) were used to reach the CCU and the deeper vadose zone down to the groundwater.

3.1.3 Geology

The 200-PW-1, 200-PW-3, and 200-PW-6 OUs are located in the Pasco Basin, one of several structural and topographic basins of the Columbia Plateau. Basalts of the Columbia River Basalt Group and a sequence of suprabasalt sediments underlie the representative waste sites and the dispersed carbon tetrachloride vadose-zone plume. From oldest to youngest, the major geologic units of interest are the Elephant Mountain Member of the Saddle Mountains Basalt, Columbia River Basalt Group, the Ringold Formation, the CCU, the Hanford formation, and surficial deposits. Figure 3-3 shows a generalized stratigraphic column for the 200 Areas.

Elephant Mountain Member. The Elephant Mountain Member of the Saddle Mountains Basalt Formation is the uppermost basalt unit (i.e., bedrock) in the 200 Areas (DOE/RL-98-28, Appendix F). Except for a small area north of the 200 East Area boundary where it has been

eroded away, the Elephant Mountain Member is laterally continuous throughout the 200 Areas. The RI field investigations did not penetrate to the basalt.

Ringold Formation. The Ringold Formation consists of an interstratified fluvial-lacustrine sequence of unconsolidated to semiconsolidated clay, silt, sand, and granule-to-cobble gravel deposited by the ancestral Columbia River (PNNL-12261, *Revised Hydrogeology for the Suprabasalt Aquifer System 200-East Area and Vicinity, Hanford Site, Washington*, and PNNL-13858). These sediments, shown in Figure 3-3, consist of four major units (from oldest to youngest): the fluvial gravel and sand of Unit 9 (basal coarse); the buried soil horizons, overbank, and lake deposits of Unit 8 (lower mud); the fluvial sand and gravel of Unit 5 (upper coarse); and the lacustrine mud of Unit 4 (upper fines). Units 9 and 5 consist of silty-sandy gravel with secondary lenses and interbeds of gravelly sand, sand, and muddy sands to silt and clay. Unit 8 (lower mud) consists mainly of silt and clay. Unit 4 (upper fines) consists of silty over-bank deposits and fluvial sand. Units 6 and 7 are not present beneath the 200 West and East Areas; Unit 4 is not present in the 200 East Area, and it is discontinuous in the 200 West Area (PNNL-12261 and PNNL-13858). The two RI boreholes at the 216-Z-9 Trench penetrated into the Ringold Formation Unit 5. The RI borehole at the 216-A-8 Crib penetrated into Ringold Unit 9. Boreholes drilled as part of the carbon tetrachloride dispersed-plume investigation also penetrated into the Ringold Formation Unit 9.

Cold Creek unit. The CCU is the recent standardized name for several post-Ringold Formation and pre-Hanford formation units present beneath a portion of the 200 East and West Areas (DOE/RL-2002-39, *Standardized Stratigraphic Nomenclature for Post-Ringold Formation Sediments Within the Central Pasco Basin*). The CCU includes the sediments formerly identified as the Plio-Pleistocene unit, caliche, early Palouse soil, pre-Missoula gravels, and sidestream alluvial facies in previous site reports. The CCU has been divided into five lithofacies: fine-grained, laminated to massive (fluvial-overbank and/or eolian deposits, formerly the early Palouse soil); fine- to coarse-grained, calcium-carbonate cemented (calic paleosol, formerly the caliche); coarse-grained, multilithic (mainstream alluvium, formerly the pre-Missoula gravels); coarse-grained, angular, basaltic (colluvium); and coarse-grained, rounded, basaltic (sidestream alluvium, formerly sidestream alluvial facies) (DOE/RL-2002-39). The two RI boreholes at the 216-Z-9 Trench penetrated the CCU. The RI borehole drilled to investigate the 216-A-8 Crib did not encounter the CCU, because it is not present in the vicinity of the 216-A-8 Crib.

Hanford formation. The Hanford formation is the informal stratigraphic name used to describe the Pleistocene cataclysmic flood deposits in the Pasco Basin (DOE/RL-2002-39). The Hanford formation consists predominantly of unconsolidated sediments that range from boulder-size gravel to sand, silty sand, and silt. The sorting ranges from poorly sorted (for gravel facies) to well sorted (for fine sand and silt facies). The Hanford formation is divided into three main facies associations: interbedded sand- to silt-dominated (formerly called the Touchet beds or slackwater facies); sand-dominated (formerly called the sand-dominated flood facies); and gravel-dominated (formerly called the Pasco gravels), which have been further subdivided into 11 textural-structural lithofacies (DOE/RL-2002-39). Beneath the representative waste sites and the dispersed carbon tetrachloride vadose-zone plume, the Hanford formation includes all three facies associations. The gravel-dominated facies are cross-stratified, coarse-grained sands and granule-to-boulder gravel. The gravel is uncemented and matrix-poor. The sand-dominated

facies are well-stratified fine- to coarse-grained sand and granule gravel. Silt in these facies is variable and may be interbedded with the sand. Where the sand and silt content is low in the gravel-dominated facies, an open-framework texture is common. Clastic dikes are common in the Hanford formation but rare in the Ringold Formation (DOE/RL-98-28; DOE/RL-2002-39). They appear as vertical to subvertical sediment-filled structures, especially within sand- and silt-dominated units. The Hanford formation is locally overlain by veneers of surficial deposits. The two RI boreholes at the 216-Z-9 Trench and the RI borehole at the 216-A-8 Crib penetrated into the Hanford formation. In general, from shallowest to deepest, the Hanford formation units encountered beneath the 200 West Area included an upper fine grained unit (HFUF), the upper gravel-dominated unit (H1), a sand-dominated unit (H2), and a lower gravel-dominated unit (H3). Not all of these units are laterally continuous beneath the site.

The cataclysmic floodwaters that deposited sediments of the Hanford formation locally reshaped the topography of the Pasco Basin. The floodwaters deposited a thick sand and gravel bar (Cold Creek Bar) that constitutes the higher southern portion of the 200 Areas, informally known as the 200 Areas Plateau. In the waning stages of the ice-age floods, these floodwaters also eroded a channel north of the 200 Areas in the area currently occupied by West Lake and the former Gable Mountain Pond. Both pre-Hanford formation erosion and the floodwaters removed all of the Ringold Formation from this area and deposited Hanford formation sediments directly over basalt.

Surficial Deposits. Surficial deposits include Holocene eolian sheets of sand that form a thin veneer over the Hanford formation across the site, except in localized areas where the deposits are absent. Surficial deposits consist of very fine- to medium-grained sand to occasionally silty sand. Silty deposits less than 1 m (approximately 3 ft) thick also have been documented at some open trench waste sites where fine-grained, wind-blown material settled out through standing water over many years (DOE/RL-98-28, Appendix F). Fill material was placed in and over some waste sites during construction and for contamination control. The fill consists of reworked Hanford formation sediments and/or surficial sand and silt.

3.1.4 Hydrostratigraphy

The focus of this RI was on the distribution of contaminants within the vadose zone beneath the representative waste sites and within the dispersed carbon tetrachloride vadose-zone plume. Vadose-zone hydrostratigraphic units in the 200-PW-1, 200-PW-3, and 200-PW-6 OUs include the Ringold Formation, the CCU, the Hanford formation, and surficial deposits (see Figure 3-3). The base of the unconfined aquifer typically is the top of the Ringold Formation Unit 8 (lower mud) at the 200 West Area and the top of the basalt (Elephant Mountain Member) at the 200 East Area.

Vadose Zone. The vadose zone is the area between the ground surface and the water table. The vadose zone is approximately 104 m (340 ft) thick in the southern section of the 200 East Area and thins to the north to as little as 0.3 m (1 ft) near West Lake (just south of the west end of Gable Mountain on Figure 3-1). Sediments in the vadose zone are dominated by the Hanford formation, although the CCU and part of the Ringold Formation are above the water table in the 200 West Area. Because erosion during cataclysmic flooding removed much of the Ringold

Formation north of the central part of the 200 East Area, the vadose zone is dominantly composed of Hanford formation sediments between this area and Gable Mountain. The basalt also projects above the water table in the northern part of the 200 East Area.

In the 200 West Area, the vadose-zone thickness ranges from 40 to 75 m (132 to 246 ft). Sediments in the vadose zone are the Ringold Formation, the CCU, and the Hanford formation. Erosion during cataclysmic flooding removed some of the CCU and the Ringold Formation, especially in the northern part of the 200 West Area.

Historically, and as recently as the early 1990s, perched water has been documented above the CCU at locations in the 200 West Area. While liquid-waste disposal facilities were operating, localized areas of saturation or near saturation were created in the soil column. With the reduction of artificial recharge in the 200 Areas, downward flux of liquid in the vadose zone beneath these waste sites has been decreasing. However, moisture content in the vadose zone is expected to remain elevated above preoperational conditions for some time.

A limited number of soil samples were collected to determine moisture content, grain-size distribution, bulk density, and specific gravity. The physical-property testing data collected during the RI is summarized in Appendix B.

Unconfined Aquifer. The top of the unconfined aquifer in the 200 Areas occurs within the Ringold Formation, the CCU, or the Hanford formation, depending on location. The base of the unconfined aquifer is the top of the Ringold Formation Unit 8 (lower mud), or the top of the basalt where Unit 8 is absent at the 200 West Area, and the top of the basalt at the 200 East Area. Groundwater in the unconfined aquifer flows from recharge areas where the water table is higher (west of the Hanford Site) to areas where it is lower, near the Columbia River (PNNL-15670, *Hanford Site Groundwater Monitoring for Fiscal Year 2005*). In the northern half of the 200 East Area, the water table is present within the Hanford formation, except in areas where basalt extends above the water table. In the central and southern sections of the 200 East Area, the water table is located near the contact between the Ringold Formation and the Hanford formation.

Depth to groundwater in the 200 East Area and vicinity ranges from about 54 m (177 ft) near B Pond to about 104 m (340 ft) near the southern part. The water table across the 200 East Area is very flat (Figure 3-4), making it difficult to determine groundwater flow direction based on water-level measurements from monitoring wells. The configuration of contaminant plumes, however, indicates that groundwater flows to the northwest in the northern half of the 200 East Area and to the east/southeast in the southern half of the 200 East Area. Identifying the specific location of the groundwater divide between the northern and southern sections is hampered by the flat water table. Highly transmissive Hanford formation sediments are the cause of the flat water table in the 200 East Area (PNNL-15670). The water table has been declining since surface liquid discharges were terminated in the 200 East Area in the mid-1990s. In the 200 East Area, the elevation of the water table declined by an average of 0.13 m (0.4 ft) from March 2004 to March 2005. This is greater than the previous annual decline (0.09 m [0.3 ft] from March 2003 to March 2004) and is below the average rate of decline observed from June 1997 to March 2002 (0.17 m/yr [0.56 ft/yr]) (PNNL-15670).

Groundwater beneath the 200 West Area occurs primarily in the Ringold Formation. Depth to water varies from about 40.2 m (132 ft) to greater than 75 m (246 ft). Groundwater flow is predominately to the east (Figure 3-5). The surface elevation of the water table beneath the 200 West Area currently is declining at a rate of 0.36 m/yr (1.2 ft/yr) in those areas not influenced by pump-and-treat remediation systems (PNNL-15670).

Recharge to the unconfined aquifer within the 200 Areas is from artificial sources and, less significantly, from natural precipitation. Estimates of recharge from precipitation range from 0 to 10 cm/yr (0 to 4 in/yr) and are largely dependent on soil texture and the type and density of vegetation. PNL-5506, *Hanford Site Water Table Changes 1950 through 1980, Data Observation and Evaluation*, reports that between 1943 and 1980, 6.33×10^{11} L (1.67×10^{11} gal) of liquid wastes were discharged to the soil column at the Hanford Site. Most sources of artificial recharge were terminated in 1995. The artificial recharge that does continue largely is limited to liquid discharges from sanitary sewers, two state-approved land-disposal structures (one east of the 200 East Area and one north of the 200 West Area), and 140 small-volume, uncontaminated miscellaneous liquid discharge streams.

3.1.5 Summary of Hydrogeologic Conditions at Representative Waste Sites

3.1.5.1 216-Z-1A Tile Field

The 216-Z-1A Tile Field is located in the 200 West Area within a north-south secondary flood channel. The surface elevation around this site is approximately 207 m (679 ft). Stratigraphic units of interest are, in descending order, the Hanford formation, the CCU, and the Ringold Formation Unit 5. The top of the unconfined aquifer is in the silty sandy gravels of Ringold Formation Unit 5, and the base of the aquifer is the top of Ringold Formation lower mud (Unit 8). The stratigraphy in the vicinity of the 216-Z-1A Tile Field shown in Figure 3-6 is based on the borehole log from well 299-W18-7, located adjacent to the tile field. The upper gravel-dominated Hanford formation (H1) was encountered from the ground surface to approximately 18 m bgs, underlain by the sand-dominated Hanford formation (H2, 18 to 29 m bgs), the lower gravel-dominated Hanford formation (H3, 29 to 37 m bgs), the CCU silt and caliche units from approximately 37 to 42 m bgs, and the gravelly Ringold Formation Unit 5.

Groundwater beneath the 216-Z-1A Tile Field is approximately 72 m (235 ft) bgs, based on nearby well 299-W18-16. The stratigraphy generally is consistent with the borehole logs from other wells within and adjacent to the tile field.

3.1.5.2 216-Z-9 Trench

The 216-Z-9 Trench is located in the 200 West Area within a north-south secondary flood channel. The surface elevation of this site is approximately 201 m (660 ft). Stratigraphic units of interest are, in descending order, the Hanford formation, the CCU, and the Ringold Formation Unit 5. The top of the unconfined aquifer is in the silty sandy gravel of Ringold Formation Unit 5, and the base of the aquifer is the top of Ringold Formation lower mud (Unit 8). The stratigraphy shown in Figure 3-7 is based on the borehole log from well 299-W15-46, which was drilled on the south side of the trench for this RI. The upper 1.2 m (4 ft) of this well encountered

backfill material used for drill-pad construction, which comprised crushed rock, sand, and silt. Below the drill-pad fill, fine grained sands and silts of the Hanford formation upper fines (HFUF) were encountered to a depth of 6 m (20 ft). Below the HFUF, to a depth of 10.5 m (34.5 ft), the sediments encountered were the upper gravels of the Hanford formation (H1). These sediments were dark gray fine-to-coarse sand and gravelly sand. The interval from 10.5 to 33 m (34.5 to 108.5 ft) bgs consisted of sediments from the sand-dominated sequence of the Hanford formation (H2). A layer of dense, well-compacted, dark brown silt was encountered from 19.8 to 20.4 m (65 to 67 ft) bgs. The interval from 33 to 36.1 m (108.5 to 118.5 ft) bgs consisted of the CCU. Dense, well-compacted, dark brown silt and sand comprising the upper silt-dominated facies of the CCU was encountered from 33 to 35.5 m (108.5 to 116.5 ft) bgs. The CCU caliche was encountered from 35.5 to 36.1 m (116.5 to 118.5 ft) bgs. The interval from 36.1 to 69.5 m (118.5 to 228 ft) bgs consisted of grayish brown sandy gravel with variable silt, sand, and sandy gravel of the Ringold Formation Unit 5. On October 11, 2004, the water table was measured at 67 m (220 ft) bgs. The stratigraphy generally is consistent with the borehole logs from other wells adjacent to the trench.

Figure 3-8 shows the stratigraphy from the slant well (299-W15-48) drilled at the 216-Z-9 Trench for this RI. Groundwater beneath the 216-Z-9 Trench is about 67 m (220 ft) bgs at nearby well 299-W15-46.

3.1.5.3 241-Z-361 Settling Tank

The 241-Z-361 Settling Tank is located approximately 35 m (115 ft) north of the 216-Z-1A Tile Field in the 200 West Area. The hydrogeologic conditions at this representative waste site are the same as those for the 216-Z-1A Tile Field (Section 3.1.5.1).

3.1.5.4 216-A-8 Crib

The 216-A-8 Crib is located approximately 177 m (580 ft) east of the A Tank Farm in the 200 East Area, at a surface elevation of approximately 198 m (650 ft). The stratigraphic unit of interest is the Hanford formation. The top of the unconfined aquifer is in the Ringold Formation Unit 9, and the base of the aquifer is the top of the basalt. The stratigraphy shown in Figure 3-9 is based on the log from Borehole C4545, which was drilled through the crib for this RI. The upper portion of Borehole C4545 encountered 0.5 m (1.5 ft) of crushed rock, used to construct the drill pad, overlying the crib construction backfill consisting of 1.4 m (4.5 ft) of gravelly sand, 2.1 m (7.0 ft) of sand, and 1.8 m (6.0 ft) of very coarse gravel. The interval beneath the crib construction backfill, extending from 5.8 to 54.3 m (19.0 to 178.0 ft) bgs, consists of well-stratified, very fine- to coarse-grained sands belonging to the sand-dominated facies of the Hanford formation (H2). Several intervals within Hanford formation H2 contain finer grained silty sands. The interval from 54.3 to 74.8 m (178.0 to 245.5 ft) bgs consists of the gravel-dominated facies of the Hanford formation (H3). These gravels consist of poorly sorted, angular to sub-rounded heterolithic cobbles (basalts and other dominantly igneous lithologies). The interval from 74.8 to 80.6 m (245.5 to 264.5 ft) bgs (total depth) consists of sandy gravels of the Ringold Formation Unit 9. These sediments consist of clast- to matrix-supported pebble (2 to 64 mm) to cobble (64 to 256 mm) heterolithic gravels with a fine- to coarse-grained sandy matrix. Lenticular sand and silt interbeds also are characteristic of the Ringold Formation Unit 9. The stratigraphy underlying the 216-A-8 Crib is shown in Figure 3-9. The stratigraphy

generally is consistent with the borehole logs from other wells adjacent to the crib. Groundwater beneath the 216-A-8 Crib was about 80 m (262 ft) bgs at Borehole C4545.

3.2 OPERABLE UNIT CONTAMINATION

3.2.1 Nature and Extent of Contamination in the 216-Z-9 Trench

The nature and extent of contamination summarized in this section is representative of the 216-Z-9 Trench in the 200-PW-1 OU. The nature and extent of contamination at this location is based on the evaluation of all available data. Available data for this representative waste site include historical and new geophysical logging results, new soil and soil-vapor sampling results, numerical-simulation results, and other data-collection and -analysis results. The data and analysis were integrated to develop and refine a contaminant distribution model for the representative waste site.

The following provides a summary of important RI findings related to the 216-Z-9 Trench.

- Approximately 58 kg of plutonium were removed from the 216-Z-9 Trench as part of trench floor mining activities completed from 1976 to 1978. An estimated 48 kg of plutonium remains in the trench.
- Radioactive contamination was identified in several boreholes using geophysical logging methods. The contamination was detected to a maximum depth of 59.4 m (195 ft) bgs.
- Radioactive contamination in soil samples was detected to a maximum depth of 37.2 m (122 ft) bgs.
- Soil-vapor samples collected from boreholes drilled in the vicinity of the trench revealed carbon tetrachloride and other organic vapors at concentrations up to 20,910 ppmv.
- Soil samples from boreholes near the 216-Z-9 Trench revealed carbon tetrachloride in soil up to 380 mg/kg. This same soil sample (from 19.4 to 20.1 m or 63.5 to 66 ft bgs) contained carbon tetrachloride DNAPL based on both field screening and soil-equilibrium evaluations. Maximum concentrations of COPCs detected in soil samples are summarized in Section 3.2.1.3.
- An SVE system has been operated near the 216-Z-9 Trench as an interim remedial action. Between March 1993 and October 2005, 54,183 kg of carbon tetrachloride were removed by the SVE system.
- In general, the highest concentrations of COPCs detected in the vadose-zone soils have been in fine-grained layers (i.e., silts and the CCU).

- Geophysical methods were used to map and contour the surface of key geologic layers beneath the trench. The subsurface contours of these layers is being used to guide the HHR soil sampling investigation of the CCU for carbon tetrachloride DNAPL.

3.2.1.1 Historical Contaminant Investigation Summary

Between 1954 and 1967, nine wells were drilled around the 216-Z-9 Trench. Scintillation probe profiles were completed on each of the borings at least once between 1963 and 1970, and at least once more between 1973 and 1976. Contamination was detected in two borings (wells 299-W15-8 and 299-W15-86) at 15.2 to 38.1 m (49.5 to 125 ft) bgs. The profiles are available in ARH-ST-156, *Evaluation of Scintillation Probe Profiles from 200 Area Crib Monitoring Wells*.

Sampling for the collection of data necessary to evaluate the mass of plutonium in the trench was conducted through the trench roof during 1959, 1961, and 1963. Concern over the potential for a critical mass accumulation of plutonium on the floor of the trench prompted an additional sampling event through the trench roof during 1973. The maximum depth of penetration for these samples was 3 m (9 ft) below the trench floor. Both plutonium and americium were found in relatively high concentrations from the bottom of the trench to total depth. Samples from the bottom of the trench to 15 cm (6 in.) below the floor yielded Pu-239 concentrations of up to 1.2×10^{12} pCi/L and Am-241 concentrations of up to 1.4×10^{11} pCi/L. At a depth of 3 m (9 ft), Pu-239 and Am-241 concentrations were 2.0×10^9 pCi/L and 1.4×10^8 pCi/L, respectively. ARH-2915 reports that the soil pH was 4.1 at a depth of 2.4 m (8 ft) and generally acidic through the 3 m (9-ft) soil column tested below the base of the trench. Details of the sampling and presentation of the analytical results are found in ARH-2915. The uppermost 30 cm (12 in.) of the trench floor was subsequently excavated in 1976 (RHO-ST-21). See Section 2.1.3 for discussion of mining results.

Radioactive contamination was identified in two borings during geophysical logging of borings proximal to the trench, well 299-W15-8 in 1992 and well 299-W15-95 in 1998. Geophysical logging of well 299-W15-8 revealed Cs-137 from 15.2 to 59.4 m (50 to 195 ft) bgs (never exceeding 1 pCi/g), Pa-233 between 15.5 and 37 m (51 and 121 ft) bgs (maximum activity was 20 pCi/g at 35 m [115 ft] bgs), and Pu-239 from 15.1 to 32.3 m (50 to 106 ft) bgs (maximum activity of 300,000 pCi/g was detected 15.5 m [51 ft] bgs) (WHC-SD-EN-TI-021, *Results of Spectral Gamma-Ray Logging of Select Boreholes for the 200 Aggregate Area Management Study*). Geophysical logging of well 299-W15-95 detected Cs-137 near the ground surface at an activity of <1 pCi/g (PNNL-11978, *Results of 1998 Spectral Gamma-Ray Monitoring of Boreholes at the 216-Z-1A Tile Field, 216-Z-9 Trench, and 216-Z-12 Crib*). Geophysical logging of well borings 299-W15-82, 299-W15-84, and 299-W15-85 in 1998 did not detect any artificial radionuclides (PNNL-11978). However, it appears that americium was misinterpreted as Cs-137 in the geophysical logs. The geophysical logs currently are being reinterpreted, and the new results will be presented in the FS. No deep vertical borings have been drilled through the footprint of the trench because of its design. The trench is a hollow, open enclosure nearly 6.4 m (21 ft) in depth at the maximum, with a concrete slab roof supported by six columns. Low levels of plutonium and americium were detected in groundwater from well 299-W15-8 on May 7, 1990, and November 13, 1991, before the groundwater table declined below the elevation of the bottom of the well and the well went dry.

Analyses of soil samples from borings completed during 1992 and 1993 (wells 299-W15-216, 299-W15-217, 299-W15-218, 299-W15-219, 299-W15-220, and 299-W15-223) and deepened in 2001 (wells 299-W15-84 and 299-W15-95) indicate that radioactive contaminants are present within two intervals of one boring near the southwest edge of the trench (WHC-SD-EN-TI-063). Borehole well 299-W15-217, approximately 12 m (39 ft) west of the trench, contains two lead and two radium isotopes, along with gross alpha and gross beta contamination; maximum concentrations of metals and gross alpha are found at depths of 35.3 and 37.1 m (116 and 122 ft) bgs, and maximum concentrations of gross beta are found at 16.6 m (54.5 ft) bgs. Groundwater samples collected from the southernmost borehole (well 299-W15-216) contained Co-60 (maximum of 2.19 pCi/L), Ru-106 (maximum of 29.5 pCi/L), Sb-125 (maximum of 6.84 pCi/L), and Cs-137 (maximum of 3.47 pCi/L). These contaminants could have been in the inventory from the 216-Z-9 Trench, although there are no direct data to support that conclusion.

During drilling of wells 299-W15-216, 299-W15-217, 299-W15-218, 299-W15-219, 299-W15-220, and 299-W15-223, soil-vapor and soil samples were collected for analyses of VOCs (carbon tetrachloride and associated breakdown products). Soil-vapor and soil samples also were collected from wells 299-W15-84 and 299-W15-95 when these wells were deepened in 2001. The highest carbon tetrachloride vapor concentrations detected within these boreholes were from well 299-W15-217 (7,126 ppmv from a depth of 24.7 m or 81 ft) and well 299-W15-218 (20,910 ppmv from a depth of 34 m or 111.8 ft, and 10,380 ppmv from a depth of 57.8 m or 189.7 ft). The highest concentrations of carbon tetrachloride detected in the soil samples were from well 299-W15-217 (37,817 µg/kg at a depth of 34.7 m or 114 ft), from well 299-W15-218 (15,794 µg/kg from a depth of 33.5 m or 110 ft), and from well 299-W15-219 (11,688 µg/kg from a depth of 34.9 m or 114.5 ft). The highest concentrations of carbon tetrachloride in soil vapor and soil generally were associated with finer grained units (i.e., Hanford formation silts and the CCU) within the vadose zone. These results are further discussed in Section 3.2.4.8.

A soil-vapor extraction system was installed in March 1993 and operated from that time to the present in the vicinity of the 216-Z-9 Trench. From March 1993 1991 to October 2005, 54,183 kg of carbon tetrachloride vapor was removed near the 216-Z-9 Trench by the SVE system (WMP-30426). Soil-vapor samples collected during operation of the SVE demonstrate that soil-vapor concentrations in the vicinity of the 216-Z-9 Trench have been decreasing over time. Soil-vapor sampling activities are summarized in Section 2.5.

3.2.1.2 New Geophysical Logging Summary

As part of the investigation activities completed during drilling of wells 299-W15-46 and 299-W15-48, geophysical logging using the SGLS was performed. The geophysical log data reports are included in Appendix E of WMP-26264 and WMP-30566, and the key findings are summarized below.

Well 299-W15-46 (C3426)

Pa-233, Am-241, and Pu-239 were the man-made radionuclides detected in borehole well 299-W15-46. No man-made radionuclides were detected below 36.6 m (120 ft). Pa-233, a

decay product of Np-237, was detected between 14.3 and 36.6 m (47 and 120 ft) with a maximum concentration of approximately 100 pCi/g at 36 m (118 ft).

Am-241 was detected from 14 to 18.6 m (46 to 61 ft), at concentrations ranging from 56,000 to 145,000 pCi/g. It also was detected almost continuously from 19.2 to 36 m (63 to 118 ft) at concentrations ranging from just above the metal-detection limit of approximately 20,000 to 400,000 pCi/g; the maximum concentration is measured at 35.4 m (116 ft).

Pu-239 was detected between 14.3 and 15.5 m (47 and 51 ft), with a maximum concentration of approximately 284,000 pCi/g at 14.6 m (48 ft). It also was detected almost continuously between 16.8 and 26.2 m (55 and 86 ft) at concentrations ranging from approximately 27,000 to 221,000 pCi/g; the maximum concentration is measured at 19.8 m (65 ft). Pu-239 also was detected at 33.5 and 35.4 m (110 and 116 ft) at concentrations of 41,000 and 58,000 pCi/g, respectively.

The passive neutron detector indicates elevated count rates between 14 and 36 m (46 and 118 ft). The highest count rates (4 to 5 counts per second) are detected at approximately 14.6, 33.5, and 35.4 m (48, 110, and 116 ft). At these depths Am-241, Pu-239, and Pa-233 also are detected. It is possible that these radionuclides and perhaps other isotopes of plutonium exist continuously throughout the relatively high-neutron count-rate interval (14 to 36 m [46 to 118 ft]) even where no isotope was identified at levels above the respective metal detection limits.

Well 299-W15-48 (C3427)

Pa-233, Am-241, Pu-239, and Pu-241 were the man-made radionuclides detected in borehole well 299-W15-48; Pu-240 also is inferred to exist. Pa-233, a decay product of Np-237, was detected between 15.2 and 38.7 m (50 and 127 ft) downhole (12.9 to 32.8 m or 42.4 to 107.7 ft vertical depth) with a maximum concentration of approximately 29 pCi/g at 40 m (118 ft) downhole (30.5 m or 100.1 ft vertical).

Am-241 was detected from 15.5 to 37.2 m (51 to 122 ft) downhole (13.2 to 31.5 m or 43.3 to 103.5 ft vertical) at concentrations ranging from 40,000 to 245,000 pCi/g; the maximum concentration is measured at 36.9 m (121 ft) downhole (31.3 m or 102.6 ft vertical). Low-energy gamma rays attributed to Am-241 were detected that normally would be severely attenuated by the 17/32-in.-thick steel and ¼-in. thick polyvinyl chloride casings in the borehole during the logging and by the borehole geophysical-tool housing itself. The fact that these gamma rays consistently were detected indicated that the source most likely originates inside the steel casing as a result of internal contamination from the drilling/sampling process. The internal contamination extends at least from approximately 9.8 m (32 ft) downhole to the bottom of the borehole at 43.9 m (144 ft) downhole (8.3 to 37.2 m or 27.1 to 122.1 ft vertical).

Pu-239 generally was detected between 15.5 and 37.2 m (51 and 122 ft) downhole (13.2 to 31.5 m or 43.3 to 103.5 ft vertical). The dominant interval is between 18.9 and 26.5 m (62 and 87 ft) downhole (16 to 22.5 m or 52.6 to 73.8 ft vertical) with a maximum concentration of approximately 657,000 pCi/g at 22 m (72 ft) downhole (18.6 m or 61.1 ft vertical).

Pu-240 and Pu-241 are created in the reactor by successive neutron captures on Pu-239. Because separation of these isotopes is very difficult, it is virtually certain that they will exist together in

the waste stream. If one assumes that the waste stream in this trench is dominantly weapons-grade plutonium (i.e., ~6 percent Pu-240), the maximum Pu-240 activity in this borehole would be estimated near 40,000 pCi/g. Because of the absence of a relatively high-yielding gamma ray from Pu-240, no direct measurement with the SGLS can be made.

Pu-241 concentrations are estimated to range between 2 and 10 pCi/g, which is consistent with the proportion for weapons-grade plutonium. This concentration is not determined directly, so the uncertainty is greater than for other radionuclides.

Because this borehole is known to be internally contaminated, probably on the inside of the steel casing, and the activity of this contamination cannot be quantified, it should be presumed that all the identified radionuclides could exist to some degree inside the casing. The effect of this internal contamination is to cause a slight overestimation of radionuclide concentrations.

The passive neutron detector indicated elevated count rates between 14.3 and 37.5 m (47 and 123 ft) downhole (12.2 to 31.8 m or 39.9 to 104.3 ft vertical). The highest count rates (4 counts per second) are detected where the highest Pu-239 concentrations are measured at approximately 19.2 m (63 ft) downhole (16.3 m or 53.4 ft vertical) and 21.3 m (70 ft) downhole (18.1 m or 59.4 ft vertical); at these depths Am-241 and Pa-233 also are detected. This count rate is considerably lower (4 vs 2,600 counts per second) than observed in other PFP waste disposal sites such as the 216-Z-1A Tile Field and the 216-Z-12 Crib. This suggests that the compounds in the 216-Z-9 Trench are in the form of nitrates or oxides rather than fluorides, as postulated for the other PFP waste disposal sites. Fluorine has a cross section for capturing alpha particles that is 100 times greater than that for the other light elements.

3.2.1.3 New Soil Analytical Results Summary

Well 299-W15-46

Radioactive COPCs for the 200-PW-1 OU were detected in the vadose zone at the 216-Z-9 Trench in Borehole C3426 (well 299-W15-46) to a depth of 57 m (186.3 ft) bgs. Background levels for the 200-PW-1 OU radionuclide COPCs are shown in Table 3-1. The maximum results for the Borehole C3426 samples are presented in Appendix A and are summarized in the following table, which presents the radionuclide COPCs detected above background levels (and those with no available background value) and the depth interval of the maximum concentration.

Radionuclide Contaminant of Potential Concern	Maximum Concentration (pCi/g)	Depth Interval (ft bgs)	
		Top	Bottom
Americium-241	309,000	109.5	112
Neptunium-237	28.9	109.5	112
Plutonium-238	657	109.5	112
Plutonium-239/240	115,000	63.5	66
Radium-228	2.79	109.5	112
Strontium-89,90	13.4	63.5	66
Technetium-99	18	47.5	50
Uranium-234	11.8	48.5	50
Uranium-235	0.13	119.5	122

Background levels for the 200-PW-1 OU nonradionuclide COPCs are shown in Table 3-2. The following table presents the nonradionuclide COPCs detected above background levels (and those with no available background value) and the depth interval of the maximum concentration.

Contaminant of Potential Concern	Maximum Concentration (mg/kg)	Depth Interval (ft bgs)	
		Top	Bottom
Arsenic	11	47.5	50
Cadmium	40.2	90	92.5
Chromium	162	119.5	122
Copper	26.3	119.5	122
Hexavalent Chromium	0.75	63.5	66
Lead	620	115	117.5
Mercury	1.02	174	176.5
Nickel	72.9	119.5	122
Selenium	3.76	119.5	122
Silver	2.88	174	176.5
Ammonium ion	192	109.5	112
Fluoride	7.8	90	92.5
Nitrate	5,910	109.5	112
Nitrite	12.1	47.5	50
Sulfate	456	63.5	66
Acetone	0.66	117	119.5
Carbon Tetrachloride	380	63.5	66
Chlorobenzene	0.00098	115	117.5
Chloroform	4.9	63.5	66
1,1-Dichloroethane	0.0011	115	117.5
Methyl Ethyl Ketone ^a	0.080	117	119.5
Methyl Isobutyl Ketone ^b	0.0012	117	119.5
Methylene Chloride	0.020	119.5	122
Tetrachloroethene	17	63.6	66
Toluene	0.0013	117	119.5
Trichloroethene	0.0011	115	117.5
Tributyl phosphate	2,100	63.5	66
Aroclor-1248	1.6	63.5	66
Oil and Grease	2,400	63.5	66

^a 2-Butanone (CAS 78-93-3).

^b 2-Pentanone, 4-Methyl (CAS 108-10-1).

Well 299-W15-48

Radioactive COPCs for the 200-PW-1 OU were detected in the vadose zone beneath the 216-Z-9 Trench in Borehole C3427 (well 299-W15-48) to a downhole depth of 42.7 m (140 ft) bgs. Background levels for the 200-PW-1 OU radionuclide COPCs are shown in Table 3-1. The maximum results for the Borehole C3427 samples are presented in Appendix A and are summarized below. The following table presents the radionuclide COPCs detected above background levels (and those with no available background value) and the depth interval of the maximum concentration.

Radionuclide Contaminant of Potential Concern	Maximum Concentration (pCi/g)	Downhole Depth Interval (ft bgs)	
		Top	Bottom
Americium-241	131,000	118.5	120.5
Neptunium-237	10.5	122.5	124.5
Plutonium-238	3,680	70	72
Plutonium-239/240	254,000	70	72
Radium-226	2.16	131.5	133
Radium-228	1.64	70	72
Total Beta Radiostrontium	1.18	131.5	133
Technetium-99	272	70	72
Thorium-232	1.89	135	140

Depth Interval = downhole depth (not converted to vertical).

Background levels for the 200-PW-1 OU nonradionuclide COPCs are shown in Table 3-2. The following table presents the nonradionuclide COPCs detected above background levels (and those with no available background value) and the depth interval of the maximum concentration.

Chemicals of Potential Concern	Maximum Concentration (ng/kg)	Downhole Depth Interval (ft bgs)	
		Top	Bottom
Arsenic	8.4	131.5	133
Bismuth	156	135	140
Cadmium	118	122.5	124.5
Chromium	22.8	52.5	54.5
Hexavalent Chromium	0.45	52.5	54.5
Lead	17	122.5	124.5
Mercury	0.799	100	102
Nickel	23.3	100	102
Selenium	2.93	131.5	133
Silver	1.23	135	140
Ammonium ion	21.5	135	140
Fluoride	51.4	118.5	120.5
Nitrate	6,990	100	102

Chemicals of Potential Concern	Maximum Concentration (mg/kg)	Downhole Depth Interval (ft bgs)	
		Top	Bottom
Phosphate	3.9	135	140
Sulfate	255	70	72
Acetone	2.9	131.5	133
Benzene	0.0037	70	72
Carbon Tetrachloride	6.3	128.5	130.5
Chloroform	0.36	131.5	133
Ethylbenzene	0.0008	73	75
Hydraulic Fluids (Grease)*	2,440	70	72
Normal Paraffins (greases and cutting oils)*			
Methyl Ethyl Ketone ^a	1.7	122.5	124.5
Methylene Chloride	0.140	100	102
Tetrachloroethene	0.22	70	72
Toluene	0.0038	131.5	133
Trichloroethene	0.0013	73	75
Tributyl phosphate	3,000	70	72
Xylene	0.003	73	75
Aroclor-1248	1.3	70	72

Depth Interval = downhole depth (not converted to vertical).

*Result reported for oil and grease.

^a 2-Butanone (CAS 78-93-3).

3.2.1.4 Contaminant Distribution Model

The preliminary contaminant distribution model presented in the work plan (DOE/RL-2001-01, Section 3.4) generally is supported by the RI data with some relatively minor changes (Figure 3-10). Based on the preliminary contaminant distribution model in the Work Plan, the highest radiological contamination was expected from the base of the trench to several meters below and then was expected to decrease with depth. For the radionuclides detected above background levels, the majority of the highest concentrations were reported at a depth of 34 m (in the upper part of the CCU silt unit) in well 299-W15-46, adjacent to the south side of the trench. These detected contaminant concentrations are deeper than initially postulated in the preliminary contaminant distribution model.

Relatively high concentrations of several semivolatile organic compounds, metals, and radionuclides were found to be present deeper in the vadose zone in well 299-W15-46, which also was predicted by the preliminary contaminant distribution model in the Work Plan. The highest concentrations appear to be associated with fine-grained layers within the Hanford formation and the CCU.

The soil sampling intervals, lithology, field screening measurements, and borehole geophysical logs for Boreholes C3426 and 3427 are shown in Figures 3-11 and 3-12, respectively. Vertical

concentration profile plots for those COPCs that had a detected value above background (and COPCs with no available background value) are shown in Figure 3-13 for Borehole C3426 (well 299-W15-46) and in Figure 3-14 for Borehole C3427 (299-W15-48).

The vadose-zone soil samples in wells 299-W15-46 and 299-W15-48 were field screened for visual indication of the presence of carbon tetrachloride as DNAPL, as discussed in Section 2.3 of WMP-26264 (for 299-W15-46) and WMP-30566 (for 299-W15-48). The only soil sample that had a positive field test for carbon tetrachloride DNAPL was a sample from 19.5 m (64 ft) bgs. This was the first time that positive evidence of carbon tetrachloride DNAPL was found at any location in the subsurface of the 200 West Area since the beginning of the carbon tetrachloride contamination investigation in the early 1990s. This sample was just above a thin silt layer that was found from 19.8 to to 20.4 m (65 to 67-ft) deep in well 299-W15-46. This silt layer also had the highest carbon tetrachloride soil concentration (380,000 $\mu\text{g}/\text{kg}$) and one of the highest carbon tetrachloride soil-vapor concentrations (8,560 ppmv) in the borehole (WMP-26264). The high concentration of carbon tetrachloride detected within the silt layer is consistent with the Work Plan model (i.e., carbon tetrachloride present in finer grained layers). However, silt layers within the vadose zone are discontinuous because of soil heterogeneity, and therefore additional fine-grained units may be present in the vadose zone with relatively high concentrations of carbon tetrachloride.

3.2.1.5 C3426 and C3427 Comparison

Figures 3-15 and 3-16 present vapor concentration profiles for carbon tetrachloride and chloroform from Boreholes C3426 (well 299-W15-46) and C3427 (well 299-W15-48). As shown on the figures, soil-vapor concentrations detected in Borehole C3427 generally were lower than those detected in Borehole C3426. However, carbon tetrachloride concentrations detected in soil samples from Borehole C3427 were relatively higher than those in soil samples from Borehole C3426, except for the high concentration of carbon tetrachloride detected in Borehole C3426 from a depth of 19.4 to 20.1 (63.5 to 66 ft) bgs.

The highest concentration of carbon tetrachloride detected at the 216-Z-9 Trench was found in Borehole C3426 (380,000 $\mu\text{g}/\text{kg}$) at a depth of 19.4 to 20.1 m (63.5 to 66 ft) bgs. This sampling depth also contained carbon tetrachloride DNAPL (see below) and the fine-grained silt layer that has been mapped in the vicinity of the 216-Z-9 Trench (based on the seismic reflection results). Relatively low concentrations of carbon tetrachloride (i.e., less than 300 $\mu\text{g}/\text{kg}$) were detected in the other samples collected from Borehole C3426. The highest carbon tetrachloride concentration in Borehole C3427 was detected near the thin silt layers (i.e., a depth of approximately 19.8 m or 65 ft bgs) and the CCU. Concentrations at depths of 20.4 to 21.0 m (67 to 69 ft) and 22.3 to 22.9 m (73 to 75) ft were 2,600 and 1,500 $\mu\text{g}/\text{kg}$, respectively. Concentrations near the CCU were 6,300 $\mu\text{g}/\text{kg}$ (39.2 to 39.8 m or 128.5 to 130.5 ft) and 4,100 $\mu\text{g}/\text{kg}$ (40.1 to 40.5 m or 131.5 to 133 ft). The detections of the highest concentrations of carbon tetrachloride within fine-grained vadose-zone sediments is consistent with the current conceptual site model presented in DOE/RL-2006-58 that DNAPL, if present, is located in finer grained units within the vadose zone (i.e., Hanford formation silts and the CCU).

Field screening of soils from the 19.4 to 20.1 m (63.5 to 66 ft) sampling interval in Borehole C3426 indicated the possible presence of carbon tetrachloride DNAPL (WMP-26264). In

addition, soil physics calculations for this silt layer indicate that any concentration of carbon tetrachloride detected above 275 mg/kg (275,000 µg/kg) is suggestive of DNAPL. Because the concentration of carbon tetrachloride detected within the 19.4 to 20.1 m (63.5 to 66-ft) sampling interval in Borehole C3426 (380,000 µg/kg) is greater than 275,000 µg/kg, carbon tetrachloride DNAPL is likely to be present in the silt layer at this location. No other soil samples have been collected at the site that indicate the presence of DNAPL, including the ongoing fiscal year 2006 soil-sampling activities conducted as part of the Carbon Tetrachloride DNAPL Source Term Investigation (DOE/RL-2006-58). Additional soil sampling is being conducted around the 216-Z-1A Tile Field and the 216-Z-9 Trench to further investigate the possible presence of DNAPL near these disposal sites. These investigations are targeting the potential DNAPL accumulation areas in the fine-grained layers identified by the cross-well seismic reflection surveys to determine the presence and extent of DNAPL. The results of these investigations will be included in the evaluation of the contaminant distribution models in the Plutonium/Organic-Rich Group OU FS.

The differences in concentrations of carbon tetrachloride in soil and vapor samples from borehole wells 299-W15-46 and 299-W15-48 may be caused by the following items.

- The SVE system was operated between the time that well 299-W15-46 was completed and the drilling of well 299-W15-48 was started. The lower concentrations of carbon tetrachloride soil vapor measured in well 299-W15-48, compared to those in well 299-W15-46 may be caused partly by the timing of the operation of the SVE system. Because well 299-W15-48 was drilled beneath the trench (a covered open trench) the vadose zone is thinner at this borehole and may respond to the SVE system differently than it does at well 299-W15-46.
- Fewer SVE wells have operated on the south side of the trench, compared to the other sides of the trench. The greater number of SVE wells that have operated near well 299-W15-48 most likely draw more vapor away from this well, compared to well 299-W15-46.
- The geologic layers beneath the 216-Z-9 Trench are heterogeneous. Carbon tetrachloride concentrations in the dissolved, DNAPL, and vapor phases are not evenly distributed in and around the trench.
- Disposal operations at the 216-Z-9 Trench ended in 1962. The trench floor slopes from north to south, and well 299-W15-46 is located south of the trench floor. From the time that disposal to the trench ended until the sampling in borehole well 299-W15-46 began, carbon tetrachloride DNAPL may have migrated along a preferential flow path to near the location of borehole well 299-W15-46 and away from the location of well 299-W15-48.

Carbon Tetrachloride Inventory

An inventory of disposed carbon tetrachloride is summarized in WHC-SD-EN-TI-202. This 1993 inventory estimated that 21 percent of the disposed carbon tetrachloride was lost to the atmosphere via evaporative processes, 12 percent of the disposed carbon tetrachloride was in the vadose zone in the vapor, dissolved, and sorbed phases, 2 percent of the disposed carbon

tetrachloride was dissolved in groundwater, and 65 percent of the disposed carbon tetrachloride was unaccounted for. A revised carbon tetrachloride inventory was developed based on data collection during the Carbon Tetrachloride DNAPL Source Term Investigation (DOE/RL-2006-58). The inventory was updated based on interim remedial actions (i.e., SVE and groundwater pump-and-treat activities) implemented at the site, information on the disposal practices at the 216-Z-9 Trench, and additional data collected during site-investigation activities completed since 1993. The updated carbon tetrachloride inventory estimated that 11 to 33 percent of the disposed carbon tetrachloride was lost to the atmosphere. The primary mechanism postulated to account for atmospheric losses was prompt evaporation of carbon tetrachloride during disposal and very shortly after disposal. Since 1993, approximately 11 percent of the disposed carbon tetrachloride was removed by the SVE system operated in the 216-Z-9 Trench and 216-Z-1A Tile Field areas, and about 1 percent of the disposed carbon tetrachloride mass was removed by the groundwater pump-and-treat system in the 200 ZP-1 Groundwater OU. Based on groundwater sampling performed after 1993 and geostatistical calculations (Murray, et al., 2006), approximately 26 percent of the disposed carbon tetrachloride mass is located within the unconfined aquifer (13 percent in the dissolved phase, 10 percent sorbed to soil, and 3 percent as chloroform). The updated inventory estimates that between 17 and 49 percent of the disposed carbon tetrachloride remains unaccounted for.

Contaminant Distribution Model

Relatively lower vapor concentrations and higher soil concentrations (except for the 19.4 to 20.1 m (63.5 to 66 ft) sample from Borehole C3426) were detected in Borehole C3427 than in Borehole C3426. They generally are consistent with the 216-Z-9 Trench contaminant distribution model presented in Figure 3-10. Disposal information from the 216-Z-9 Trench reveals that ponding occurred within the trench during disposal. The ponding indicates that soils were saturated beneath the trench bottom and that soil pore spaces may have been clogged with precipitates from the disposed liquid wastes. Some carbon tetrachloride disposed of on the trench floor likely evaporated before percolating into the soil column. Below the trench floor, carbon tetrachloride as vapor most likely was located primarily near the trench walls (i.e., on the fringes of the saturated soil column) and preferentially migrated vertically and laterally away from the trench and not directly below the trench floor, as indicated by the lower carbon tetrachloride vapor concentrations detected in Borehole C3427, compared to Borehole C3426. Additionally, the SVE system has pulled vapor from beneath the trench footprint during system operations. Some of the carbon tetrachloride (both dissolved and as possible DNAPL) moved vertically to finer grained layers within the vadose zone (i.e., silt layers within the Hanford formation and the CCU) and then migrated laterally along the finer grained units as evidenced by the carbon tetrachloride DNAPL found in Borehole C3426 (19.4 to 20.1 m or 63.5 to 66-ft sample). Some of the carbon tetrachloride moved vertically through the CCU and other finer-grained units into the groundwater.

3.2.2 Nature and Extent of Contamination in the 216-Z-1A Tile Field

The nature and extent of contamination summarized in this section is representative of the 216-Z-1A Tile Field in the 200-PW-1 OU. Evaluation of the nature and extent of contamination

at this location is based on the evaluation of all available data. Available data for this representative waste site includes historical and new geophysical logging results, new soil and soil-vapor sampling results, and other data collection and analysis results. The data and analysis were integrated to develop and refine a contaminant distribution model for the representative waste site.

The following provides a summary of important RI findings related to the 216-Z-1A Tile Field.

- In 1963, scintillation probe profiles monitoring the tile field indicated contamination from gamma-emitting radionuclides.
- The highest concentrations of radionuclides occur in sediments located immediately beneath the crib, below the distribution pipe.
- The maximum vertical extent of radiological contamination detected in soil, as detected by borehole geophysical logging, is 37 m (121 ft).
- The maximum vertical extent of radiological contamination detected in soil samples from the tile field area was 46.8 m (153.5 ft).
- Soil samples from the tile field area revealed a maximum carbon tetrachloride concentration of 6.561 mg/kg. Maximum concentrations of other COPCs are summarized in Section 3.2.2.3.
- An SVE system has been operated near the tile field. Between April 1991 and October 2005, 24,528 kg of carbon tetrachloride was removed by the SVE system.
- Geophysical methods were used to map and contour the surface of key geologic layers beneath the tile field. The subsurface contours of these layers are being used to guide the HHR soil-sampling investigation of the CCU for carbon tetrachloride DNAPL.

3.2.2.1 Historical Contaminant Investigation Summary

Before 1973, scintillation (gross gamma) surveys were used as the principal means of detecting contamination from gamma-emitting radionuclides. In 1963, all scintillation probe profiles monitoring the tile field indicated background levels of radiation. Available scintillation profiles are documented in ARH-ST-156. By 1973, 26 wells had been drilled in and around the 216-Z-1A Tile Field. No chemical data were collected from these 26 wells.

Radioactive contaminants were detected in three boreholes (wells 299-W18-56, 299-W18-57, and 299-W18-58) at the tile field in 1965 (ARH-ST-156). The maximum vertical extent of contamination (21.3 m [70 ft]) was observed in well 299-W18-56. The radiation intensity increased in two of these wells between 1965 and 1968 as a result of continuing disposal. Radiation intensity decreased 3 years after discharges to the tile field were terminated in 1969. Based on the scintillation profiles in ARH-ST-156, radioactive contaminants were detected relatively high up in the sediment column beneath the tile field, and breakthrough to groundwater had not occurred.

The next major investigation of the tile field is reported in RHO-ST-17. Sixteen boreholes were drilled starting in 1973 to determine the distribution of plutonium and americium (i.e., actinides) in sediments beneath the tile field. Soil samples were collected approximately every 1.5 m (5 ft) where contamination was not detected, every 0.3 m (1 ft) in zones of contamination, and wherever there was a change in sediment type. Screening of sediments was performed with portable radiation survey instruments. Selected samples were analyzed by granulometric and actinide analytical techniques.

The following conclusions are presented in RHO-ST-17 regarding the distribution of actinides detected.

- The highest concentration of Pu-239/240 (40,000,000 pCi/g) and Am-241 (2,500,000 pCi/g) occurs in sediments located immediately beneath the crib, below the distribution pipe.
- The concentration of actinides in sediments generally decreases with depth beneath the waste-distribution system, with the exception of silt-enriched horizons and boundary areas between major sedimentary units.
- The maximum vertical extent of actinide contamination (defined by the 10 pCi/g isopleth) is located approximately 30 m (100 ft) below the bottom of the crib and 30 m (100 ft) above the 1978 water table.
- The estimated lateral extent of contamination is within a 10 m (33-ft) wide zone encompassing the perimeter of the crib.

A generalized illustration of the vertical and lateral extent of contamination in excess of 10 pCi/g total actinide concentration from RHO-ST-17 is shown in Figure 3-17.

A soil-vapor extraction system was installed in the early 1990s and operated from that time to the present in the vicinity of the 216-Z-1A Tile Field and the 216-Z-18 Tile Field. From April 1991 to October 2005, 24,528 kg of carbon tetrachloride vapor was removed near the 216-Z-1A Tile Field by the SVE system (WMP-30426). Soil-vapor samples collected during operation of the SVE demonstrate that soil-vapor concentrations in the vicinity of the 216-Z-1A Tile Field have been decreasing over time.

3.2.2.2 Geophysical Logging Summary at the 216-Z-1A Tile Field

The Radionuclide Logging System has been used to evaluate the extent of radiological contamination in 13 boreholes in and adjacent to the tile field. Most of the boreholes were logged in 1993 and 1998 (PNNL-11978). The predominant radionuclides detected during logging were Am-241, Pa-233, and Pu-239. Cs-137 and Co-60 were detected less frequently. However, it appears that americium was misinterpreted as Cs-137 in the geophysical logs. The geophysical logs currently are being reinterpreted, and the new results will be presented in the FS. Maximum contaminant levels generally were detected along the central axis of the tile field near the main discharge pipe at borehole wells 299-W18-81, 299-W18-149, 299-W18-159, and 299-W18-170. Results from the survey indicate that higher levels of contamination were detected on the north end of the tile field (head end) associated with the main discharge pipe.

Contamination generally decreases with depth and distance from the discharge pipe and head end of the tile field. Maximum activities typically were detected at depth within 3.4 m (11 ft) of the discharge pipe.

The maximum vertical extent of radiological contamination (8 pCi/g of Pa-233) detected is 37 m (121 ft) bgs at borehole well 299-W18-174. However, the bulk of the contamination detected was less than 21.3 m (70 ft) bgs. Maximum activities were detected in borehole well 299-W18-159 as follows:

- Am-241 (2,500,000 pCi/g)
- Pa-233 (63 pCi/g)
- Pu-239 (25,000,000 pCi/g)
- Cs-137 (23 pCi/g).

Geophysical logging also was used at the 216-Z-1A Tile Field to assess the capability of a passive neutron tool to detect transuranic-contaminated soils (i.e., containing transuranic radionuclides with half-lives longer than 20 years at concentrations greater than or equal to 100,000 pCi/g). Objectives of the evaluation were to (1) test a small-diameter Gamma Logging System passive gamma probe for the detection of transuranic radionuclides in soil (e.g., Pu-239, Am-241), (2) assess a passive neutron detector capability to detect transuranic radionuclides at concentrations at or near 100,000 pCi/g in soil, and (3) determine if a functional relationship exists between different transuranic radionuclides and the neutron detector in soil matrices. The tile field was selected for this evaluation because it contains boreholes with a passive neutron flux field and a large range of transuranic radionuclide concentrations. Results from the logging indicated that a small-diameter, Gamma Logging System passive gamma probe is capable of detecting transuranic-contaminated soil, and a passive neutron detector is capable of detecting transuranic radionuclides at or near concentrations of 100,000 pCi/g in soil. The third test objective was not successfully demonstrated, because there were too many differences in the configuration of boreholes. The differences do not allow for baseline comparison of neutron responses from Am-241 and Pu-239. Details of this logging activity are presented in BHI-01436, *Proof-of-Principle Demonstration of a Passive Neutron Tool for Detection of TRU-Contaminated Soil at the 216-Z-1A Tile Field*.

3.2.2.3 216-Z-1A Tile Field Contamination—Analytical Data

The radioactive COPCs Am-241 and Pu-239/240 for the 200-PW-1 OU were detected in the vadose-zone soil beneath the 216-Z-1A Tile Field in borehole wells 299-W18-149, 299-W18-150, 299-W18-159, 299-W18-163, 299-W18-164, 299-W18-165, 299-W18-166, 299-W18-167, 299-W18-168, 299-W18, 169, 299-W18-172, 299-W18-173, 299-W18-174, and 299-W18-175. In addition, Pu-239/240 was detected in borehole wells 299-W18-85, 299-W18-86, 299-W18-87, and 299-W18-88, and Am-241 was detected in borehole well 299-W18-171. Pu-239/240 was detected above background to a maximum depth of 41.8 m in borehole well 299-W18-156. Am-241 was detected at a maximum depth of 46.8 m in borehole well 299-W18-164. Background levels for the 200-PW-1 OU radionuclide COPCs are shown in Table 3-1. The results for the plutonium and americium analyses are presented in Appendix D and are summarized below.

Well 299-W18-174 was deepened in 1993 to further evaluate subsurface impacts from the tile field. The well was deepened from a depth of 14.9 m to 40 m. The following COPCs were detected in soil samples collected from the borehole: Am-241, Np-237, chromium, copper, nickel, lead, chloride, fluoride, nitrate, nitrite, phosphate, sulfate, phenol, chloroform, carbon tetrachloride, methyl ethyl ketone, methyl isobutyl ketone, tetrachloroethylene, toluene, and trichloroethylene.

The following table presents the radionuclide COPCs detected above background levels (and those with no available background levels), and the depth interval of the maximum concentration.

Radionuclide Contaminant of Potential Concern	Maximum Concentration (pCi/g)	Borehole Number	Depth Interval (ft bgs)	
			Top	Bottom
Americium-241	2,590,000	299-W18-149	11.2	11.2
Neptunium-237	40	299-W18-174	48.0	48.0
Plutonium-239/240	38,200,000	299-W18-149	11.2	11.2
Protactinium-233	36.7	299-W18-174	14.6	14.6

Data from RHO-ST-17, see Appendix D of this RI report.

Background levels for the 200-PW-1 OU nonradionuclide COPCs are shown in Table 3-2. The following table presents the nonradionuclide COPCs detected above background levels (and those with no available background value) in samples from well 299-W18-174 and the depth interval of the maximum concentration.

Nonradionuclide Contaminant of Potential Concern	Maximum Concentration (mg/kg)	Depth Interval (ft bgs)	
		Top	Bottom
Chromium (III)	19	118.5	118.5
Copper	24	56.0	56.0
Lead	11	124.9	125.4
Fluoride	16	124.9 and 128.9	124.9 and 128.9
Nitrate	250	56.0	56.0
Phosphate*	1	56.0	56.0
Chloroform	0.135	131.0	131.0
Carbon Tetrachloride	6.561	127.1	127.1
Methyl ethyl ketone	0.180	56.0	56.0
Methyl isobutyl ketone	0.156	74.5	74.5
Tetrachloroethylene	0.050	128.9	128.9
Toluene	0.040	71.5	71.5
Trichloroethylene	0.068	128.9	128.9

3.2.2.4 Contaminant Distribution Model

The contaminant distribution model presented in the Work Plan (DOE/RL-2001-01, Section 3.4) generally is supported by the RI data (Figure 3-18). Based on the contaminant distribution model in the Work Plan, the highest radiological contamination was expected from the base of the crib to several meters below and then was expected to decrease with depth. For most of the radionuclides detected above background levels, the highest concentrations were reported from depths of 3.4 to 4.3 m (11.2 to 21.5 ft) directly beneath the tile field. Relatively low concentrations of several volatile organic compounds, metals, and radionuclides were found to be present deeper in the vadose zone, which also was predicted by the contaminant distribution model in the Work Plan.

No radiological contamination was detected based on field screening measurements during the drilling of borehole P57 in the northern part of the 216-Z-1A Tile Field (located within the north portion of the 10 pCi/g isopleths shown on Figure 3-17). Using the radiological information obtained during the drilling of P57, the 10 pCi/g contour on the north side of 216-Z-2.Crib would be closer to and adjacent to this crib than is shown on Figure 3-17.

3.2.3 Nature and Extent of Contaminant in the 241-Z-361 Settling Tank

The nature and extent of contamination summarized in this section is representative of the 216-Z-361 Settling Tank in the 200-PW-1 OU. Evaluation of the nature and extent of contamination at this location is based on the evaluation of all available data. Available data for this representative waste site includes sludge and tank-vapor sampling results and other data-collection and analysis results. The data and analysis were integrated to develop and refine a contaminant distribution model for the representative waste site.

The following provides a summary of important RI findings related to the 241-Z-361 Settling Tank.

- The settling tank currently contains approximately 75 m³ of sludge. The sludge is contaminated with radionuclides, metals, organics, and polychlorinated biphenyls.
- Soils beneath the tank were scanned for radiological contamination in 1999 during installation of piers to support the tank. No radiological contamination was detected.
- The lack of detected radiological contamination on the piers installed beneath the depth of the tank bottom, and the apparent stability in the tank sludge level since 1975, suggests there has been no leak of tank contents to the soil column.

The 241-Z-361 Settling Tank was opened in 1999 as part of Phase I characterization activities. The concentrations of volatile and semivolatile organics present in the tank during vapor monitoring included the following: 0.24 to 0.83 ppmv of Freon¹ 11, 0.32 to 1.10 ppmv of

¹ Freon is a trademark of E. I. du Pont de Nemours and Company, Wilmington, Delaware.

chloroform, 0.32 to 2.00 ppmv of tetrachloroethylene, 0.22 to 0.50 ppmv of isobutane, 0.05 to 0.20 ppmv of methylcyclopentane, 0.35 to 0.88 ppmv of trichloroethylene, and 0.05 to 0.15 ppmv of carbon tetrachloride.

The results of the Phase II tank characterization investigation are reported in HNF-8735 and summarized in the Work Plan (DOE/RL-2001-01, Section 3.3.1.3). The 241-Z-361 Settling Tank currently contains approximately 75 m³ (82 yd³) of sludge. The principal radionuclide contaminant in the sludge is plutonium (25 kg of Pu-239 and 4 kg of other transuranic isotopes, primarily Pu-240, are present). Concentrations of Pu-239 in the 13 samples analyzed range from 69 to 428 mg/kg. Pu-240 concentrations ranged from less than detectable to 60.97 mg/kg in the 13 samples analyzed (DOE/RL-2001-01, Section 3.3.1.3). HNF-8735 reported that the sludge was believed to contain between 26 and 75 kg of plutonium (WHC-SD-EN-ES-040, *Engineering Study of 50 Miscellaneous Inactive Underground Radioactive Waste Tanks Located at the Hanford Site, Washington*) with a probable inventory of 26.8 kg. A previous assessment of material unaccounted for estimated the tank contents as 31.2 kg plutonium (HNF-2012, *Engineering Study of the Criticality Issues Associated with Hanford Tank 241-Z-361*). This 1997 criticality study concluded that, although the plutonium inventory is potentially sufficient to generate a criticality, plutonium distribution within the sludge makes an inadvertent criticality extremely unlikely (HNF-2012).

The Am-241 concentration in the sludge ranged from nondetectable to <1 mg/kg in the samples analyzed. The concentrations of U-235 and U-238 were at trace levels. Analysis of the core samples showed that the plutonium is well distributed within the tank, and significant quantities of neutron-absorbing materials in the sludge further reduce any potential for criticality.

Videos of the tank interior show a small amount of free liquid visible on the surface, indicating that the sludge is saturated and the contents are over-moderated. The 1999 data indicate that the sludge ranges from 52.2 to 84.4 percent water. The average moisture content is approximately 70 percent. The pH of the sludge is between 8 and 9.2. Particle-size analysis was conducted on 14 composite sludge samples using a laser diffraction analyzer. The particle sizes for these samples ranged from 0.2 to 450 μm , and the average mean particle size was 139 μm (HNF-8735).

The total metals analysis of the sludge samples indicated an average of 112 mg/kg of cadmium, 10,000 mg/kg of chromium, 446 mg/kg of lead, 177 mg/kg of mercury, and 182 mg/kg of silver within the sludge. These analyses also indicated that arsenic, barium, nickel, and zinc had maximum concentration results of 23.4 mg/kg, 197 mg/kg, 3,360 mg/kg, and 622 mg/kg, respectively. Beryllium was not detected in any of the samples analyzed.

The tank-characterization samples were analyzed for volatile and semivolatile organic compounds. The five VOCs detected and their maximum concentrations were 1-butanol (5,470 $\mu\text{g}/\text{kg}$), acetone (5,620 $\mu\text{g}/\text{kg}$), benzene (3,930 $\mu\text{g}/\text{kg}$), methylene chloride (1,250 $\mu\text{g}/\text{kg}$), and toluene (1,590 $\mu\text{g}/\text{kg}$). However, these results can be taken only as lower concentration estimates because of multiple QC issues with these samples (e.g., sample vial caps were removed twice before analysis for alpha contamination control; potential hot-cell and laboratory contaminants in samples and blanks; and samples were not refrigerated prior to analysis; HNF-8735).

The results for the semivolatile organic compounds all were below reporting limits and calibration levels. Concentrations ranged from not detected to 2 µg/kg for TBP and DBP (estimated values), and all DBBP results were not detected (HNF-8735).

The tank characterization samples show that the sludge contains an inventory of polychlorinated biphenyls at a calculated average concentration of approximately 28 ppm. The peak Aroclor² concentration detected was 160 mg/kg.

Still photographs of the interior of the tank were taken in 1975, and a video camera inspection was conducted in 1999. The level of the sludge surface, and consequently the apparent depth of the sludge in the tank, is very similar in the two sets of photographs. The level is estimated by comparing the relative distance from the sludge surface to the roof of the tank in both photographs. This observation suggests that the level of waste in the tank has not changed substantially over the years between 1975 and 1999.

The lack of detected radiological contamination on the piers installed beneath the depth of the tank bottom, and the apparent stability in the tank sludge level since 1975, suggests that there has been no leak of tank contents to the soil column (FH-0002791, "Submittal of Documentation in Fulfillment of TPA Milestone M-15-37B"). (Note: In HNF-EP-0924, *History and Stabilization of the Plutonium Finishing Plant (PFP) Complex, Hanford Site*, reference is made to the 241-Z-361 Settling Tank as "leaking." However, during further evaluation of pertinent records conducted during the preparation of the engineering evaluation / cost analysis, no documentation of any leaks was discovered for the 241-Z-361 Settling Tank. In addition, the liquid level was found to have remained constant during all of the liquid-level measurements for many years before the tank was isolated in 1973, indicating that the tank did not leak. The author of HNF-EP-0924 concurred that the statement regarding leaks from this tank appeared to be in error [verified by personal communication between the author of HNF-EP-0924 and Environmental Quality Management, Inc., who subsequently communicated the corrected information to the Work Plan author] [taken from DOE/RL-2001-01, Section 3.3.1.3]).

The 241-Z-361 Settling Tank contaminant distribution model presented in the Work Plan (DOE/RL-2001-01, Section 3.4) is based primarily on the Phase II tank characterization data and discussion in HNF-8735. This model is shown in Figure 3-19.

3.2.4 Nature and Extent of Contamination of the Dispersed Carbon Tetrachloride Vadose-Zone Plume

As discussed in Section 2.4, the investigation of the dispersed carbon tetrachloride vadose-zone plume was conducted in two steps. Step I was focused on characterizing the shallow portion of the vadose zone overlying the highest concentration portion of the carbon tetrachloride groundwater plume. The Step II study extended deeper into the vadose zone and included the

² Aroclor is an expired trademark.

area overlying the entire carbon tetrachloride groundwater plume. The results of both the Step I and Step II investigations are presented and discussed in this section.

Because of the large number of investigation activities conducted, especially in the Step II investigation, the results are presented first for the Step I investigation. Then the Step II investigation results are presented in individual subsections that parallel the presentation of these activities in Section 2.4 (see Table 2-2). A summary evaluation of the nature and extent of contamination of the dispersed carbon tetrachloride vadose-zone plume is presented at the end of this section as the contaminant distribution model in Section 3.2.4.9.

The following provides a summary of important RI findings related to the dispersed carbon tetrachloride vadose-zone plume.

- The highest carbon tetrachloride concentrations in the shallow, intermediate, and deep vadose zone generally are located within about 75 to 152 (246 to 500 ft) of the release sites.
- The carbon tetrachloride concentrations in the vadose zone around the release sites are being reduced by the SVE system and are significantly less than the initial concentrations measured in 1992-1993.
- Outside of the area around the release sites, carbon tetrachloride vapor concentrations up to about 10 to 12 ppmv were found at various locations in the vadose zone, but these concentrations are not considered to have the potential for significant current or future groundwater impacts.
- The soil-vapor and shallow-groundwater sampling at wells within the eight carbon tetrachloride groundwater "hot spot" areas indicated that the deep vadose-zone soil-vapor concentrations are not significant sources of groundwater contamination in these areas.
- An area of high passive soil-vapor concentration was found northwest of the 216-Z-9 Trench near the entrance to the PFP. The active soil-vapor investigation of the pipelines near this area and several CPT investigations did not identify any potential release areas in the shallow vadose zone. CPT push location P10A had the highest active soil-vapor carbon tetrachloride concentration of 119 ppmv at 31.1 m (102.1 ft), above the top of the CCU. This area may be associated with contamination from the 216-Z-9 Trench that moved away from the trench area on the top of the CCU and that is outside the capture zone of the SVE system.
- Carbon tetrachloride DNAPL was found at one sample depth in well 299-W15-46 in the shallow vadose zone, adjacent to the south side of the 216-Z-9 Trench.

Step I Results Summary

The Step I results are reported in CP-13514, and the vadose-zone investigation results are included in this report in Tables 3-3 to 3-5. The 218-W-4C Burial Ground vent riser results are not included in this discussion, because the samples were collected in an engineered facility

(i.e., not in the environment) and were used to guide the subsequent vadose-zone investigations (see CP-13514).

The Step I soil-vapor sampling was conducted at engineered structures that had the potential to release carbon tetrachloride to the vadose zone. The engineered structures included liquid-waste discharge pipelines, liquid-waste discharge sites, and solid-waste burial ground trenches. The vadose-zone sampling was conducted using either the GeoProbe or CPT direct-push technology, and the analyses were conducted using a field-screening instrument.

The GeoProbe was used to conduct vadose-zone sampling along the liquid-waste discharge pipelines and burial ground trenches and consistently reached the target depth of 7.6 m (25 ft) bgs. The CPT was used to conduct vadose-zone sampling at the liquid-waste discharge sites and burial ground trenches to refusal. The target maximum depth for the CPT sampling was 38.1 m (125 ft) bgs. The maximum depth achieved using the CPT was 21.3 m (70 ft), and the average depth achieved was 13.7 m (45 ft). Sampling was conducted within the burial ground engineered trenches using the vent risers for access to guide the subsequent vadose-zone sampling in that area.

Relatively low concentrations of carbon tetrachloride (1 to 8 ppmv) were detected in some samples collected along the liquid-waste discharge pipelines leading to the 216-Z-18 and 216-Z-12 Cribs and the 216-Z-1D/ -11/ -19/ -20 (Crib) Ditch system. The detections were typically, but not exclusively, in the samples collected from 7.6 m bgs. The cribs and ditches at the discharge ends of these pipelines are known to have received carbon tetrachloride liquid wastes. However, the relatively low concentrations detected along the pipelines suggest that any pipeline leaks were small or were naturally remediated (e.g., by diffusion or evaporation) since the pipelines last were used. The relatively low concentrations detected along the pipelines also may be a result of lateral migration of carbon tetrachloride in the vadose zone from the discharge sites. Carbon tetrachloride was not detected in samples collected along the pipeline to the 216-Z-9 Trench, which is known to have received large volumes of carbon tetrachloride. In 1993, a remote camera survey was completed of portions of the 216-Z-9 Trench waste-discharge pipelines (840 and 840D). The video survey did not indicate breaks or major cracks; however, both lines exhibited areas of severe pitting and corrosion. It could not be determined whether the pitting broke through the pipe walls, and small holes within the pipelines could have created leakage paths (WHC-SD-NR-ER-103, *Final Report for the Remote CCTV Survey of the Abandoned Process Effluent Drain Lines 840 and 840D in Support of the 200 West Area Carbon Tetrachloride ERA*). The investigation results along the pipeline to the 216-Z-9 Trench confirm the findings from the camera survey that no significant release areas were found along the pipeline.

Relatively low concentrations of carbon tetrachloride (1 to 8 ppmv) were detected in some samples collected at the liquid-waste discharge sites 216-Z-12 Crib, 216-Z-1A Tile Field, 216-Z-1D/ -11/ -19/ -20 (Crib) Ditch system, 216-Z-7 Crib, and 216-T-19 Crib. Of these, only the 216-Z-7 Crib was not known to have received carbon tetrachloride. The highest concentrations at each site were in samples collected from 9.1 to 18.3 m (30 to 60 ft) bgs. The relatively low concentrations suggest that there is no longer an active source of contamination in the upper vadose zone at these locations. Carbon tetrachloride was not detected in samples

collected at the 216-Z-9 Trench or 216-Z-18 Crib, both of which are known to have received large volumes of carbon tetrachloride but that have been remediated since 1992 using SVE.

Relatively high concentrations of carbon tetrachloride (maximum 1,760 ppmv) were detected within the east end of Trench T-04 in the 218-W-4C Burial Ground. Carbon tetrachloride concentrations detected in samples collected from the vadose zone three months later were much lower (maximum 62.1 ppmv in August and 45.8 ppmv in September). The highest vadose-zone concentrations were in samples collected at site 2, near the location of the elevated concentration within the trench. At site 2, the highest concentrations were in samples collected at depths near the elevation of the floor of the trench. Carbon tetrachloride also was detected in samples from two other sites (site 1 and site 12) near the Trench T-04 "hot spot" and at two sites (site 4 and site 6) east of Trench T-04.

During October-December 2003, vapor samples were collected through 84 existing vent risers in trenches T-01, T-04, T-07, T-20, and T-29 in the 218-W-4C Burial Ground and analyzed for volatile organic compounds using field screening instruments. A vapor sample then was collected for laboratory analysis from the vent riser in each trench that had the highest carbon tetrachloride concentration, based on the field-screening results. The sampling was conducted in accordance with DOE/RL-2003-48, which was developed to determine whether contaminants have been released to the vadose zone from retrievably stored waste³ in the 218-W-4C Burial Ground in support of Tri-Party Agreement Milestone M-91-40 (Ecology et al., 1989, as amended).

The samples collected in 2003 were analyzed for the following eight VOCs using a gas chromatograph: carbon tetrachloride, chloroform, methylene chloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1-dichloroethane, trichloroethylene, and tetrachloroethylene. For each of these eight VOCs, the highest concentration was detected at the east end of trench T-04, which is consistent with the results of the Step I investigation (CP-13514). The highest concentration of carbon tetrachloride detected was 668 ppmv. However, the field screening results indicated that the concentrations of 1,1,1-trichloroethane and tetrachloroethylene exceeded the concentration of carbon tetrachloride. The laboratory analysis of vapor samples from trench T-04 detected 14,000 ppmv of tetrachloroethylene and 320 ppmv of 1-butanol. Because of the high dilution required to quantify the tetrachloroethylene in this sample, concentrations for the other analytes present could not be quantified.

The most likely explanation for the carbon tetrachloride detected in the vadose zone in the 218-W-4C Burial Ground is that carbon tetrachloride was released from containers within Trench T-04 and subsequently migrated from the trench to the vadose zone. (The explanation is based on the assumption that carbon tetrachloride could be present in the containers in Trench T-04.) The detection of the highest vadose-zone concentrations at site 2 at the approximate elevation of the trench floor suggests that the trench is the source. The persistence of relatively higher concentrations in deeper samples at site 2 further suggests that the carbon tetrachloride migrated vertically within the vadose zone at this site. At each discrete depth sampled (with the exception of 4.6 m [15 ft] bgs), carbon tetrachloride concentrations are lower

³ Retrievably stored for purposes of the *Atomic Energy Act of 1954*.

at the four sites to the west, east, and north of site 2; of those four, concentrations at each discrete depth are higher at site 1, the site closest to site 2. This pattern of decreasing concentrations away from site 2 suggests that carbon tetrachloride is diffusing from site 2.

During the Step I investigation, eight temporary soil-vapor monitoring probes were installed near several of the liquid-waste discharge sites and the 218-W-4C Burial Ground. Soil-vapor samples from these temporary probes were collected 17 times between October 2002 and November 2004 and analyzed to confirm the initial detections. The monitoring results from these temporary probes are summarized in Table 3-6. The highest carbon tetrachloride soil-vapor results from these temporary probes ranged from <1 ppmv at C3875 by the 216-Z-7 Crib to 48 ppmv at Site 2 (C4057) at the 218-W-4C Burial Ground. The highest result at Site 2 was from a depth of 2.7 to 2.9 m (8.9 to 9.4 ft), which is similar to the 45.8 ppmv at the 3 m (10-ft) depth measured at this site in September 2002. The monitoring of the temporary soil-vapor probes confirmed the initial Step I sampling results.

Step II Results Summary

The Step II results are reported in D&D-30838, and the vadose-zone investigation results are included in this report in Tables 3-7 to 3-15. The results of the Step II investigation are discussed below in Sections 3.2.4.1 to 3.2.4.8. The contaminant distribution model of the dispersed carbon tetrachloride vadose-zone plume is discussed in Section 3.2.4.9.

3.2.4.1 Results of Vadose-Zone Plume Lateral Extent at the 216-Z-9 Trench, 216-Z-1A Tile Field, and 216-Z-18 Crib

The lateral extent of the dispersed carbon tetrachloride vadose-zone plume was investigated using passive soil-vapor surveys initially deployed on a coarse grid spacing followed by refined grid spacing. The results of the passive soil-vapor surveys are summarized in Table 3-7, and the survey locations are shown on Figures 2-10 to 2-13. The highest carbon tetrachloride soil-vapor concentration measured during these passive soil-vapor surveys was 4,531 ng/trap at collector F52 near the west edge of the 216-Z-1A Tile Field (Figure 2-10). The results shown on Figure 2-10 have been converted to contoured flux values by accounting for the cross-sectional area of the sample collector and the total time that the collector was in place and are presented in units of nanograms per gram per square meter per minute. Based on the results of the passive soil-vapor surveys, CPT investigations were conducted that included collection of depth-discrete soil-vapor samples every 1 m (3 ft) of depth and collection of soil samples at selected locations. The results of the CPT active soil-vapor surveys are summarized in Table 3-8, and the general CPT investigation locations are shown on Figures 2-14 and 2-15. The highest carbon tetrachloride soil-vapor concentration measured during the active soil-vapor sampling using the CPT was 512 ppmv at location P30E from a depth of 18.7 m (61.3 ft). Location P30E was one of the CPT pushes completed at location P30 in the west central part of the 216-Z-1A Tile Field (Figure 2-15).

The results of the CPT soil sampling are summarized in Table 3-9. Carbon tetrachloride was not detected in any of the soil samples above the analytical reporting limits.

3.2.4.2 Results from Potential Accumulation Areas at the 216-Z-9 Trench, 216-Z-1A Tile Field, and 216-Z-18 Crib

The results of the cross-well seismic surveys at the 216-Z-9 Trench and the 216-Z-1A Tile Field were interpreted to prepare subsurface topographic contour maps of key vadose-zone layers at each of these sites. The subsurface topographic contour maps for the 216-Z-9 Trench area are shown in Figures 2-19 to 2-22, and those for the 216-Z-1A Tile Field are shown in Figures 2-26 to 2-29. The resulting detailed geometry of these subsurface vadose-zone layers was used to identify target depths for intrusive soil sampling around the release sites. The results of the HHR investigations will not be available for inclusion in this RI report and will be included in the 200-PW-1 OU FS.

The CPT soil-vapor sampling results discussed in Section 3.2.4.1 also were used to investigate potential DNAPL or source locations above the CCU that were identified by the passive soil-vapor surveys.

The seismic anomalies that could be attributed to possible carbon tetrachloride DNAPL near the top of the CCU adjacent to the 216-Z-9 Trench (Waddell et al., 2003) were investigated by passive soil-vapor locations 56, 59, 87, and 88 (Figure 2-10) and CPT locations P17, P20, and P24 (Figure 2-14). The results from those investigation locations are provided in Tables 3-8 and 3-9. The highest carbon tetrachloride concentrations measured at these locations were 64 ng/trap at passive soil-vapor location 87 and 5 ppmv at CPT location P20 at a depth of 0.2 m (0.58 ft). These results are significantly less than concentrations expected from a DNAPL source; however, the vapor concentrations in the shallow depths of these investigations may have been affected by the SVE operations. The HHR investigation discussed above will collect soil samples from the CCU on the north and west sides of the 216-Z-9 Trench to further investigate these areas.

3.2.4.3 Results Adjacent to the 216-T-19 Crib, 216-Z-Ditches, 216-Z-7 Crib, 216-Z-12 Crib, 216-Z-16 Crib, and 216-Z-17 Trench

As previously discussed in Section 2.4.2.3, because of radiological concerns with using the EAPS to investigate the 216-T-19 Crib and the relatively low carbon tetrachloride concentrations observed in Step I, the EPA concurred that a Step II investigation at this site was not required. The EAPS was used to collect soil-vapor samples from the shallow and deep vadose zone in four borings adjacent to the 216-Z-16 Crib and the 216-Z-17 Trench. The results of the EAPS active soil-vapor sampling are summarized in Table 3-10. The only carbon tetrachloride soil-vapor concentration detected in the EAPS samples from these locations was 9.06 to 9.14 ppmv from Borehole C4884 at a depth of 45.7 m (150 ft). This boring was located adjacent to the center of the 216-Z-16 Crib. The Step II results are consistent with the Step I results, in which no carbon tetrachloride was detected down to refusal depth of 20.4 m (67 ft) bgs at the 216-Z-16 Crib site.

The second highest carbon tetrachloride soil-vapor concentration measured in the EAPS samples was 7.31 to 7.34 ppmv from Borehole C4886 at a depth of 22.8 m (75 ft), which is located adjacent to the west side of the 216-Z-17 Trench. This was the only detection of carbon tetrachloride at the 216-Z-17 Crib during the Step II investigation. The Step II results are

consistent with the Step I results, in which no carbon tetrachloride was detected down to refusal depth of 12.2 (40 ft) bgs at the 216-Z-17 Trench site.

The 216-Z Ditches and 216-Z-12 Crib were investigated in the CPT investigation by push locations P41 at the head end of the 216-Z Ditches (Figure 2-15) and by P47 and P48 next to the 216-Z-12 Crib (Figure 2-16). The results of the active soil-vapor sampling are summarized in Table 3-9. The highest carbon tetrachloride soil-vapor concentrations measured at these locations were 4 ppmv from location P41 at a depth of 12.4 m (40.78 ft) and 18 ppmv from location P48 at a depth of 22 m (72.11 ft).

Borehole C4183 was drilled and sampled to evaluate subsurface impacts beneath the 216-Z-7 Crib as part of the 200-LW-2 OU RI (D&D 25461). The soil-vapor sampling results from this borehole are shown in Table 3-11. The highest carbon tetrachloride soil-vapor concentration was 12.2 ppmv at a total borehole depth of 67.7 m (222 ft), which is just above the water table.

3.2.4.4 Results in the Plutonium Finishing Plant Protected Area

The PFP Protected Area was investigated by both passive and active soil-vapor surveys. The 35 passive soil-vapor sampling points (C1-C11, C13-C20, C22, C24-C29, and C31-C41) are shown on Figure 2-10, and the results are included in Table 3-7. The results shown on Figure 2-10 have been converted to contoured flux values, by accounting for the cross-sectional area of the sample collector and the total time the collector was in-place, and are presented in units of nanograms per square meter per minute. The highest concentration of carbon tetrachloride soil vapor measured in the passive soil-vapor survey was 147 ng/trap at sampling point C25 near the southwest corner of the PFP. This location is near push Borehole C4063, which had the highest detections of carbon tetrachloride in the active soil-vapor sampling, as discussed below.

Active soil-vapor samples were collected at 17 subsurface locations within the PFP Protected Area (Figure 2-31), and the results are summarized in Table 3-12.

Carbon tetrachloride concentrations were detected at Boreholes C3878, C4066, C4065, C4063, C4138, and C4067. Concentrations at the other locations all were below minimum detection values. Additionally, no consistent pattern was observed in the distribution of carbon tetrachloride contamination at the six sites that had detectable concentrations, other than at each sample location; the highest, or only, detection is at the deepest sampling depth. Of the six sites, one site (Borehole C4063) had detectable concentrations at all sampling depths. Borehole C3878 had detectable levels at the two deeper sample depths, and the other four locations had detectable levels only at the deepest sample depth.

At Borehole C4063, carbon tetrachloride was detected at all depths sampled (4.1 to 12.9 m or 13.5 to 42.2 ft bgs). The highest concentration of 4.24 ppmv was detected at the deepest depth, with decreasing concentrations at the shallower depths (2.32 ppmv at approximately 7 m or 23 ft bgs and 1.41 ppmv at approximately 4.3 m or 14 ft bgs). No reports are present to indicate that an unplanned release of carbon tetrachloride occurred at or near the site. An unplanned release (UPR-200-W-1559) of sodium hydroxide did occur in the vicinity in May 1985, but the contaminated soil was collected and disposed of as hazardous waste.

Borehole C4067 had a carbon tetrachloride concentration of 2.41 ppmv at a depth of approximately 11.7 m (38.5 ft) bgs.

Two of the french drain sites (Boreholes C4065 and C4066) had detectable carbon tetrachloride concentrations. Borehole C4065 had 1.22 ppmv at approximately 13.3 m (43.5 ft) bgs, and Borehole C4066 had 1.33 ppmv at approximately 12 m (39.5 ft) bgs. The sampled concentration and depth are nearly identical for these sites, which are separated by approximately 30 m (100 lineal ft). No carbon tetrachloride was detected at the other french drain site (Borehole C4064) which reached refusal at approximately 8.7 m (28.5 ft) bgs, at which depth both of the other french drain sites had non-detect values for carbon tetrachloride.

Borehole C4138, northeast of the PFP, had a carbon tetrachloride vapor concentration of 1.21 ppmv at an approximate depth of 14.3 m (47 ft) bgs. Borehole C3878 (see below) also is located on the east side of the PFP protected area and had detectable carbon tetrachloride vapor concentrations.

Borehole C3878 had two depths (approximately 13.3 and 7.8 m or 43.5 and 25.5 ft bgs) where carbon tetrachloride vapor concentrations were detectable (1.78 ppmv and 1.01 ppmv, respectively). Borehole C3877, which had no recordable carbon tetrachloride vapor concentrations, is located approximately 30 m (100 lineal ft) from Borehole C3878 and had sample depths within a few feet bgs of the sample depths for Borehole C3878.

Results for soil-vapor sampling during drilling of Boreholes C3494 (well 299-W15-764) and C3803 (well 299-W15-42) are reported in Table 16 in BHI-01631. The maximum carbon tetrachloride vapor concentration detected in well 299-W15-42 was 49 ppmv from a depth of 25 m (82 ft) bgs. The maximum (and only) carbon tetrachloride vapor concentration detected in well 299-W15-764 was 18 ppmv from a depth of 24.4 m (80 ft) bgs.

The relatively low concentrations of carbon tetrachloride vapor measured suggest that there is not an active source of contamination in the upper vadose zone at these locations.

3.2.4.5 Results Adjacent to the 216-S-25 Crib

The soil-vapor sampling results for EAPS Boreholes C4890 and C4891 adjacent to the 216-S-25 Crib are included in Table 3-10. The only detectable concentration of carbon tetrachloride soil vapor was 1.89 ppmv in the sample from a depth of 65.5 (215 ft) from Borehole C4890.

The groundwater sample (HEIS number B1DFF8) collected from Borehole C4890 on July 11, 2005, was analyzed for VOCs. The only compounds detected in this sample were carbon tetrachloride at 1 µg/L (J – estimated) and chloroform at 14 µg/L.

3.2.4.6 Results at the 218-W-3A Burial Ground

The investigation of the 218-W-3A Burial Ground included a passive soil-vapor survey of two trenches, T-9S and T-06, and active vapor sampling from all 17 vent risers present, in portions of trenches T-9S, T-3S, T-05, and T-08 (Figure 2-32). The passive soil-vapor results are presented in Table 3-13. The highest carbon tetrachloride soil-vapor concentration was 231.08 ng/trap from sampling point T06-10D.

The field screening results for the vapor samples collected through the vent risers in the 218-W-3A Burial Ground trenches are provided in Table 3-14. The only concentrations of carbon tetrachloride (5 to 36 ppmv) were detected in the western part of trench T-08.

3.2.4.7 Results of Groundwater “Hot Spots” Investigation

The likelihood that carbon tetrachloride detected in the vadose zone is or will be impacting groundwater was evaluated using Henry’s law for the equilibrium partitioning of carbon tetrachloride between vapor and aqueous phases. As a rule of thumb, the concentration of carbon tetrachloride in the vapor phase will be 0.156 ppmv per 1 $\mu\text{g/L}$ of carbon tetrachloride in the aqueous phase, at 20 degrees $^{\circ}\text{C}$ (DOE/RL-2001-01, Section D1.4.2). For example, if the soil-vapor concentration is 156 ppmv, the calculated equilibrium groundwater concentration will be approximately 1,000 $\mu\text{g/L}$. If the measured carbon tetrachloride groundwater concentration is less than the equilibrium value, then the vadose-zone soil vapor will impact groundwater as the carbon tetrachloride vapor dissolves into the groundwater. However, if the measured carbon tetrachloride groundwater concentration is greater than the equilibrium value, then the vadose-zone soil vapor will not impact groundwater, and the carbon tetrachloride in the groundwater will be expected to volatilize into the soil vapor.

Soil-vapor and groundwater samples were collected near the water table from 31 groundwater wells within eight areas identified as having elevated concentrations of carbon tetrachloride in groundwater (hot spots), as described in Section 2.4.2.8. The measured carbon tetrachloride concentrations in these samples are summarized in Table 3-15. Using the soil-vapor results and Henry’s law, the hypothetical groundwater concentration that would be in equilibrium with each soil-vapor measurement was calculated as shown in Table 3-15. The calculated hypothetical equilibrium groundwater concentrations then were compared to the measured carbon tetrachloride concentrations in groundwater to determine if the soil vapors could be impacting the groundwater. As shown in Table 3-15, in all but two cases, the measured groundwater concentrations are greater than the calculated equilibrium groundwater concentrations, indicating that the vadose-zone soil vapor in 29 of the 31 well locations is not impacting the groundwater.

In two cases (August 2005 sampling of well 299-W11-3 in Area 3 and sampling of well 299-W15-15 in Area 6), the measured groundwater concentrations are close to the calculated equilibrium groundwater concentrations, indicating that the vadose-zone soil vapor could be the source of the shallow groundwater concentration in these wells (Table 3-15). The October 2005 sampling results for well 299-W11-3 indicated that the soil vapor did not impact the groundwater, so the impact in this well may be anomalous or may vary temporally. In both of these cases, the measured groundwater concentrations were low (6.9 and 21 $\mu\text{g/L}$ of carbon tetrachloride), so the vadose-zone soil vapors are not significant sources of groundwater contamination at these wells.

To evaluate the carbon tetrachloride concentration gradient in the upper 3 m (10 ft) of the unconfined aquifer, depth-discrete groundwater samples were collected from selected wells within the groundwater “hot spot” areas. Vertical profile plots of the carbon tetrachloride results for the depth-discrete groundwater samples are shown in Figure 3-20 for Area 2 (wells 299-W11-25B and 299-W11-42), Area 4 (well 299-W11-10), Area 5 (wells 299-W15-40, 299-W15-43, and 299-W15-765), Area 7 (well 299-W15-30), and Area 8 (well 299-W23-4). In

all but two wells (wells 299-W11-42 and 299-W15-30), the carbon tetrachloride concentration gradient increased with depth in the top of the unconfined aquifer. If there were potential source areas in the deep vadose zone near these wells, the carbon tetrachloride concentration in the groundwater was expected to be highest near the water table and then to decrease with depth in the aquifer.

The profile plot for well 299-W11-42 shows a slight decrease in concentration from the 1.5 to 3 m (5 to 10 ft) sample. However, the 14-day holding time for the deeper sample was exceeded before analysis, so this lower concentration may be due in part to this issue. The profile plot for well 299-W15-30 shows that the three depth-discrete samples all had the same carbon tetrachloride concentration of 1,500 µg/L. Although the reason for this trend is not clear, it does not appear to be related to a potential vadose-zone source, because the evaluation of the carbon tetrachloride soil-vapor and groundwater concentrations indicated that the soil vapor was not impacting the groundwater (Table 3-15) at this well.

3.2.4.8 Results of Possible Release Sites/Sources Investigations

The results are summarized in this section of a variety of investigations that have been conducted within the Step II study area that provide useful information on the nature and extent of the dispersed carbon tetrachloride vadose-zone plume.

T Plant Soil-Vapor Survey

The results of the passive soil-vapor survey around the T Plant are shown in Table 3-16. No carbon tetrachloride was detected in any of these samples above the laboratory method detection limit (25 ng/trap).

Fiscal Year 2001 to 2006 Well Drilling for Other Operable Units

The results of soil-vapor samples collected during well drilling from fiscal years 2001 to 2006 are summarized in Table 3-17. The carbon tetrachloride vapor concentrations detected in most of these samples generally were less than 10 ppmv. The highest carbon tetrachloride soil-vapor concentration measured in these samples was 86.9 ppmv from well 299-W18-16 at a depth of 37.2 m (122 ft) bgs. This well is located on the east side of the 216-Z-1A Tile Field.

In samples collected from Borehole C3102, carbon tetrachloride was not detected in any of the soil samples, which were analyzed at an offsite laboratory (DOE/RL-2002-42). The soil-vapor sample was collected at a depth of 68.6 m (225 ft) bgs, which was 0.22 m (0.72 ft) above the water table. An inflatable packer was used to isolate the lower portion of the borehole, and the sample was pumped into a 1-L Tedlar bag for onsite analysis using a B&K 1302 multi-gas analyzer. The analytical results for this sample (HEIS number B12D87) were 4.12 ppmv carbon tetrachloride and 4.73 ppmv chloroform (BHI-01606, *Borehole Summary Report for Borehole C3102 in the 216-T-26 Crib, 200-TW-1 Scavenged Waste Group Operable Unit*).

In fiscal year 2006 wells 299-W11-47 and 299-W15-224, the highest carbon tetrachloride soil-vapor concentrations were 2.49 ppmv in well 299-W11-47 at a depth of 40.5 m (133 ft) and 26.6 ppmv in well 299-W15-224 at a depth of 69.5 to 70 m (228 to 230 ft).

Enhanced Access Penetration System Demonstration 2003

The results of the active soil-vapor sampling conducted in four of the EAPS demonstration boreholes drilled in 2003 are presented in Table 3-18. The highest carbon tetrachloride soil-vapor concentration measured in these samples was 12.9 ppmv in Borehole C4242 at a depth of 45.1 m (148 ft). This borehole is located between the PFP and the 218-W-4C Burial Ground.

Well Drilling Near Release Sites

In 1992 and 1993, 11 wells were drilled, and in 2001 two existing wells were deepened around the release sites. The results of these investigations are reported in WHC-SD-EN-TI-063, WHC-SD-EN-TI-202, and BHI-00105. In fiscal year 2005, the chemical constituent data for 12 of these wells were entered into HEIS. Because the location of these wells around the release sites is useful for determining the extent of the dispersed carbon tetrachloride vadose-zone plume, the analytical results in HEIS for these wells are included in Appendix C of this RI report.

In 1995, well 299-W15-32 was drilled and sampled to investigate DNAPL occurrence on the northeast corner of the 216-Z-9 Trench (Figure 2-1). No DNAPL was detected in the samples from this well (BHI-00431).

In 2001, wells 299-W15-84 and 299-W15-95, located on the west and north sides, respectively, of the 216-Z-9 Trench, were deepened and soil samples were collected for laboratory analysis. The analytical results for the samples collected during the deepening of these wells also are included in Appendix C.

The results of the fiscal years 1992 and 1993 soil-vapor samples collected during drilling of some of these wells is provided in Table 3-19. The highest carbon tetrachloride soil-vapor concentration measured in these wells was 20,910 ppmv in well 299-W15-218 at a depth of 34.1 m (111.8 ft). This well is located north of the 216-Z-9 Trench.

The highest carbon tetrachloride concentrations measured in the soil samples collected during the drilling of the fiscal years 1992-1993 and 2001 well drilling around the release sites are summarized in Table 3-20. The highest concentrations of carbon tetrachloride detected in the soil samples were 37,817 $\mu\text{g}/\text{kg}$ in well 299-W15-217 from a depth of 34.7 m (114 ft) (near the 216-Z-9 Trench), 6,561 $\mu\text{g}/\text{kg}$ in well 299-W18-174 from a depth of 36.9 m (121.1 ft) (near the 216-Z1A Tile Field), and 1,755 $\mu\text{g}/\text{kg}$ in well 299-W18-249 from a depth of 44.6 m (146.2 ft) (near the 216-Z-18 Tile Field).

Most of the fiscal years 1992 and 1993 soil samples were collected before start-up of the SVE systems at these sites in 1993 (see Section 2.4.3.1). The results from these soil samples are useful for determining the extent of the dispersed carbon tetrachloride vadose-zone plume at that time. As shown in Table 3-20, most of the highest carbon tetrachloride concentrations in these soil samples were found at or near the depth of the CCU. The minimum extent of the high-concentration portion of the dispersed carbon tetrachloride plume at the CCU was from the release sites to the location of these wells (e.g., approximately 75 m [246 ft] from the release sites). The maximum extent cannot be defined with the fiscal year 2002-2003 data set, but the

more recent Step II investigations are useful in bounding the dispersed carbon tetrachloride vadose-zone plume, as discussed in Section 3.2.4.9.

The results for wells 299-W15-84 and 299-W15-95 (collected in 2001) shown in Table 3-20 are significantly lower than the fiscal year 1992-1993 well results and show the impact of the SVE system near the release sites in reducing the carbon tetrachloride concentrations in the vadose zone (see also Section 2.5).

Fiscal Year 1991 Soil-Vapor Sampling

Results for the 1991 active soil-vapor monitoring near the 216-Z-18 Crib area are shown in Table 3-21. Detected concentrations of carbon tetrachloride (as total OVA response) ranged from 1.492 ppmv (sample point Z18N-6) to 14.95 ppmv (sample point Z18N-8).

3.2.4.9 Contaminant Distribution Model of the Dispersed Plume

The results of the Step I and Step II investigations of the dispersed carbon tetrachloride vadose-zone plume are discussed by each investigation area or activity in the preceding sections. Because the geographic boundaries of the Step II investigation include the vadose zone overlying the carbon tetrachloride groundwater plume defined by the 5 µg/L contour, which covers approximately 11 km² and underlies most of the 200 West Area, this section provides a summary of the investigation results and an evaluation from a larger perspective for this data set.

During the DQO process for the Step II investigation, the vadose zone was divided into three zones to develop the sampling design and assess the current or future groundwater impacts. The three zones are the shallow, intermediate, and deep vadose zone, which correspond to the Hanford formation, the CCU, and the Ringold Formation down to the water table.

A database of the Step I and II investigation results was created in Microsoft Access⁴ so the data could be sorted by sample type and sample depth, as well as other parameters. After they were sorted, the data points were plotted on a site base map using the Geographical Information System software, so that the spatial coverage of the results could be evaluated. The number of investigation results in the database is summarized in the following table, and a summary map of all of the Step I and Step II investigation locations discussed in this report is shown in Figure 3-21.

Dispersed Plume Results by Sample Media			
Vadose Zone Interval	Passive Soil Vapor	Active Soil Vapor ^a	Soil Samples ^b
Shallow	749	1,800	330
Intermediate	0	27	68
Deep	0	273	182
Total sample results	749	2,100	580

^a At 1,249 separate locations.

^b At 78 separate locations.

⁴ Access is a trademark of Microsoft Corporation, Redmond, Washington.

Figures 3-22 and 3-23 show all of the passive soil-vapor results and an enlarged view of these results centered on the release sites. The location of the maximum passive soil-vapor result (4,531 ng/trap at F52) at the west edge of the 216-Z-1A Tile Field is shown in both figures. The passive soil-vapor samples were collected between August 2003 and December 2005, so they provide information about the current nature and extent of the dispersed carbon tetrachloride vadose-zone plume in the shallow vadose zone. The highest passive soil-vapor concentrations (e.g., the red and blue dots) are grouped in two areas. One area includes the 216-Z-1A Tile Field and extends approximately 20 m (66 ft) to the west. The second area is located northwest of the 216-Z-9 Trench near the entrance to the PFP. The active soil-vapor investigation of the pipelines near this area did not identify any near-surface releases, so this area may be associated with contamination from the 216-Z-9 Trench that moved away from the trench area on the top of the CCU, and is outside the capture zone of the SVE system.

Figures 3-24, 3-26, and 3-28 show the active soil-vapor results for the shallow, intermediate, and deep vadose zone, respectively, and Figures 3-25, 3-27, and 3-29 show enlarged views of each of the results from these depth intervals near the release sites. The active soil-vapor samples were collected between 1992 and 2006. The earliest samples were collected primarily near the release sites, with most of the remaining samples collected from 2001 to 2006 both near and away from the release sites. These results provide information about both the historic and the current nature and extent of the dispersed carbon tetrachloride vadose-zone plume throughout the vadose zone. The highest active soil-vapor concentrations are located near the release sites at all three depth intervals. The maximum active soil-vapor carbon tetrachloride concentration in each depth interval was located near the 216-Z-9 Trench (28,500 ppmv in the shallow vadose zone at well 299-W15-82, 25,500 ppmv in the intermediate vadose zone at well 299-W15-217, and 10,380 ppmv in the deep vadose zone at well 299-W15-218). Monitoring results in these wells, as part of the SVE system operation around the release sites, show that vapor concentrations have been significantly reduced (see Figure 2-36), and the more recent CPT investigations around the release sites generally have found carbon tetrachloride soil-vapor concentrations of less than 100 ppmv (yellow dots on Figure 3-25).

Figures 3-30, 3-31, and 3-32 show the soil sample results for the shallow, intermediate, and deep vadose zone, respectively. The soil samples were collected primarily from wells drilled in fiscal year 1992-1993, two wells deepened at the 216-Z-9 Trench in 2001, and the CPT investigations conducted in 2005. These results provide information about both the historic and the current nature and extent of the dispersed carbon tetrachloride vadose-zone plume throughout the vadose zone near the release sites. The maximum carbon tetrachloride concentration in soil in the shallow and intermediate vadose zone is located near the southwest corner of the 216-Z-9 Trench. Well 299-W15-46 had the highest concentration (380,000 $\mu\text{g}/\text{kg}$) in the shallow vadose zone, and well 299-W15-217 had the highest concentration in the intermediate vadose zone (37,817 $\mu\text{g}/\text{kg}$). The maximum carbon tetrachloride concentration in soil in the deep vadose zone is located in well 299-W18-174 (6,561 $\mu\text{g}/\text{kg}$ at 8.3 m or 27.1 ft bgs) at the 216-Z-1A Tile Field.

Based on the results of the Step I and Step II investigations discussed in this report, the following conclusions are made concerning the nature and extent of the dispersed carbon tetrachloride vadose-zone plume:

- The highest carbon tetrachloride concentrations in the shallow, intermediate, and deep vadose zone generally are located within about 75 to 152 m (246 to 500 ft) of the release sites.
- The carbon tetrachloride concentrations in the vadose zone around the release sites are being reduced by the SVE system and are significantly less than the initial concentrations measured in 1992-1993.
- Outside of the area around the release sites, carbon tetrachloride vapor concentrations up to about 10 to 12 ppmv were found at various locations in the vadose zone, but these concentrations are not considered to have the potential for significant current or future groundwater impacts.
- The soil-vapor and shallow-groundwater sampling at wells within the eight carbon tetrachloride groundwater "hot spot" areas indicated that the deep vadose-zone soil-vapor concentrations are not significant sources of groundwater contamination in these areas.
- An area of high passive soil-vapor concentration was found northwest of the 216-Z-9 Trench near the entrance to the PFP. The active soil-vapor investigation of the pipelines near this area and several CPT investigations did not identify any potential release areas in the shallow vadose zone. CPT push location P10A had the highest active soil-vapor carbon tetrachloride concentration of 119 ppmv at 31.1 m (102.1 ft), above the top of the CCU. This area may be associated with contamination from the 216-Z-9 Trench that moved away from the trench area on the top of the CCU, and is outside the capture zone of the SVE system.
- Carbon tetrachloride DNAPL was found at only one sample depth in well 299-W15-46 in the shallow vadose zone, adjacent to the 216-Z-9 Trench.

3.2.5 Nature and Extent of Contamination in the 216-A-8 Crib

The nature and extent of contamination summarized in this section is representative of the 216-A-8 Crib in the 200-PW-3 OU. Evaluation of the nature and extent of contamination at this location is based on the evaluation of all available data. Available data for this representative waste site include historical and new geophysical logging results and new soil and soil-vapor sampling results. The data and analysis were integrated to develop and refine a contaminant distribution model for the representative waste site.

The following provides a summary of important RI findings related to the 218-A-8 Crib.

- The highest radiological contamination associated with the crib was detected within 18 m (60 ft) of the ground surface.
- The maximum extent of radiological contamination detected near the crib by geophysical logging techniques was 76.5 m (251 ft) bgs. However, the source of the contamination at this depth is not known.

- Radioactive COPCs for the 200-PW-3 OU were detected in the vadose zone beneath the 216-A-8 Crib in Borehole C4545 to total depth (80 m [264.5 ft] bgs). A summary of the maximum concentrations of COPCs detected near the crib is presented in Section 3.2.5.3.

3.2.5.1 Historical Contaminant Investigation Summary

As part of the investigation activities to locate Borehole C4545, six other boreholes (wells 299-E25-4, 299-E25-5, 299-E25-6, 299-E25-7, 299-E25-8, and 299-E25-9) were geophysically logged using the SGLS between April and July 2004 (WMP-27020). The geophysical log data reports for these boreholes are included in WMP-27020. The only man-made radionuclide detected during the logging was Cs-137, and the highest concentrations were found in the western end (head end) of the 216-A-8 Crib. At the west end of the crib, the highest Cs-137 concentrations were 30,800 pCi/g in well 299-E25-5 at 7.6 m (25 ft) below the top of the casing, 50 pCi/g in well 299-E25-6 at 7.6 to 9.1 m (25 to 30 ft) below the top of the casing, and 13.1 pCi/g in well 299-E25-4 at 7.9 m (26 ft) below the top of the casing. In the other three boreholes along the rest of the crib, the highest Cs-137 concentrations were all found at 1.5 m (5 ft) below the top of the casing: 5.7 pCi/g in well 299-E25-7, 4.5 pCi/g in well 299-E25-8, and 13 pCi/g in well 299-E25-9 at the east end.

The historical gross gamma logging system and radionuclide logging system borehole geophysical log data for these six boreholes are presented and discussed in the geophysical log data reports in WMP-27020. Although there are differences in the depths and timing when gamma activity was detected in these boreholes, the nature and extent of gamma-emitting radionuclides from this data set is best illustrated by the following summary from the well 299-E25-6 report.

The gross gamma logs digitized from RHO-LD-28, *Scintillation Probe Profiles From 200 East Area Crib Monitoring Wells*, are shown in Figure 3-33. These logs were converted to counts per second versus depth in feet for better comparison with the SGLS and radionuclide logging system data. As early as 1958, a zone of high gamma activity was observed from an approximately 4.6 to 18 m (15 to 60-ft) depth. Within this interval, the detector appears to be saturated. The 1958 and 1959 logs show abrupt increases in gamma activity at the bottom of the logged interval at 70 to 73 m (230 to 240 ft). This may indicate contamination at or near groundwater level. As discussed in Section 1.4.5, approximately 87 percent of the liquid waste, by volume, was discharged to the crib between 1955 and 1958. By 1963, the interval of detector saturation extended to about 32 m (105 ft). Gamma activity levels had increased significantly between 32 and 41 m (105 and 135 ft), and there appeared to be an abrupt decrease at 41 m (135 ft), suggesting additional contamination events and/or downward contaminant migration between 1959 and 1963. The 1968 and 1976 logs show significantly lower gamma activity levels and generally reflect the profile of the 1990 radionuclide logging system and the 2004 SGLS logs. Below the 12 to 18 m (40 to 60-ft) depth, the dominant contaminant may have been a radionuclide with a relatively short half-life, such as Ru-106. The 1976 log shows significantly greater gamma activity between approximately 6 to 23 m (20 to 75 ft). This may indicate an additional contamination event between 1968 and 1976. The SGLS Cs-137 log indicates contaminant migration to a depth of 22.5 m (74 ft). The historical data suggest that contaminants from the 216-A-8 Crib reached at least the 41 m (135-ft) depth. The SGLS log also detected Cs-137 between 69 and 71 m (227 and 234 ft), with a maximum concentration of about 3.2 pCi/g at

70 m (229 ft). Traces of Cs-137 also were detected intermittently between 74 and 76.5 m (243 and 251 ft). The source of this contamination is not known. Other boreholes in the vicinity also exhibit similar contamination profiles at approximately the same elevation. This contamination may have been deposited on the casing from groundwater contaminant plumes in the past, when groundwater levels were higher.

3.2.5.2 New Geological Logging

Borehole geophysical logging of Borehole C4545 took place on June 21, 2005, when the borehole was at a depth of 21.3 m (70 ft) bgs and again on July 5, 2005, at total depth of 80.6 m (264.5 ft) bgs (WMP-27020). Two intervals in Borehole C4545 showed detectable Cs-137; one interval from the ground surface to 1.5 m (5 ft) bgs and the other from 3.4 to 22.3 m (11 to 73 ft) bgs. The highest concentration zone lies between 3.4 and 7.6 m (11 and 25 ft) bgs, with a maximum concentration of approximately 1.5 million pCi/g measured at 6.1 m (20 ft) bgs. Potential casing contamination may be the cause of Cs-137 contamination observed at relatively low concentrations (e.g., below 10 pCi/g) between 12.2 and 22.3 m (40 and 73 ft) bgs and the cause of Cs-137 spikes at probable casing joints at 15.2 and 18.3 m (50 and 60 ft) bgs.

The laboratory sample results for Cs-137 from Borehole C4545 correlate with the borehole geophysical logging results. At 5.8 to 6.6 m (19 to 21.5 ft) bgs, Cs-137 results reached a maximum of 877,000 pCi/g. The second highest results for Cs-137 (3,730 pCi/g) were found in the samples from 8.3 to 9.1 m (27.5 to 30 ft) bgs.

3.2.5.3 216-A-8 Crib Contamination – Laboratory Data

Radioactive COPCs for the 200-PW-3 OU were detected in the vadose zone beneath the 216-A-8 Crib in Borehole C4545 to total depth (80 m [264.5 ft] bgs). However, only two radionuclides (C-14 and tritium) were detected above background levels below the sample interval at 14.9 to 15.7 m (49 to 51.5 ft). Background levels for the 200-PW-3 OU radionuclide COPCs are shown in Table 3-22. The maximum results for the Borehole C4545 samples are presented in Appendix A and are summarized below.

Because none of the Borehole C4545 samples were collected in shallow soils (<4.6 m [<15 ft]) all of the sample results represent deep soils (ground surface to total depth). The following table presents the radionuclide COPCs detected above background levels and the depth interval of the maximum concentration.

Radionuclide Contaminant of Potential Concern	Maximum Concentration (pCi/g)	Depth Interval (ft bgs)	
		Top	Bottom
Carbon-14	89.7	27.5	30
Cesium-137	877,000	19	21.5
Europium-155	0.055	49	51.5
Plutonium-239/240	55.7	19	21.5
Technetium-99	79.6	19	21.5
Total Radioactive Strontium	4,380	19	21.5
Tritium	8.5	234	236.5

Background levels for the 200-PW-3 OU nonradionuclide COPCs are shown in Table 3-23. The following table presents the nonradionuclide COPCs detected above background levels (and those with no available background value) and the depth interval of the maximum concentration.

Nonradionuclide Contaminants of Potential Concerns	Maximum Concentration (mg/kg)	Depth Interval (ft bgs)	
		Top	Bottom
Cadmium	0.240	104	106.5
Chromium (III)	41.8	178	180.5
Hexavalent Chromium	0.278	27.5	30
Selenium	1.8	19	21.5
Acetone	0.019 J	19	21.5
Acetonitrile	0.012 J	25	27.5
Ethyl acetate	0.023	25	27.5
Decane	0.5 J	104	106.5
Nonadecane	1.6 J	104	106.5
Di-n-butylphthalate	0.69	178	180.5
Aroclor-1254	0.039	234	236.5

J = laboratory-estimated value.

The contaminant distribution model presented in the Work Plan (DOE/RL-2001-01, Section 3.4) is supported by the RI data, with some minor changes (Figure 3-34). Based on the contaminant distribution model in the Work Plan, the highest radiological contamination was expected from the base of the crib to several meters below and then was expected to decrease with depth. For most of the radionuclides detected above background levels, the highest concentrations were reported in the 5.8 to 6.6 m (19 to 21.5 ft) bgs sample collected directly beneath the crib, confirming the conceptual model that radionuclide contamination generally is confined to a relatively short vertical interval below the crib.

The contaminant distribution model in the Work Plan predicted a possible organic-rich layer, with no significant radionuclide content directly beneath the crib. Low concentrations of several organic compounds (acetone, acetonitrile, and ethyl acetate) were present in the sample intervals beneath the crib where the highest radiological contamination also was found, but a separate organic-rich layer was not present. Low concentrations of several semivolatile organic compounds, metals, and radionuclides were found to be present deeper in the vadose zone, which also was predicted by the contaminant distribution model in the Work Plan.

The soil-sampling intervals, lithology, field screening measurements, and borehole geophysical logs for Borehole C4545 are shown in Figure 3-35. Vertical concentration profile plots for those COPCs that had a detected value above background (and COPCs with no available background value) are shown in Figure 3-36.

3.3 IMPACTS TO GROUNDWATER

Groundwater is monitored routinely at the Hanford Site. Wells and aquifer tubes are sampled to characterize groundwater flow; groundwater contamination by metals, radionuclides, and

nonradiological constituents; and the extent of the contamination. Groundwater remediation progress, ingestion risk, and dose also are assessed. The Work Plan (DOE/RL-2001-01, Section 3.3) summarized the results of groundwater monitoring near each representative waste site, based on information in PNNL-14187, *Hanford Site Groundwater Monitoring for Fiscal Year 2002*.

The following provides a summary of important findings related to groundwater impacts.

- Two of the representative waste sites, the 216-Z-9 Trench and 216-A-8 Crib, have discharged effluent volumes greater than their soil column pore volume, which indicates that the volume of effluent released was sufficient to reach the unconfined aquifer during operation of these waste sites. However, based on currently available site data, including soil-moisture content measurements, these waste sites are not considered to be significant current sources of groundwater contamination.
- All available information indicates that the 241-Z-361 Settling Tank has not leaked, so this site is not considered to be a past or current source of groundwater contamination.
- The 216-Z-1A Tile Field has not been considered to be a past source of groundwater contamination, because the effluent volume discharged at this site was much less than the soil-column pore volume. However, based on the dispersed carbon tetrachloride vadose-zone plume data presented in Section 3.2.4.9, there are significant concentrations of carbon tetrachloride in the vadose zone adjacent to this site, so it is likely that this site was a past source of groundwater contamination, but it is not a significant current source.

3.3.1 Current Impact to Groundwater from the 216-Z-9 Trench

A total of 4.09×10^6 L (1.08×10^6 gal) of acidic high-salt liquid was discharged into the 216-Z-9 Trench, or about 1.5 times the estimated pore volume beneath the trench. The last groundwater samples from well 299-W15-8 were collected in 1991, before the water level dropped below the well screen. At that time, the results indicated low levels of both plutonium and americium (up to 8.3 and 5.9 pCi/L, respectively) in the groundwater. The presence of americium and plutonium in the groundwater in 1991, as well as the discharge of liquids greater than the pore volume beneath the trench, suggest that effluent and contaminants discharged to the trench previously have impacted the unconfined aquifer.

As reported in PNNL-14187, no radioactive contaminant plumes have been identified in the area of the 216-Z-9 Trench. Currently there are four nonradioactive groundwater plumes in the vicinity of the trench: carbon tetrachloride, chloroform, trichloroethylene, and nitrate. The presence of these groundwater contaminants is attributed to waste management practices at the 216-Z-9 Trench as well as at other adjacent facilities. Because the 216-Z-9 Trench received large inventories of carbon tetrachloride and nitrate, it is considered a major contributor of groundwater contamination in the 200 West Area for these two compounds.

Soil samples were collected in 2005 from Borehole C3426 (completed as well 299-W15-46) for laboratory analyses of soil-moisture content. Measured soil moisture contents in samples from

the Hanford formation ranged from 4.2 to 4.4 percent. Measured moisture contents in the CCU ranged from 19.1 to 23.6 percent, and moisture content in the Ringold Formation ranged from 2.8 to 6 percent. These values of soil moisture content for the granular soils of the Hanford formation and Ringold Formation, and for the more porous silt unit of the CCU, indicate that the vadose-zone soils beneath the trench are unsaturated. Considering the current unsaturated vadose-zone conditions, as well as the operation of the SVE system in the vicinity of the 216-Z-9 Trench since 1993, which further decreases soil moisture content, it is not likely that the trench is a significant current source of groundwater contamination.

3.3.2 Current Impact to Groundwater from the 216-Z-1A Tile Field

The total effluent volume (5.3×10^6 L [1.4 million gal]) discharged to the 216-Z-1A Tile Field over its period of operation is 12 percent of the estimated soil-pore volume. The current status of radiological contamination in the groundwater is described in PNNL-13116, *Hanford Site Groundwater Monitoring for Fiscal Year 1999*. This report indicates that there are no significant radiological groundwater plumes in the vicinity of the tile field. The lack of radiological groundwater contamination is consistent with the contaminant profiles in RHO-ST-17 and more recent geophysical logs. As indicated in RHO-ST-17, the maximum vertical extent of radiological contamination in the vadose zone is approximately 30 m (100 ft) bgs. However, geophysical logging suggests that Pa-233 extends to 37 m (121 ft) bgs.

However, based on the dispersed carbon tetrachloride vadose-zone plume data presented in Section 3.2.4.9, there are significant concentrations of carbon tetrachloride in the vadose zone adjacent to this site, so it is likely that this site was a past source of groundwater contamination. The operation of the SVE system in the vicinity of the 216-Z-1A Tile Field since 1993 has further decreased soil moisture in the vadose zone, so it is not likely that the tile field is a significant current source of groundwater contamination.

3.3.3 Current Impact to Groundwater from the 241-Z-361 Settling Tank

Characterization of the 241-Z-361 Settling Tank and its contents was conducted from 1999 to 2001 to resolve an unreviewed safety question related to tank conditions. Still photographs of the interior of the tank were taken in 1975, and a video camera inspection was conducted in 1999. The level of the sludge surface, and consequently the apparent depth of the sludge in the tank, is very similar in the two sets of photographs. The level is estimated by comparing the relative distance from the sludge surface to the roof of the tank in both photographs. This observation suggests that the level of waste in the tank has not changed substantially over the years between 1975 and 1999 (HNF-8735).

Helical piers were installed in 1999 to support an above-ground structure for sampling the tank. These piers extend beneath the depth of the tank bottom, and some are within a few feet of the tank. Some piers that were removed and reinstalled were surveyed for radioactive contamination upon removal, and no radiological contamination was detected (FH-0002791).

The lack of detected radiological contamination on the piers that were installed beneath the depth of the tank bottom and then removed, and the apparent stability in the tank sludge level since 1975, suggests that there has been no leak of tank contents to the soil column (FH-0002791), and therefore groundwater has not been impacted by the tank. (Note: In HNF-EP-0924, reference is made to the 241-Z-361 Settling Tank as "leaking." However, during further evaluation of pertinent records conducted during the preparation of the engineering evaluation / cost analysis, no documentation of any leaks was discovered for the 241-Z-361 Settling Tank. In addition, the liquid level was found to have remained constant during all of the liquid-level measurements for many years before the tank was isolated in 1973, indicating that the tank did not leak. The author of HNF-EP-0924 concurred that the statement regarding leaks from this tank appeared to be in error [verified by personal communication between the author of HNF-EP-0924 and Environmental Quality Management, Inc., who subsequently communicated the corrected information to the Work Plan author] [taken from DOE/RL-2001-01, Section 3.3.1.3]).

3.3.4 Current Impact to Groundwater from the Dispersed Carbon Tetrachloride Vadose-Zone Plume

Soil and soil-vapor samples collected between 1991 and 1993 near the 216-Z-9 Trench, 216-Z-1A Tile Field, 216-Z-18 Crib, and 216-Z-12 Crib (the release sites) indicated that carbon tetrachloride was present throughout the vadose zone within a 0.2 km² area. Maximum soil-vapor concentrations of carbon tetrachloride exceeded 10,000 ppmv near the CCU and above the water table at the 216-Z-9 Trench (e.g., in well 299-W15-218 [Figure 2-41]). In contrast, soil vapor concentrations of carbon tetrachloride were an order of magnitude lower at similar depths at the other release sites.

The expedited response action was initiated in 1992 using SVE and was based on concerns that the carbon tetrachloride residing in the vadose zone was continuing to spread to the groundwater and that, if left unchecked, the carbon tetrachloride would significantly increase the lateral extent of groundwater contamination. The purpose of the expedited response action was to minimize carbon tetrachloride migration within the vadose zone and away from the release sites.

The significant RIs conducted for the dispersed carbon tetrachloride vadose-zone plume since 1991 have generated over 3,400 sample results from over 2,100 locations in the 200 West Area. These investigations have led to a refined conceptual model concerning the current nature and extent of the dispersed carbon tetrachloride vadose-zone plume and its current impact on groundwater (see Section 3.2.4.9 and the SVE summary in Section 2.5). The key findings concerning the dispersed carbon tetrachloride vadose-zone plume are summarized below.

- The highest carbon tetrachloride concentrations in the shallow, intermediate, and deep vadose zone generally are located within about 75 to 152 m (246 to 500 ft) of the release sites.
- The carbon tetrachloride concentrations in the vadose zone around the release sites are being reduced by the SVE system and are significantly less than the initial concentrations measured in 1992-1993. The carbon tetrachloride concentrations in extracted soil vapor

were approximately 26 ppmv at the 216-Z-9 Trench well field in July 2005 and 14 ppmv at the 216-Z-1A Tile Field /216-Z-18 Crib well field in October 2005.

- From 1997 to 2005, the rebound carbon tetrachloride vapor concentrations measured during the shutdown period of the SVE system at the 216-Z-9 Trench each year show that the maximum concentrations (300 to 800 ppmv) are near the CCU, and the concentrations in the deep vadose zone near the water table are less than 100 ppmv (Figure 2-44). The intermittent operation of the SVE systems appears to have had no negative impacts on groundwater quality at the release sites, so the dispersed carbon tetrachloride vadose-zone plume at the release sites is not considered to be a significant current source of groundwater contamination. These maximum rebound concentrations also are less than the 1,200 ppmv soil-vapor concentration guideline that was established in the Step II dispersed plume DQO (CP-15372) that was used to decide if soil sampling should be conducted to evaluate the presence of a nearby carbon tetrachloride source.
- Outside of the area around the release sites, carbon tetrachloride vapor concentrations up to about 10 to 12 ppmv were found at various locations in the vadose zone, but these concentrations are not considered to have the potential for significant current or future groundwater impacts.
- The soil vapor and shallow groundwater sampling at wells within the eight carbon tetrachloride groundwater “hot spot” areas indicated that the deep vadose-zone soil-vapor concentrations are not significant sources of groundwater contamination in these areas.

3.3.5 Current Impact to Groundwater from the 216-A-8 Crib

The large waste-stream volumes discharged to the 216-A-8 Crib are known to have impacted groundwater, but it has not been determined whether the contaminant transport occurred uniformly through the soil column or if poor seals in nearby monitoring wells provided a preferential migration pathway. Short-lived beta emitters were detected in groundwater at the crib within 13 months of the start of operations, but longer lived beta and gamma emitters that were predicted to arrive in January 1958 apparently did not.

Soil samples were collected in 2005 from Borehole C4545 for laboratory analysis of soil-moisture content. Soil-moisture content ranged from 2.3 to 9.4 percent in the vadose zone beneath the crib. These values of soil-moisture content for the granular soils of the Hanford formation and Ringold Formation beneath the crib indicate that the vadose zone beneath the crib is unsaturated. Therefore, the crib is unlikely to be a significant current source of groundwater contamination.

The 216-A-8 Crib overlies a known groundwater contamination plume of I-129 and is within a few hundred meters of known plumes of tritium and chromium. Waste-stream characterization for the 216-A-8 Crib does not include these species as major components of the waste-stream discharge (WHC-EP-0367, *Liquid Effluent Study Final Project Report*), so it is unlikely that this crib contributed significantly to these plumes.

Figure 3-3. Generalized Stratigraphic Column for the 200 Areas.

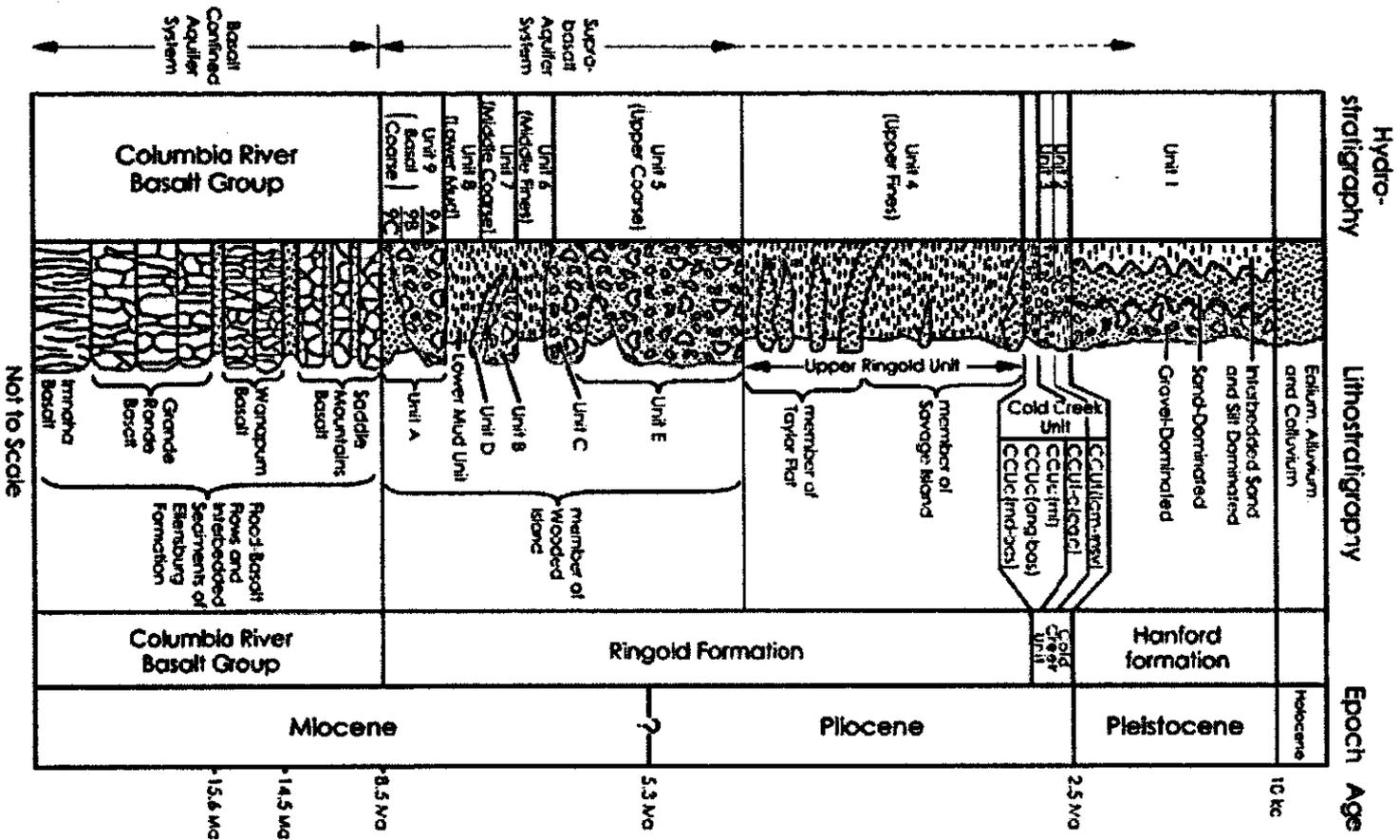


Figure 3-6. Stratigraphy of Borehole 299-W18-7 at the 216-Z-1A Tile Field.

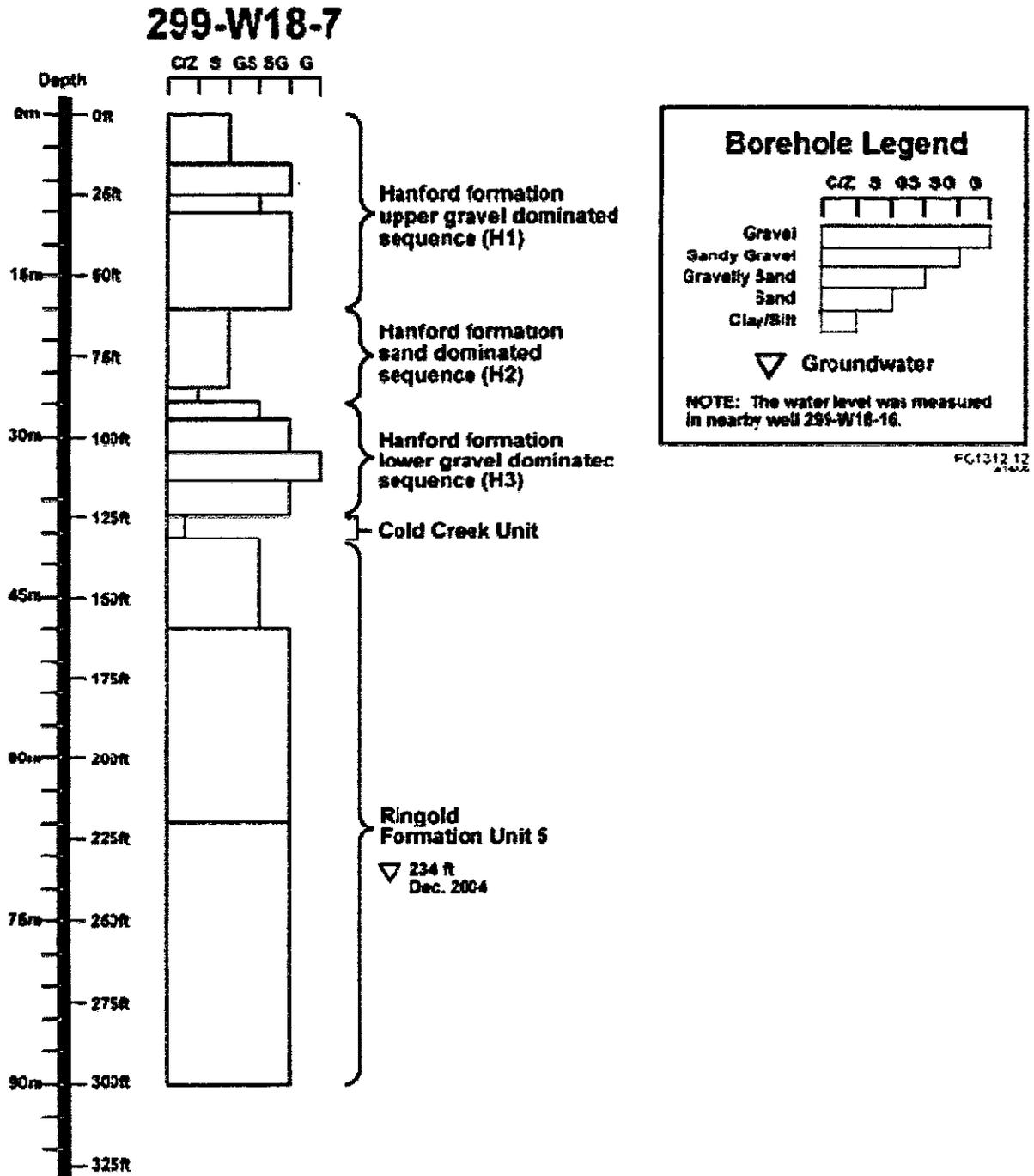


Figure 3-7. Stratigraphy of Borehole 299-W15-46 at the 216-Z-9 Trench.

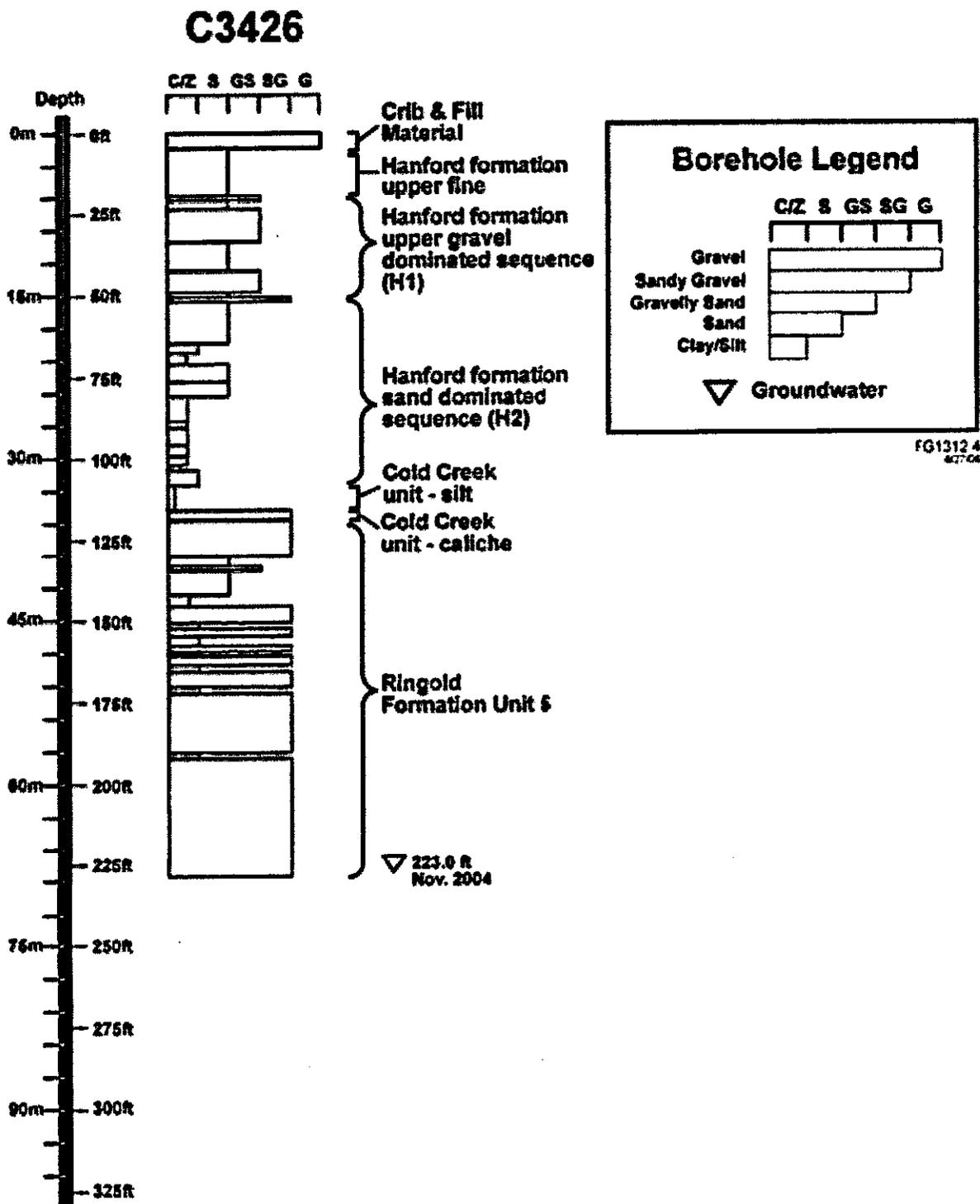


Figure 3-8. Stratigraphy of Borehole 299-W15-48 at the 216-Z-9 Trench.

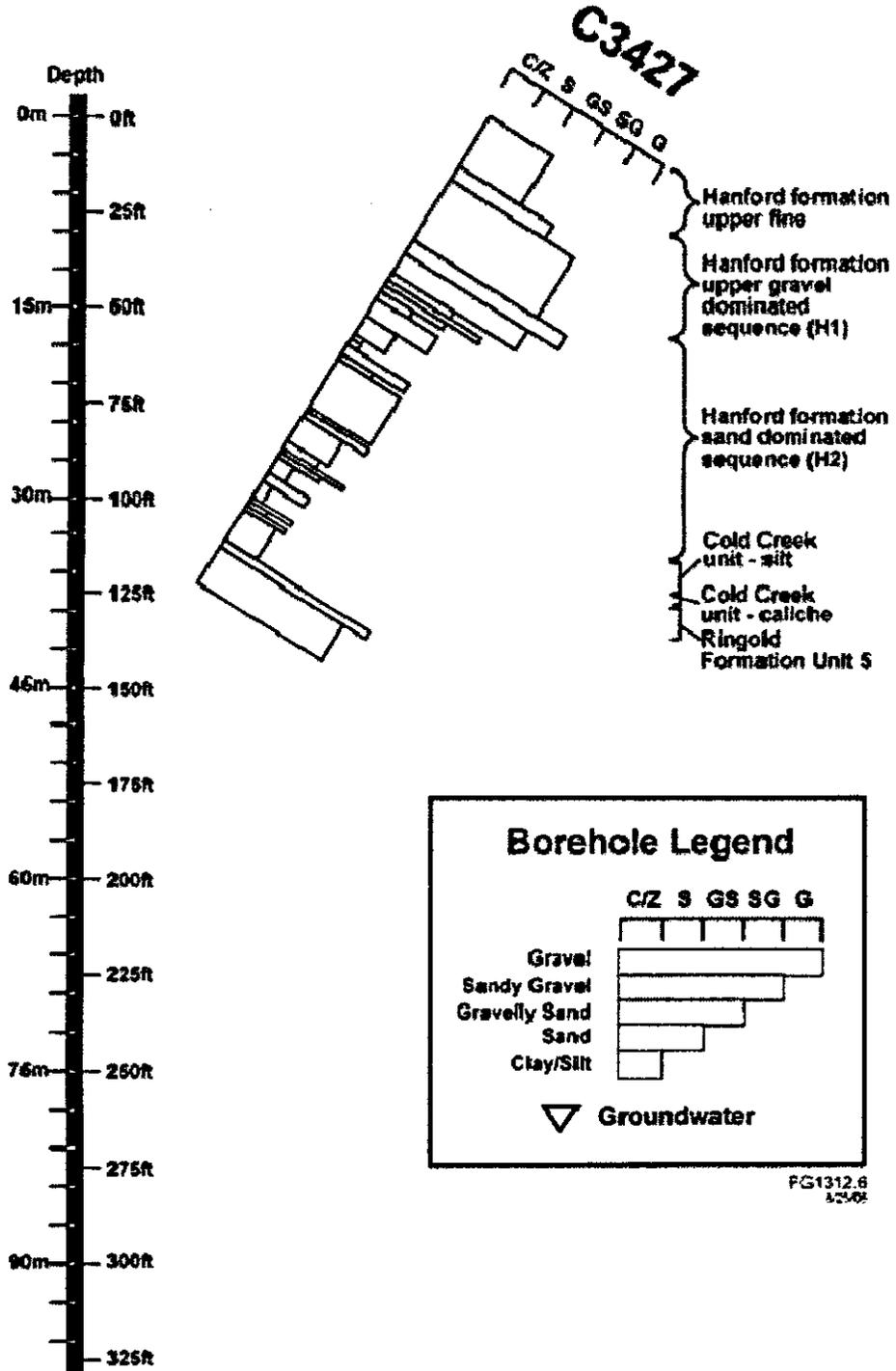


Figure 3-9. Stratigraphy of Borehole C4545 at the 216-A-8 Crib.

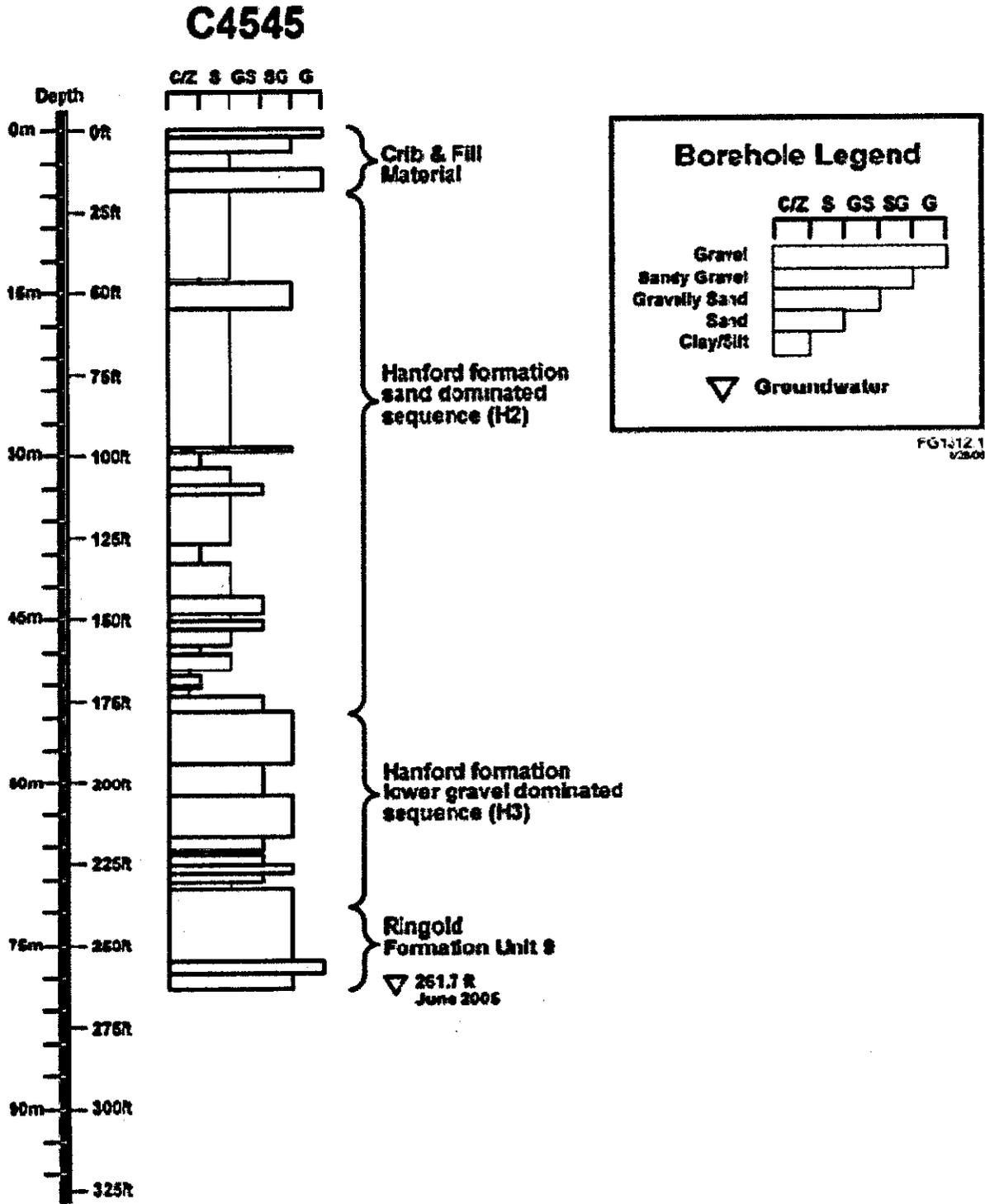
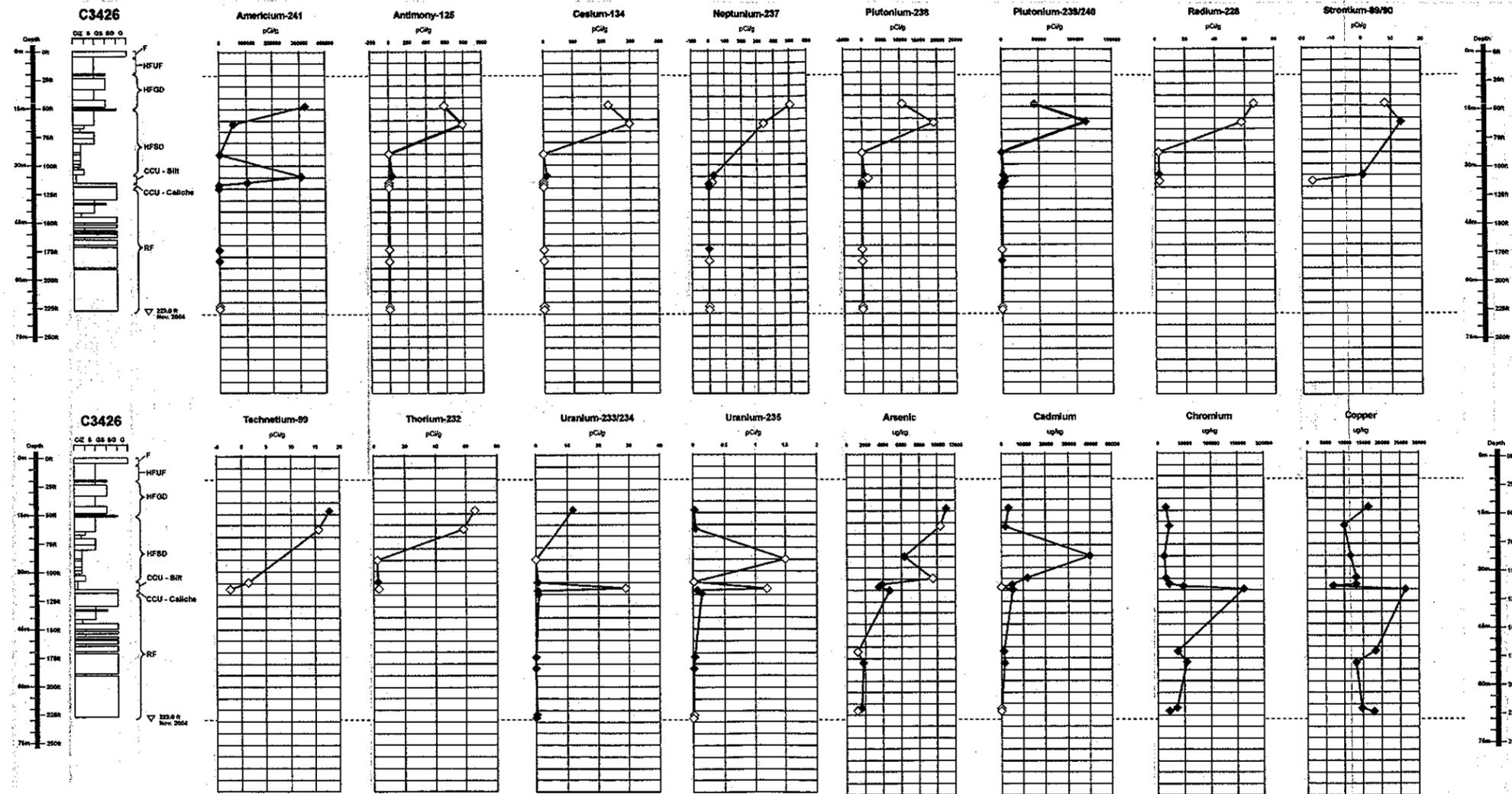


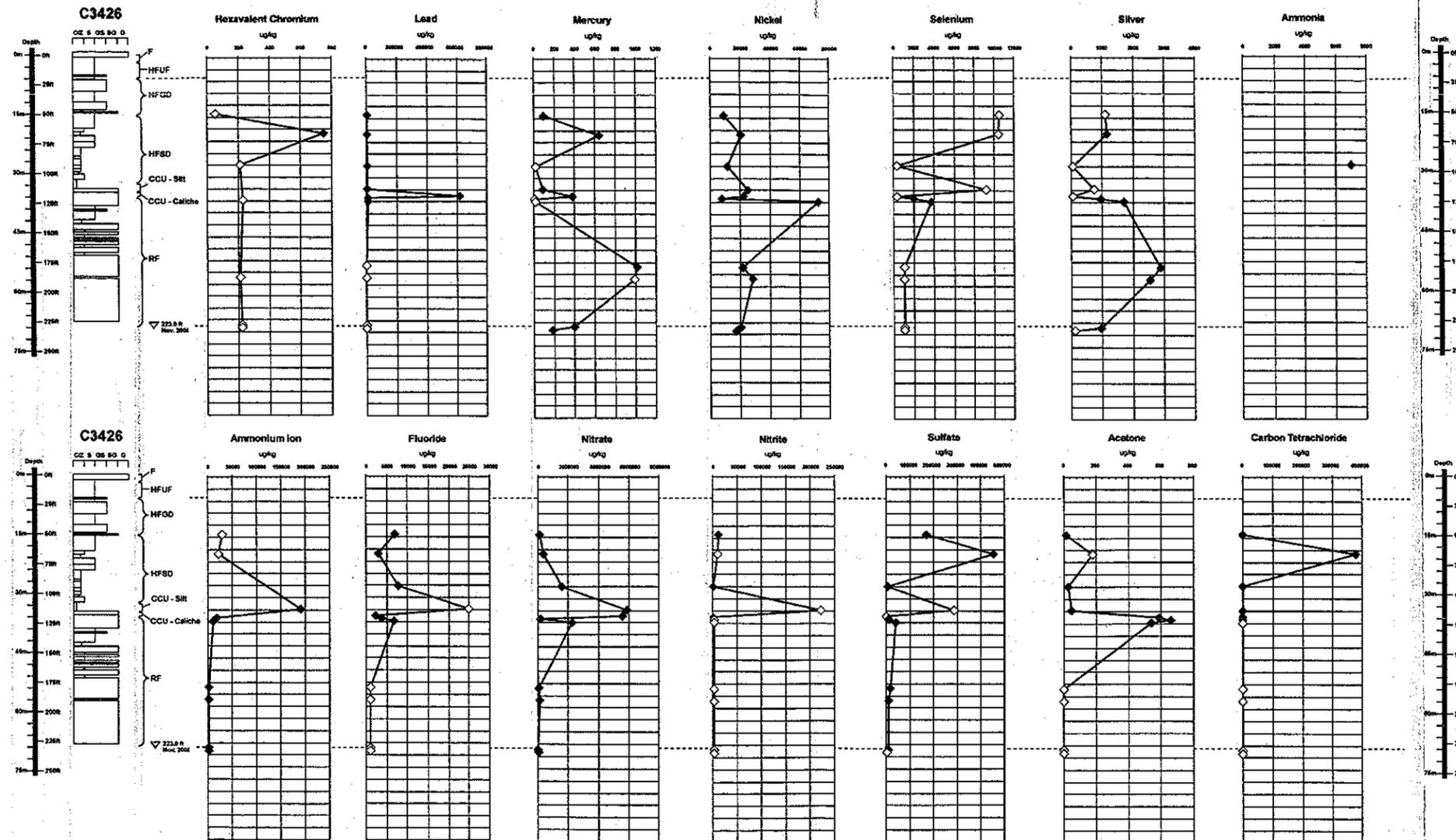
Figure 3-13. Vertical Concentration Profile Plots of the 200-PW-1 Operable Unit Chemicals of Potential Concern Above Background Levels from Borehole C3426 at the 216-Z-9 Trench. (pg 1 of 3)



216-Z-9 Trench - C3426	200-PW-1 OU Representative Sites Radiological COPCs		200-PW-1 OU Representative Sites Nonradiological COPCs		Concentration & Borehole Legend	
F - Fill HFUF - Hanford formation upper fine HFSD - Hanford Formation Gravel Dominated (H1) HFSD - Hanford Formation Sand Dominated (H2) CCU - Cold Creek Unit CCUs - Cold Creek Unit silt CCUs - Cold Creek Unit caliche RF - Ringold Formation Unit 5	COPCs Americium-241 NA Antimony-125 NA Cesium-134 NA Cesium-137 4.05 Cobalt-60 0.00842 Hydrogen-3 (tritium) NA Neptunium-237 NA Plutonium-238 0.00378 Plutonium-239 0.0248	COPCs Plutonium-240 0.0248 Radium-226 0.815 Radium-228 NA Strontium-90 0.178 Technetium-99 NA Thorium-232 1.32 Uranium-234 1.1 Uranium-235 0.109 Uranium-238 1.05	COPCs Metals Arsenic 6.47 Bismuth NA Cadmium 0.73 Chromium (III) 18.5 Chromium (VI) NA Copper 22.0 Lead 10.2	COPCs Mercury 0.33 Nickel 19.1 Selenium 0.73 Silver General Inorganics Ammonia/Ammonium 9.23* Chloride 100	COPCs Fluoride 2.81 Nitrate/Nitrite 52** Phosphate 0.79*** Sulfate 237 Volatile Organics NA Semivolatile Organics NA	C/Z S GS SG G Gravel Sandy Gravel Gravelly Sand Sand Clay/Silt ◆ Positive Detect ◇ Non-detect ▼ Water Table
COPCs = chemicals of potential concern. NA = no reference source available. - = not enough data above the reporting limit to provide for a distribution fit (DOE/RL-92-24) * = Value provided for ammonia. No value available for ammonium	** = Value provided for nitrate. Not enough data above the reporting limit to provide for a distribution fit for nitrite. *** = Value provided for O-phosphate Values from DOE/RL-96-12, Rev. 0, Hanford Site Background: Part 2, Soil Background for Radionuclides, Table 5-1, 90 th percentile and from DOE/RL-92-24, Rev. 3, Hanford Site Background: Part 1, Soil Background for Neurotoxic Analytes, Table 6-9a, 90 th percentile.					

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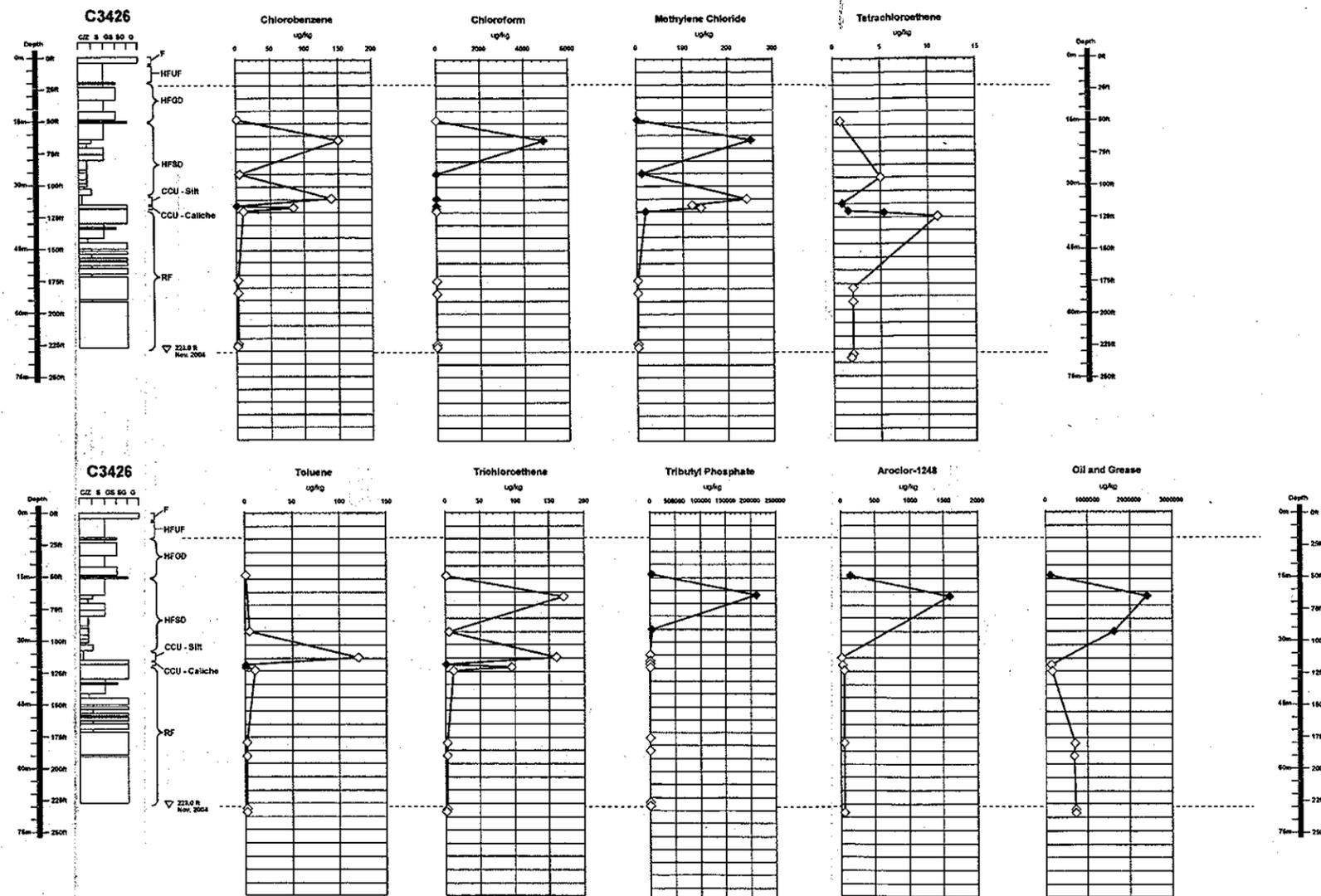
Figure 3-13. Vertical Concentration Profile Plots of the 200-PW-1 Operable Unit Chemicals of Potential Concern above Background Levels from Borehole C3426 at the 216-Z-9 Trench (pg 2 of 3).



216-Z-9 Trench - C3426	200-PW-1 OU Representative Sites Radiological COPCs		200-PW-1 OU Representative Sites Nonradiological COPCs				Concentration & Borehole Legend	
F - Fill HFUF - Hanford formation upper fine HFCD - Hanford Formation Gravel Dominated (H1) HFSD - Hanford Formation Sand Dominated (H2) CCU - Cold Creek Unit CCUz - Cold Creek Unit silt CCUo - Cold Creek Unit caliche RF - Ringold Formation Unit 5	COPCs Americium-241 NA Antimony-125 NA Cesium-134 NA Cesium-137 1.05 Cobalt-60 0.00842 Hydrogen-3 (tritium) NA Neptunium-237 NA Plutonium-238 0.00378 Plutonium-239 0.0248	COPCs Plutonium-240 0.0248 Radium-226 0.815 Radium-228 NA Strontium-90 0.178 Technetium-99 NA Thorium-232 1.32 Uranium-234 1.1 Uranium-235 0.109 Uranium-238 1.06	COPCs Metals Arsenic 6.47 Bismuth NA Cadmium NA Chromium (III) 18.5 Chromium (VI) NA Copper 22.0 Lead 10.2	COPCs Mercury 0.33 Nickel 19.1 Selenium - Silver 0.73 General Inorganics Ammonia/Ammonium 9.23* Chloride 100	COPCs Fluoride 2.81 Nitrate/Nitrite 52** Phosphate 0.79*** Sulfate 237 Volatile Organics NA Semivolatile Organics NA	C/Z S GS SG G Gravel Sandy Gravel Gravelly Sand Sand Clay/Silt Positive Detect Non-detect Water Table		
COPCs = chemicals of potential concern. NA = no reference source available. - = not enough data above the reporting limit to provide for a distribution fit (DOE/RL-92-24) * = Value provided for ammonia. No value available for ammonium	** = Value provided for nitrate. Not enough data above the reporting limit to provide for a distribution fit for nitrite. *** = Value provided for D-phosphate Values from DOE/RL-96-12, Rev. 0, Hanford Site Background: Part 2, Soil Background for Radionuclides, Table 5-1, 90 th percentile and from DOE/RL-92-24, Rev. 3, Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes, Table 6-9.a, 90 th percentile							

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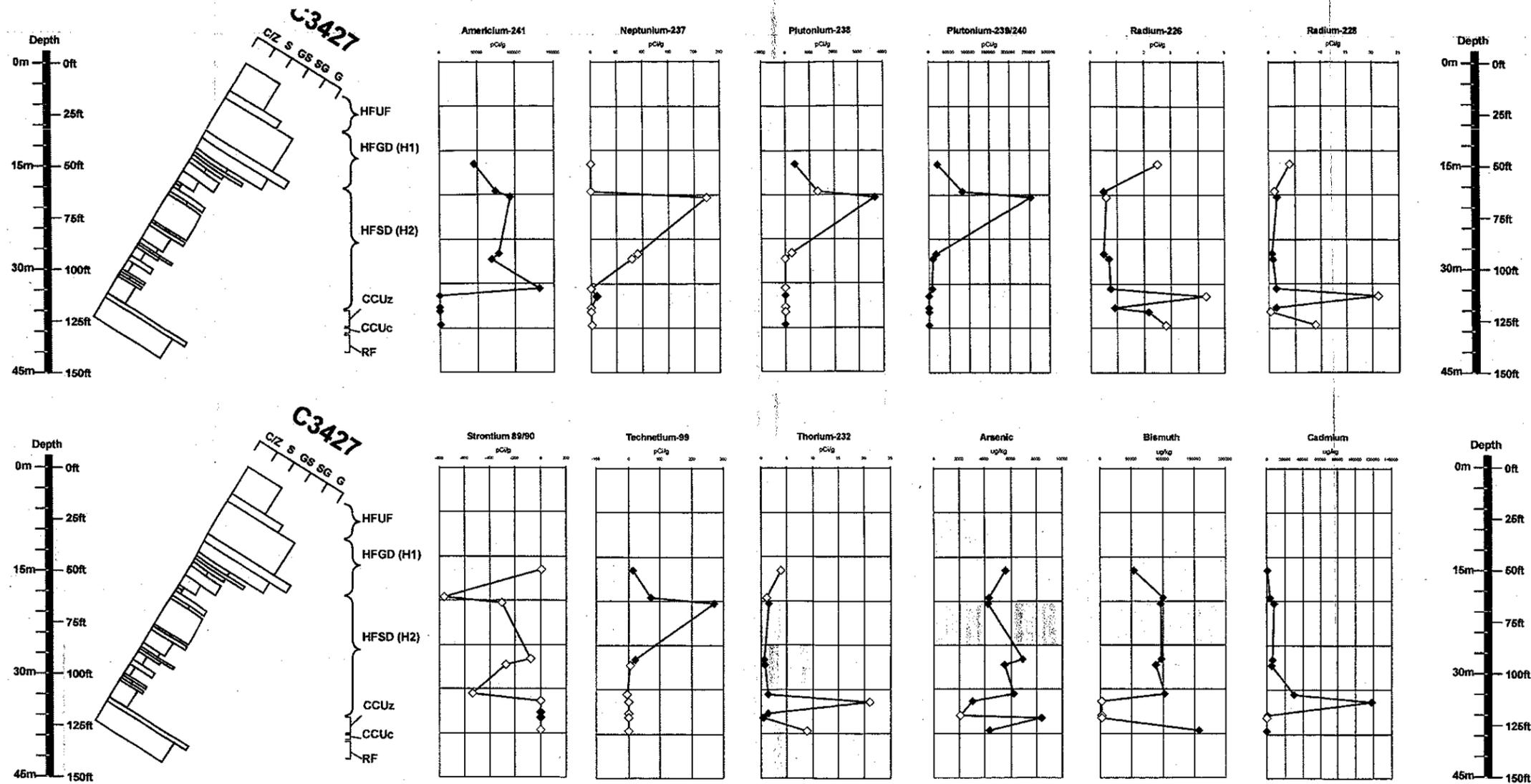
Figure 3-13. Vertical Concentration Profile Plots of the 200-PW-1 Operable Unit Chemicals of Potential Concern above Background Levels from Borehole C3426 at the 216-Z-9 Trench (pg 3 of 3).



216-Z-9 Trench - C3426		200-PW-1 OU Representative Sites Radiological COPCs		200-PW-1 OU Representative Sites Nonradiological COPCs		Concentration & Borehole Legend	
F	- Fill	COPCs	Background (pCi/g)	COPCs	Background (mg/kg)	COPCs	Background (mg/kg)
HFUF	- Hanford formation upper fine	Americium-241	NA	Plutonium-240	0.0248	Mercury	0.33
HFGD	- Hanford Formation Gravel Dominated (H1)	Antimony-125	NA	Radium-226	0.815	Nickel	19.1
HFSD	- Hanford Formation Sand Dominated (H2)	Cesium-134	NA	Radium-228	NA	Selenium	52**
CCU	- Cold Creek Unit	Cesium-137	1.05	Strontium-90	0.178	Silver	0.73
CCUs	- Cold Creek Unit silt	Cobalt-60	0.00642	Technetium-99	NA	General Inorganics	
CCUc	- Cold Creek Unit caliche	Hydrogen-3 (tritium)	NA	Thorium-232	1.32	Ammonia/Ammonium	9.23*
RF	- Ringold Formation Unit 6	Neptunium-237	NA	Uranium-234	1.1	Chloride	100
		Plutonium-238	0.00378	Uranium-235	0.109	Volatile Organics	NA
		Plutonium-239	0.0248	Uranium-238	1.06	Semivolatile Organics	NA
COPCs = chemicals of potential concern. NA = no reference source available. - = not enough data above the reporting limit to provide for a distribution fit (DOE/RL-92-24) * = Value provided for ammonia. No value available for ammonium		** = Value provided for nitrate. Not enough data above the reporting limit to provide for a distribution fit for nitrite. *** = Value provided for O-phosphate Values from DOE/RL-96-12, Rev. 0, <i>Hanford Site Background: Part 2, Soil Background for Radionuclides</i> , Table 5-1, 90 th percentile and from DOE/RL-92-24, Rev. 3, <i>Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes</i> , Table 6-9 a, 90 th percentile.		C/Z S GS SG G Gravel Sandy Gravel Gravelly Sand Sand Clay/Silt ◆ Positive Detect ◇ Non-detect ▼ Water Table			

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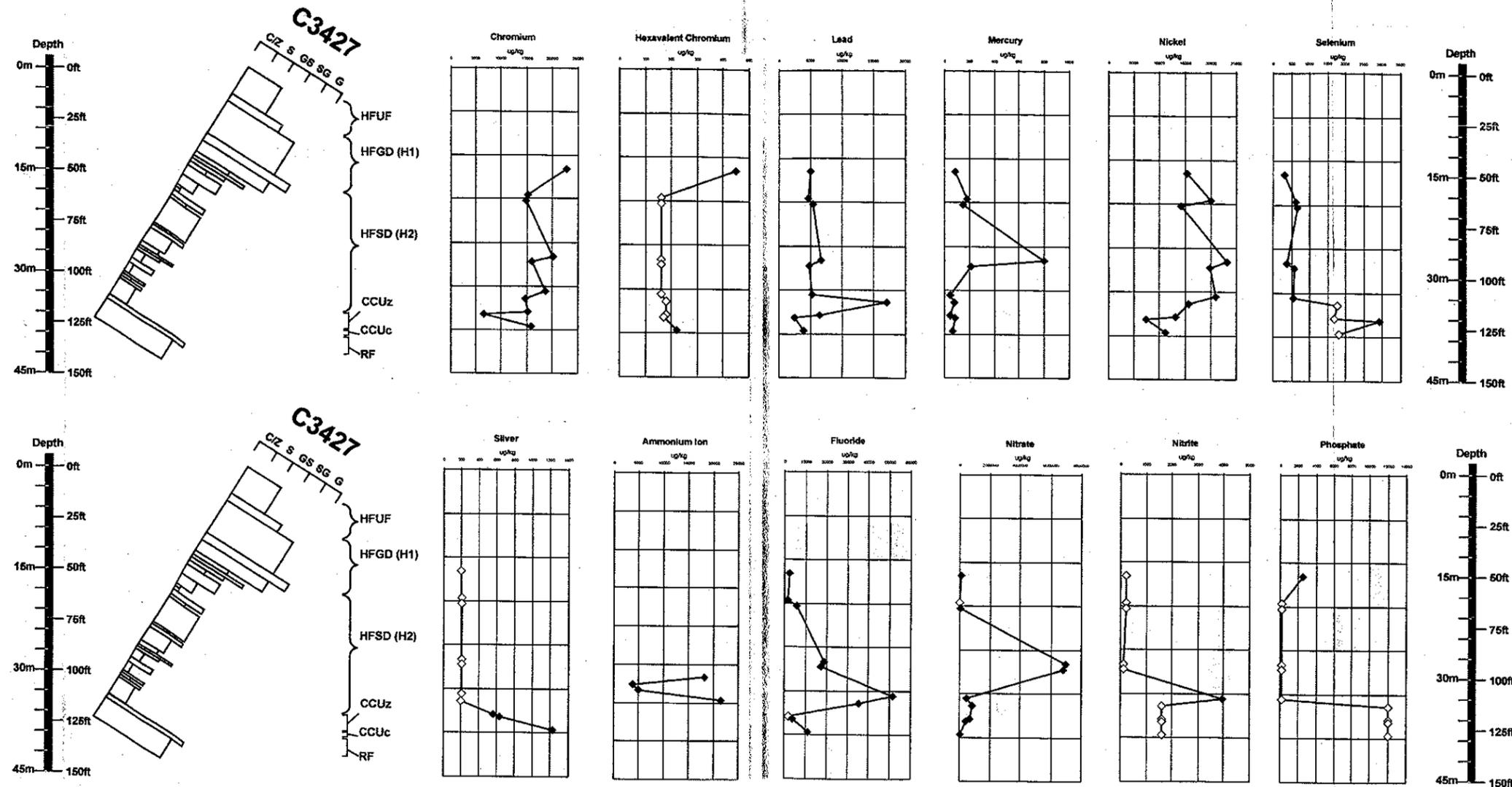
Figure 3-14. Vertical Concentration Profile Plots of the 200-PW-1 Operable Unit Chemicals of Potential Concern above Background Levels from Borehole C3427 at the 216-Z-9 Trench (pg 1 of 3).



216-Z-9 - C3427	200-PW-1 OU Representative Sites Radiological COPCs		200-PW-1 OU Representative Sites Nonradiological COPCs			Concentration & Borehole Legend	
F - Fill HFUF - Hanford formation upper fine HFGD - Hanford Formation Gravel Dominated (H1) HFSD - Hanford Formation Sand Dominated (H2) CCU - Cold Creek Unit CCUz - Cold Creek Unit silt CCUc - Cold Creek Unit caliche RF - Ringold Formation Unit 5	COPCs Americium-241 NA Antimony-125 NA Cesium-134 NA Cesium-137 1.05 Cobalt-60 0.00842 Hydrogen-3 (tritium) NA Neptunium-237 NA Plutonium-238 0.00378 Plutonium-239 0.0248	COPCs Plutonium-240 0.0248 Radium-226 0.815 Radium-228 NA Strontium-90 0.178 Technetium-99 NA Thorium-232 1.32 Uranium-234 1.1 Uranium-235 0.109 Uranium-238 1.06	COPCs Metals Arsenic 6.47 Bismuth NA Cadmium - Chromium (III) 18.5 Chromium (VI) NA Copper 22.0 Lead 10.2	COPCs Mercury 0.33 Nickel 19.1 Selenium - Silver 0.73 General Inorganics Ammonia/Ammonium 9.23* Chloride 100	COPCs Fluoride 2.81 Nitrate/Nitrite 52** Phosphate 0.75*** Sulfate 237 Volatile Organics NA Semivolatile Organics NA	C/Z S GS SG G Gravel Sandy Gravel Gravelly Sand Sand Clay/Silt Positive Detect Non-detect Water Table	* = Value provided for ammonia. No value available for ammonium ** = Value provided for nitrate. Not enough data above the reporting limit to provide for a distribution fit for nitrate. *** = Value provided for O-phosphate Values from DOE/RL-96-12, Rev. 0, Hanford Site Background: Part 2, Soil Background for Radionuclides, Table 5-1, 90 th percentile and from DOE/RL-92-24, Rev. 3, Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes, Table 6-9.a, 90 th percentile.

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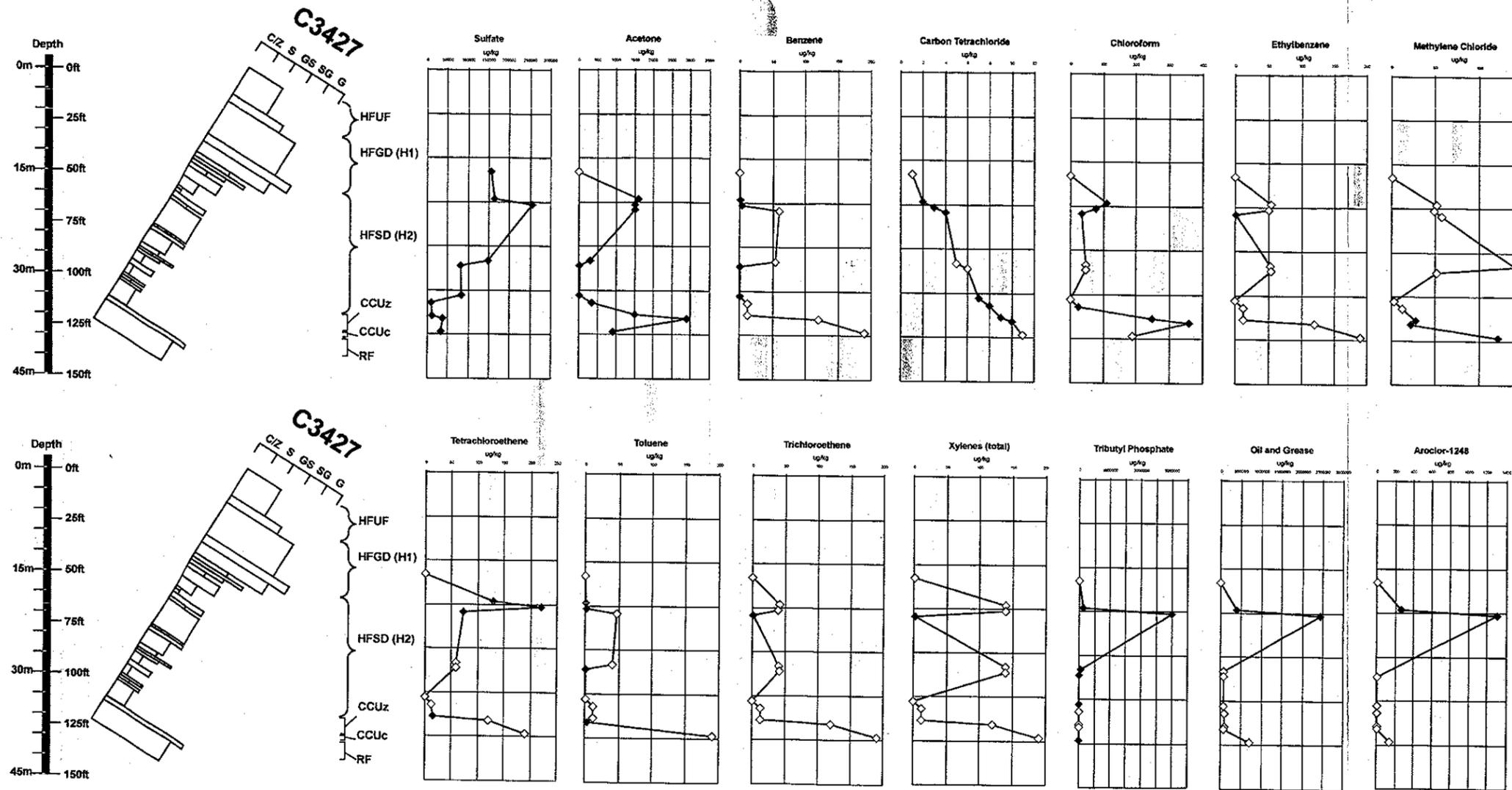
Figure 3-14. Vertical Concentration Profile Plots of the 200-PW-1 Operable Unit Chemicals of Potential Concern above Background Levels from Borehole C3427 at the 216-Z-9 Trench (pg 2 of 3).



216-Z-9 - C3427		200-PW-1 OU Representative Sites Radiological COPCs		200-PW-1 OU Representative Sites Nonradiological COPCs		Concentration & Borehole Legend	
F	Fill	COPCs	Background (pCi/g)	COPCs	Background (mg/kg)	COPCs	Background (mg/kg)
HFUF	Hanford formation upper fine	Americium-241	NA	Plutonium-240	0.0248	Mercury	0.33
HFGD	Hanford Formation Gravel Dominated (H1)	Antimony-125	NA	Radium-226	0.815	Nickel	19.1
HFSD	Hanford Formation Sand Dominated (H2)	Cesium-134	NA	Radium-228	NA	Selenium	0.79***
CCU	Cold Creek Unit	Cesium-137	1.05	Strontium-90	0.178	Silver	0.73
CCUz	Cold Creek Unit silt	Cobalt-60	0.00842	Technetium-99	NA	General Inorganics	
CCUc	Cold Creek Unit caliche	Hydrogen-3 (tritium)	NA	Thorium-232	1.32	Ammonia/Ammonium	9.23*
RF	Ringold Formation Unit 6	Neptunium-237	NA	Uranium-234	1.1	Chloride	100
		Plutonium-238	0.00378	Uranium-235	0.109	Volatile Organics	NA
		Plutonium-239	0.0248	Uranium-238	1.06	Semivolatile Organics	NA
COPCs = chemicals of potential concern. NA = no reference source available. * = not enough data above the reporting limit to provide for a distribution fit (DOE/RL-92-24) ** = Value provided for ammonia. No value available for ammonium		** = Value provided for nitrate. Not enough data above the reporting limit to provide for a distribution fit for nitrite. *** = Value provided for U-phosphate Values from DOE/RL-96-12, Rev. 0, Hanford Site Background: Part 2, Soil Background for Radionuclides, Table S-1, 90 th percentile and from DOE/RL-92-24, Rev. 3, Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes, Table 6-9a, 90 th percentile.		C/Z S GS SG G Gravel Sandy Gravel Gravelly Sand Sand Clay/Silt		◆ Positive Detect ◇ Non-detect ▼ Water Table	

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Figure 3-14. Vertical Concentration Profile Plots of the 200-PW-1 Operable Unit Chemicals of Potential Concern above Background Levels from Borehole C3427 at the 216-Z-9 Trench (pg 3 of 3).



216-Z-9 - C3427		200-PW-1 OU Representative Sites Radiological COPCs				200-PW-1 OU Representative Sites Nonradiological COPCs				Concentration & Borehole Legend	
F	Fill	COPCs	Background (pCi/g)	COPCs	Background (pCi/g)	COPCs	Background (mg/kg)	COPCs	Background (mg/kg)	C/Z S GS SG G ◆ Positive Detect ◇ Non-detect ▽ Water Table	
HFUF	Hanford formation upper fine	Americium-241	NA	Plutonium-240	0.0248	Metals		Mercury	0.33		
HFGD	Hanford Formation Gravel Dominated (H1)	Antimony-125	NA	Radium-226	0.815	Arsenic	6.47	Nickel	19.1	Nitrate/Nitrite	52**
HFSD	Hanford Formation Sand Dominated (H2)	Cesium-134	NA	Radium-228	NA	Bismuth	NA	Selenium	0.73	Phosphate	0.79***
CCU	Cold Creek Unit	Cesium-137	1.06	Strontium-90	0.178	Cadmium	NA	Silver	0.73	Sulfate	237
CCUz	Cold Creek Unit silt	Cobalt-60	0.00842	Technetium-99	NA	Chromium (III)	18.5	General Inorganics		Volatile Organics	NA
CCUc	Cold Creek Unit caliche	Hydrogen-3 (tritium)	NA	Thorium-232	1.32	Chromium (VI)	NA	Ammonia/Ammonium	9.23*	Semivolatile Organics	NA
CCUc	Cold Creek Unit caliche	Nestrium-237	NA	Uranium-234	1.1	Copper	22.0	Chloride	100		
RF	Ringold Formation Unit 6	Plutonium-238	0.00378	Uranium-235	0.109	Lead	10.2				
		Plutonium-239	0.0248	Uranium-238	1.06						

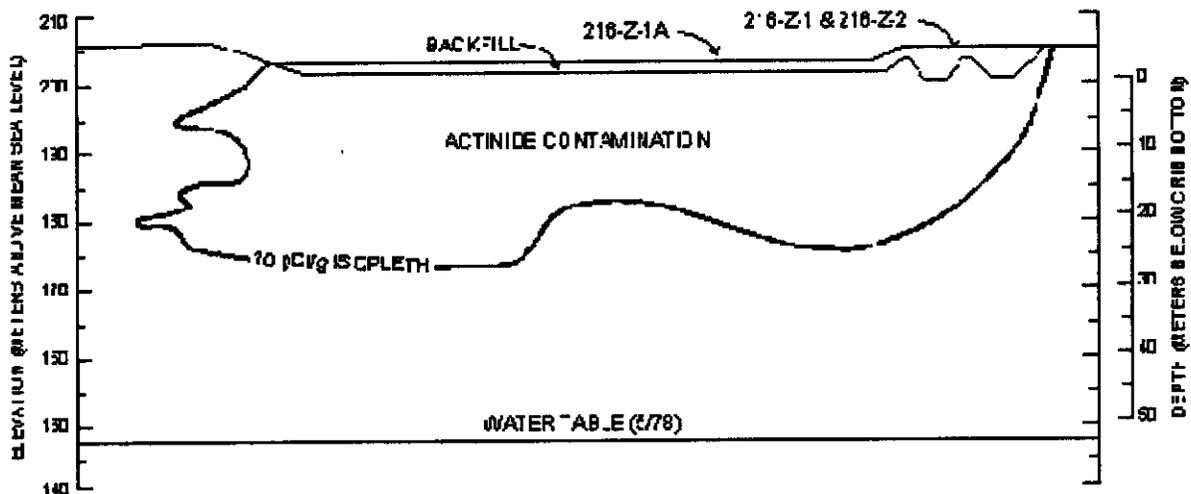
COPCs = chemicals of potential concern.
 NA = no reference source available.
 * = not enough data above the reporting limit to provide for a distribution fit (DOE/RL-92-24)
 ** = Value provided for nitrate. Not enough data above the reporting limit to provide for a distribution fit for nitrite.
 *** = Value provided for O-phosphate.
 Values from DOE/RL-96-12, Rev. 3, Hanford Site Background: Part 2, Soil Background for Radionuclides, Table 5-1, 90th percentile and from DOE/RL-92-24, Rev. 3, Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes, Table 6-9.a, 90th percentile.

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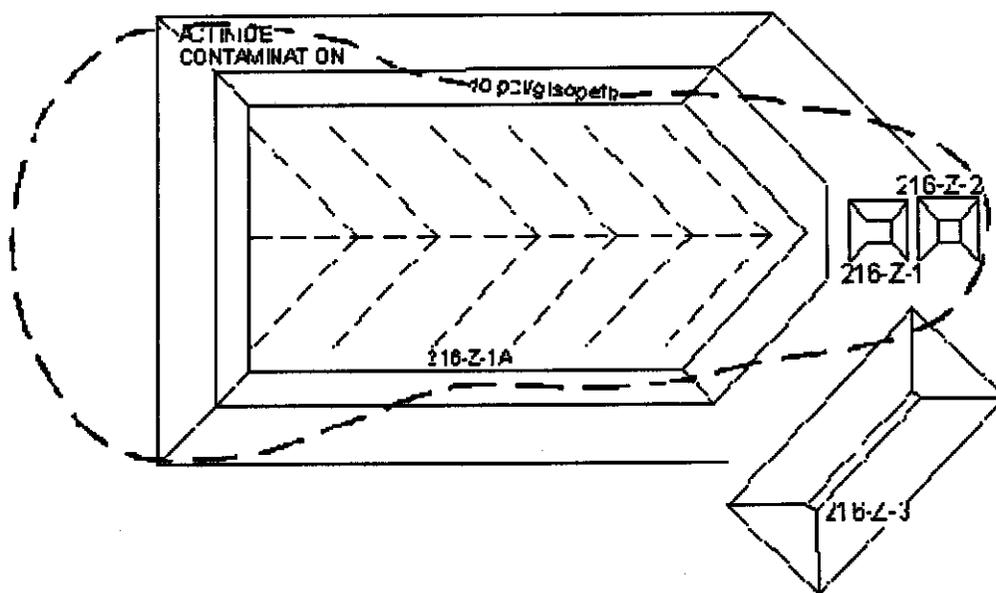
Figure 3-17. Extent of Actinide Contamination at the 216-Z-1A Tile Field.

(From RHO-ST-17)

Based on soil samples from 16 boreholes.



(A)

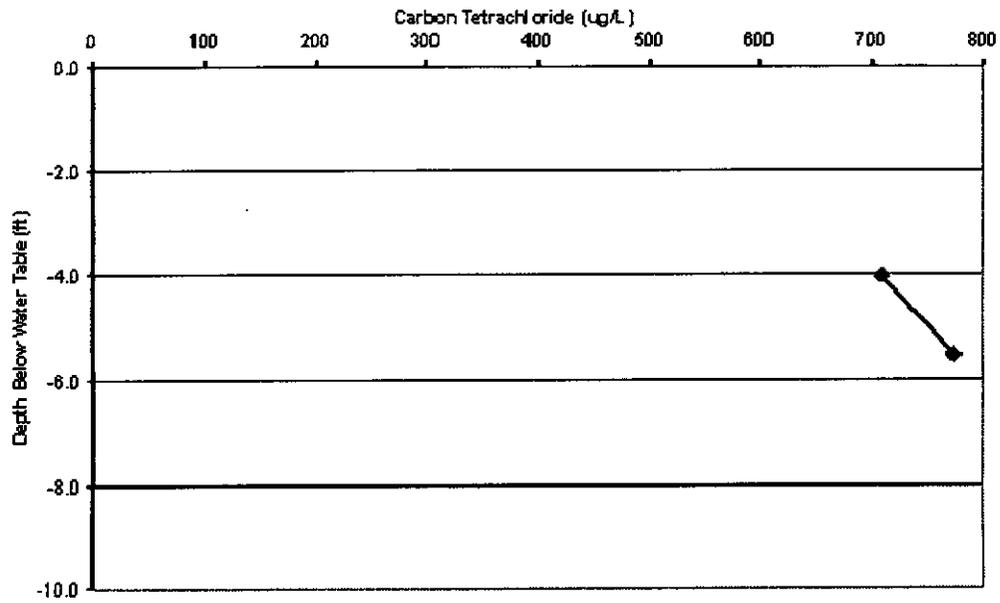


(B)

74-102500B

Figure 3-20. Depth of Discrete Carbon Tetrachloride Groundwater Sampling Results. (4 Pages)

Well 299-W11-10 (Area 4)



Well 299-W11-42 (Area 2)

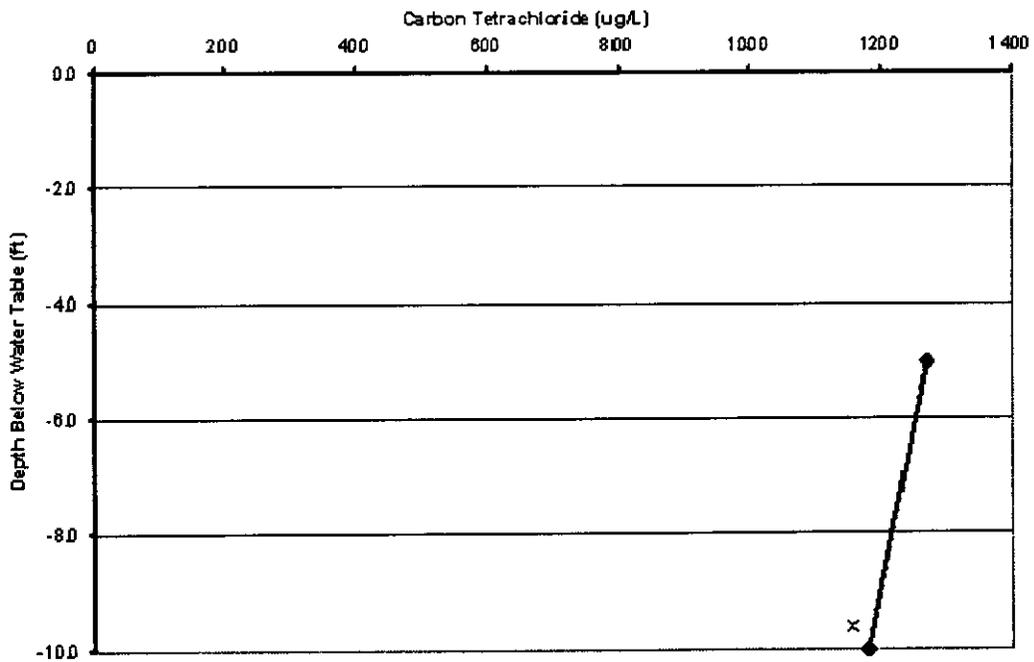
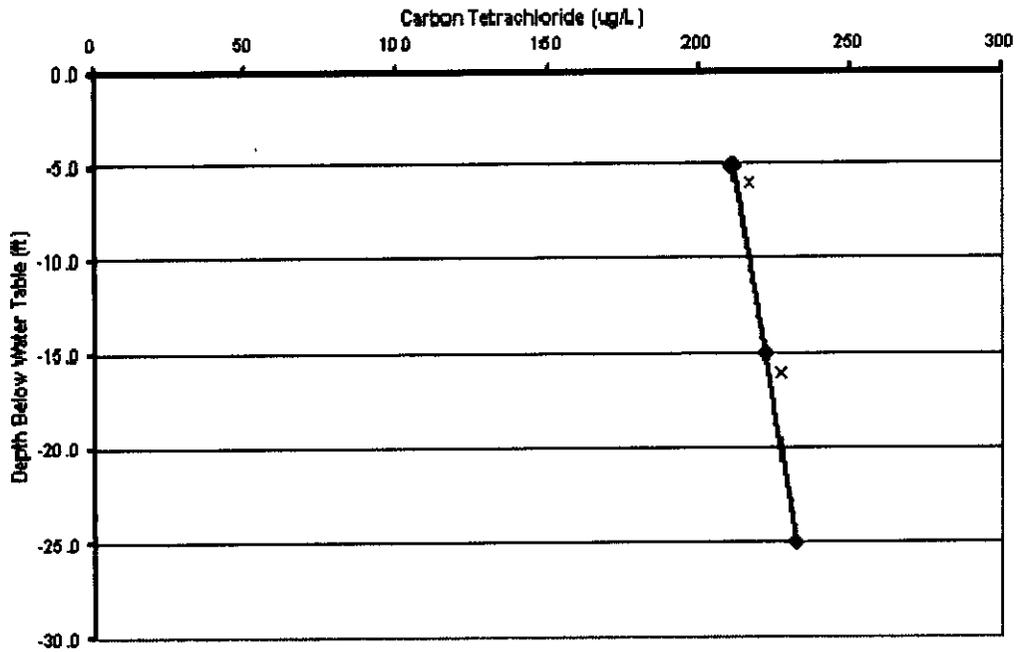


Figure 3-20. Depth of Discrete Carbon Tetrachloride Groundwater Sampling Results. (4 Pages)

Well 299-W23-4 (Area 8)

X = sample hold time was exceeded before laboratory analysis.



Well 299-W15-30 (Area 7)

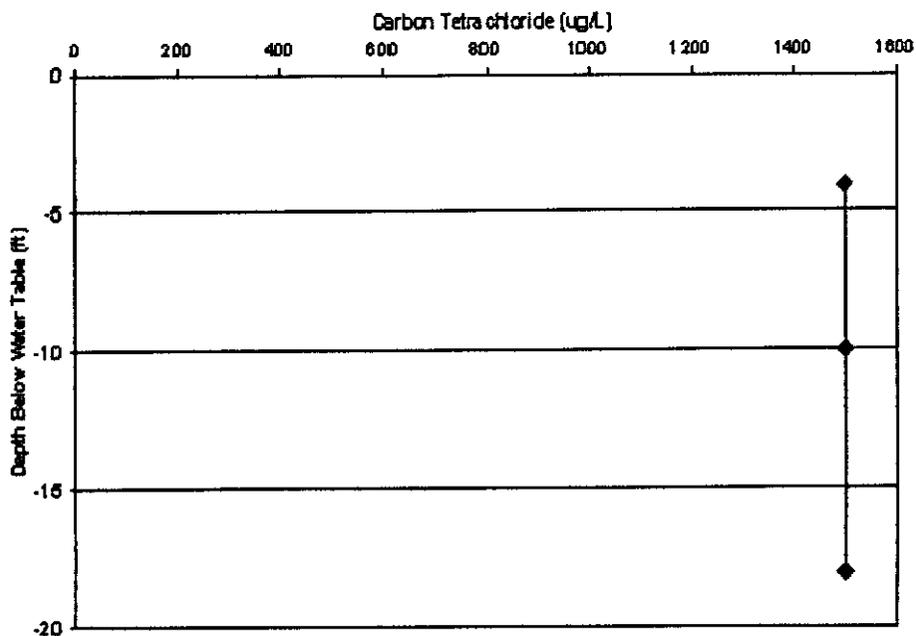
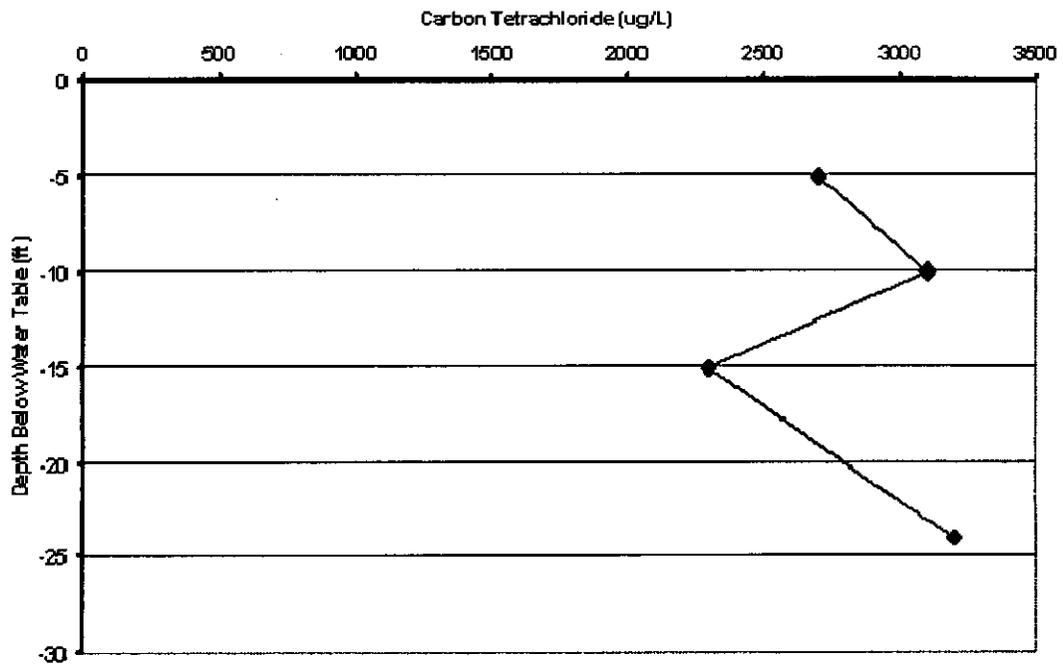


Figure 3-20. Depth of Discrete Carbon Tetrachloride Groundwater Sampling Results. (4 Pages)

Well 299-W15-40 (Area 5)



Well 299-W15-43 (Area 5)

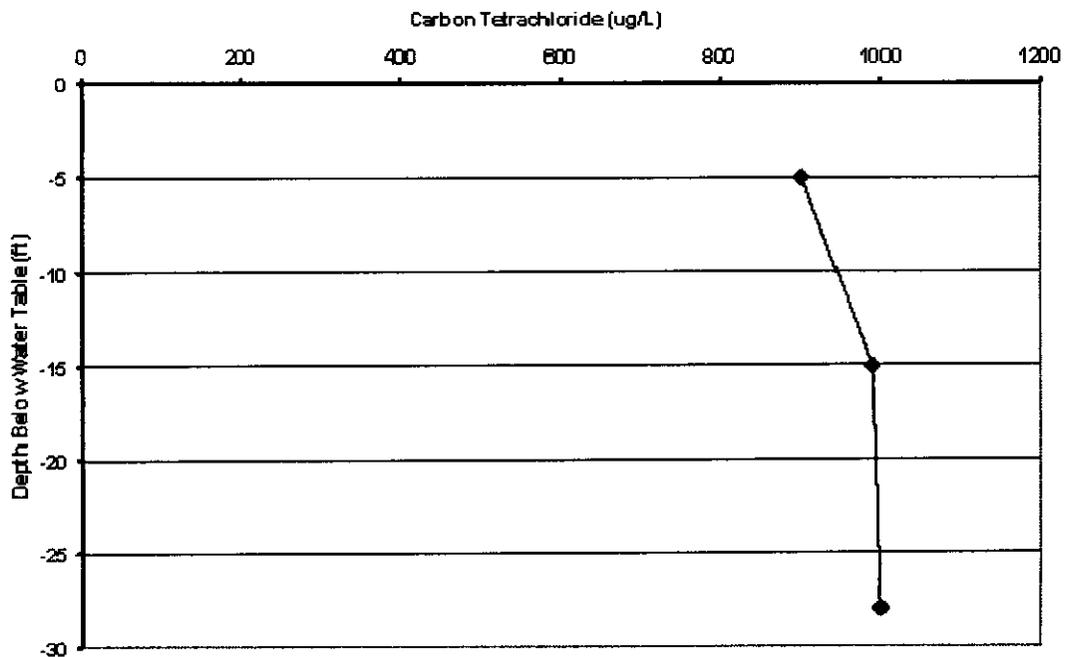
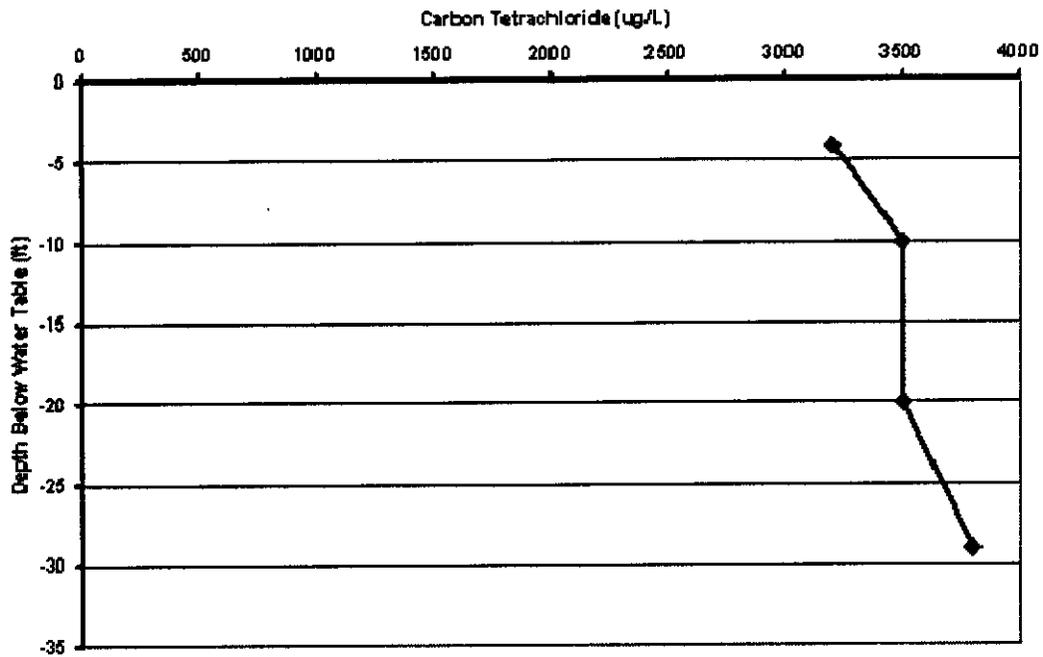
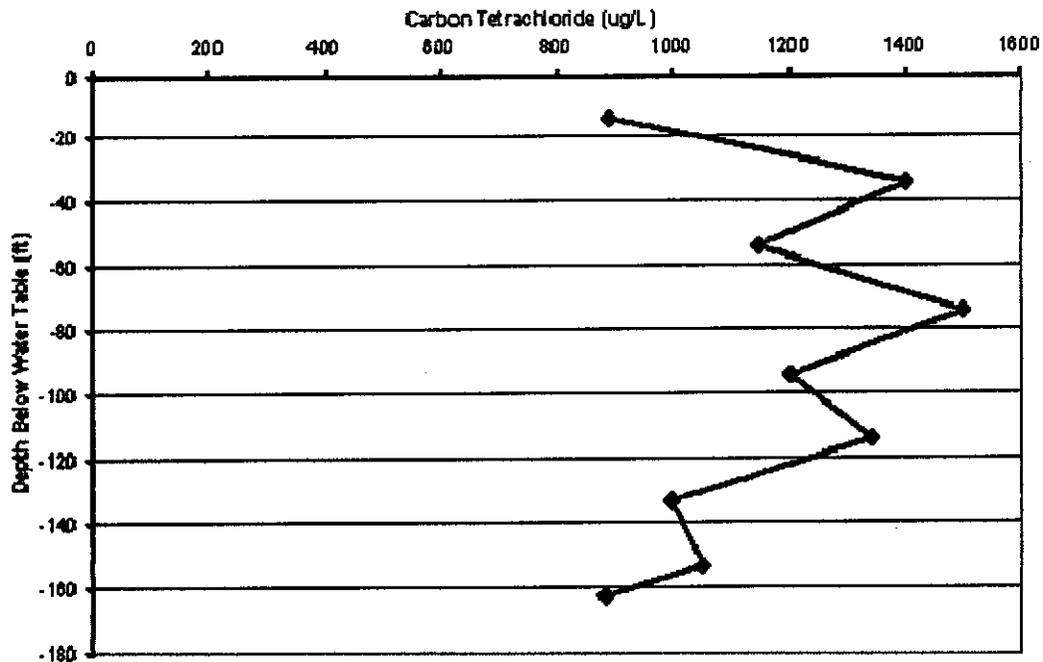


Figure 3-20. Depth of Discrete Carbon Tetrachloride Groundwater Sampling Results. (4 Pages)

Well 299-W15-765 (Area 5)



Well 299-W11-25B (Area 2)



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Table 3-1. Background Values for the 200-PW-1 Operable Unit Representative Waste Sites Radiological Contaminants of Potential Concern.

Radiological Contaminants of Potential Concern	Background Concentration (pCi/g)
Americium-241	NA
Antimony-125	NA
Cesium-134	NA
Cesium-137	1.05
Cobalt-60	0.00842
Hydrogen-3 (tritium)	NA
Neptunium-237	NA
Plutonium-238	0.00378
Plutonium-239	0.0248*
Plutonium-240	0.0248*
Radium-226	0.815
Radium-228	NA
Strontium-90	0.178
Technetium-99	NA
Thorium-232	1.32
Uranium-234	1.1
Uranium-235	0.109
Uranium-238	1.06

NA = no reference source available.

* = value provided for Plutonium 239/240

Values from DOE/RL-96-12, Rev. 0, *Hanford Site Background: Part 2, Soil Background for Radionuclides*, Table 5-1, 90th percentile.

Table 3-2. Background Values for the 200-PW-1 Operable Unit
 Representative Sites Nonradiological Contaminants
 of Potential Concern. (2 Pages)

Nonradiological Contaminants of Potential Concern	Background Concentration (mg/kg)
<i>Nonradiological Constituents – Metals</i>	
Arsenic	6.47
Bismuth	NA
Cadmium	--
Chromium (III)	18.5
Chromium (VI)	NA
Copper	22.0
Lead	10.2
Mercury	0.33
Nickel	19.1
Selenium	--
Silver	0.73
<i>Nonradiological Constituents – General Inorganics</i>	
Ammonia/Ammonium	9.23 ^a
Chloride	100
Fluoride	2.81
Nitrate/Nitrite	52 ^b
Phosphate	0.79 ^c
Sulfate	237
<i>Nonradiological Constituents – Volatile Organics</i>	
1,1-Dichloroethane (DCA)	NA
1,2-Dichloroethane (DCA)	NA
1,1,1-Trichloroethane TCA)	NA
Acetone	NA
Benzene	NA
Carbon Tetrachloride	NA
Cis-1,2-Dichloroethylene	NA
Chlorobenzene	NA
Chloroform	NA
Ethylbenzene	NA
Hydraulic Fluids (greases)	NA
Methyl ethyl ketone (MEK)	NA
Methyl isobutyl ketone (MIBK or Hexone)	NA
Methylene Chloride	NA

Table 3-2. Background Values for the 200-PW-1 Operable Unit
 Representative Sites Nonradiological Contaminants
 of Potential Concern. (2 Pages)

Nonradiological Contaminants of Potential Concern	Background Concentration (mg/kg)
n-Butyl benzene	NA
Toluene	NA
Tetrachloroethylene (PCE)	NA
Trans-1,2-Dichloroethylene	NA
Trichloroethylene (TCE)	NA
Xylene	NA
<i>Nonradiological Constituents – Semivolatile Organics</i>	
Normal Paraffins (greases and cutting oils)	NA
Polychlorinated biphenyls (PCBs)	NA
Phenol	NA
Tributyl Phosphate and derivatives (mono, di)	NA

NA = no reference source available.

-- = not enough data above the reporting limit to provide for a distribution fit (DOE/RL-92-24)

^a Value provided for ammonia. No value available for ammonium.

^b Value provided for nitrate. Not enough data above the reporting limit to provide for a distribution fit for nitrite.

^c Value provide for O-phosphate

Values from DOE/RL-92-24, Rev. 3, *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes*, Table 6-9.a, 90th percentile.

Table 3-3. Step I Analytical Results for Samples Collected Along Pipelines. (14 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
				Date	Time		
<i>Pipeline to 216-Z-1D/11/19/20 Ditches from 231-Z Building</i>							
5.2	6.5	B15JN2	9/25/2002	10:45	C4047	1.0 U	1.0 U
15.2	16.8	B15JN1	9/25/2002	10:33	C4047	1.0 U	1.0 U
24.2	25.4	B15JN0	9/25/2002	10:15	C4047	1.0 U	1.49
5.2	6.8	B15JN5	9/25/2002	11:53	C4048	1.0 U	1.0 U
5.2	6.8	B15JN6 Duplicate	9/25/2002	11:53	C4048	1.0 U	1.0 U
15.2	16	B15JN4	9/25/2002	11:36	C4048	1.0 U	1.0 U
24.2	25.4	B15JN3	9/25/2002	11:20	C4048	1.0 U	1.0 U
5.2	6.7	B15JR7	9/26/2002	14:47	C4055	1.0 U	1.0 U
15.2	16.5	B15JR6	9/26/2002	14:31	C4055	1.0 U	1.0 U
24.2	25.4	B15JR5	9/26/2002	14:15	C4055	1.0 U	1.0 U
24.2	25.4	B15JR8 Duplicate	9/26/2002	14:15	C4055	1.0 U	1.0 U
7.7	9.1	B156R7	8/29/2002	8:55	C4035	1.0 U	1.0 U
15.2	16.4	B156R6	8/29/2002	8:39	C4035	1.0 U	1.24
24.2	25.1	B156R5	8/29/2002	7:15	C4035	1.0 U	1.54
8.2	9.5	B156R3	8/28/2002	15:00	C4034	1.0 U	2.47
15.2	16.8	B156R2	8/28/2002	14:46	C4034	1.0 U	3.56
24.2	25.3	B156R1	8/28/2002	14:22	C4034	1.0 U	4.22
24.2	25.3	B156R4 Duplicate	8/28/2002	14:22	C4034	1.0 U	4.43
6.2	7.7	B156R0	8/28/2002	13:39	C4033	1.0 U	1.14
15.2	16.8	B156P9	8/28/2002	13:19	C4033	1.0 U	2.23

Table 3-3. Step I Analytical Results for Samples Collected Along Pipelines. (14 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
			Date	Time			
24.2	24.9	B156P8	8/28/2002	12:56	C4033	1.0 U	3.51
6.2	7.5	B156P7	8/28/2002	11:28	C4032	1.0 U	2.58
15.2	16.5	B156P6	8/28/2002	10:43	C4032	1.0 U	2.27
24.2	25.5	B156P5	8/28/2002	10:02	C4032	1.0 U	2.15
5.2	6.4	B156P4	8/28/2002	10:02	C4031	1.0 U	1.04
15.2	15.5	B156P3	8/28/2002	9:43	C4031	1.0 U	1.13
18.7	19.8	B156P2	8/28/2002	9:29	C4031	1.0 U	1.34
5.2	6.5	B156P1	8/28/2002	8:55	C4030	1.0 U	1.0 U
15.2	16.5	B156P0	8/28/2002	8:38	C4030	1.0 U	1.0 U
24.2	25.4	B156N9	8/28/2002	8:20	C4030	1.0 U	1.68
5.2	6.7	B156N8	8/28/2002	7:45	C4029	1.0 U	1.03
15.2	15.5	B156N7	8/28/2002	7:26	C4029	1.0 U	1.36
24.2	25.4	B156N6	8/28/2002	7:03	C4029	1.0 U	1.51
5.2	6.5	B154X8	8/27/2002	14:48	C4028	1.0 U	1.47
15.2	15.5	B154X7	8/27/2002	14:24	C4028	1.0 U	1.51
24.2	24.9	B154X6	8/27/2002	13:57	C4028	1.0 U	1.80
5.2	6.8	B154X5	8/27/2002	13:27	C4027	1.0 U	1.0 U
15.2	16.5	B154X4	8/27/2002	13:09	C4027	1.0 U	1.50
24.2	25.2	B154X3	8/27/2002	12:47	C4027	1.0 U	1.79
5.2	6.9	B154X2	8/27/2002	11:39	C4026	1.0 U	1.0 U
15.2	16.5	B154X1	8/27/2002	10:53	C4026	1.0 U	1.40
24.2	25.4	B154X0	8/27/2002	10:33	C4026	1.0 U	1.80
5.2	6.5	B154W9	8/27/2002	9:52	C4025	1.0 U	1.55

Table 3-3. Step I Analytical Results for Samples Collected Along Pipelines. (14 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
				Date	Time		
15.2	16.8	B154W8	8/27/2002	9:24	C4025	1.0 U	1.29
24.2	25.4	B154W7	8/27/2002	8:56	C4025	1.0 U	2.01
5.2	6.5	B154W2	8/26/2002	14:39	C4024	1.0 U	2.13
15.2	15.5	B154W1	8/26/2002	14:15	C4024	1.0 U	2.38
24.2	25.4	B154W0	8/26/2002	13:53	C4024	1.0 U	3.81
24.2	25.4	B154W4 Duplicate	8/26/2002	13:53	C4024	1.0 U	3.97
5.2	6.3	B154V9	8/26/2002	13:13	C4023	1.0 U	1.87
15.2	16.8	B154V8	8/26/2002	12:50	C4023	1.0 U	1.87
24.1	25.4	B154V7	8/26/2002	12:24	C4023	1.0 U	2.11
5.1	6.7	B154N4	8/19/2002	12:10	C4010	1.0 U	1.0 U
15.2	16.9	B154N3	8/19/2002	11:49	C4010	1.16	1.26
24.2	25.4	B154N2	8/19/2002	11:23	C4010	1.11	1.49
5.2	6.9	B154N7	8/19/2002	14:03	C4009	1.0 U	2.22
15.2	16.5	B154N6	8/19/2002	13:46	C4009	1.25	3.77
24.2	25.4	B154N5	8/19/2002	13:19	C4009	1.31	3.81
5.2	6.5	B154P0	8/19/2002	15:17	C4008	1.0 U	1.43
15.2	16.7	B154N9	8/19/2002	14:58	C4008	1.63	2.34
24.2	25.4	B154N8	8/19/2002	14:35	C4008	1.72	2.03
24.2	25.4	B154P1 Duplicate	8/19/2002	14:35	C4008	1.71	2.13
5.2	6.4	B154M2	8/15/2002	12:15	C4007	1.0 U	2.26
15.2	16.5	B154M1	8/15/2002	11:52	C4007	1.68	2.58
24.2	25.4	B154M0	8/15/2002	11:25	C4007	1.80	2.34

Table 3-3. Step I Analytical Results for Samples Collected Along Pipelines. (14 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
				Date	Time		
24.2	25.4	B154P9 Duplicate	8/15/2002	11:25	C4007	1.76	2.29
5.2	6.6	B154L9	8/15/2002	10:30	C4006	1.0 U	2.89
15.2	16.3	B154L8	8/15/2002	10:12	C4006	1.53	3.17
24.2	25.4	B154L7	8/15/2002	9:55	C4006	1.87	3.27
5.2	6.8	B154L6	8/15/2002	9:21	C4005	1.0 U	2.29
15.2	16.8	B154L5	8/15/2002	8:59	C4005	1.0 U	2.11
24.2	25.4	B154L4	8/15/2002	8:37	C4005	1.0 U	2.79
5.2	5.8	B154L3	8/15/2002	7:56	C4004	1.0 U	1.0 U
15.2	16.5	B154L2	8/15/2002	7:38	C4004	1.0 U	1.13
24.2	25.4	B154L1	8/15/2002	7:12	C4004	1.0 U	1.31
5.2	6.8	B154W6	8/27/2002	7:53	C4003	1.0 U	2.64
15.2	16.7	B154W5	8/27/2002	7:30	C4003	1.0 U	1.64
24.2	25.4	B154W3	8/27/2002	7:07	C4003	1.0 U	1.59
5.2	6.6	B154M8	8/19/2002	9:07	C4002	1.0 U	7.75
15.2	16.8	B154M7	8/19/2002	8:50	C4002	1.0 U	13.6
24.2	25.4	B154M6	8/19/2002	8:29	C4002	1.10	8.09
5.2	6.3	B154M5	8/19/2002	7:54	C4001	1.0 U	2.92
15.2	16.8	B154M4	8/19/2002	7:37	C4001	1.0 U	3.16
24.2	25.3	B154M3	8/19/2002	7:17	C4001	1.0 U	11.4
5.2	6.4	B154N1	8/19/2002	10:24	C4000	1.0 U	1.0 U
15.2	16.8	B154N0	8/19/2002	10:05	C4000	1.0 U	4.36
24.2	25.4	B154M9	8/19/2002	9:42	C4000	1.0 U	4.19
5.2	6.5	B154L0	8/14/2002	15:20	C3999	1.0 U	2.63

Table 3-3. Step I Analytical Results for Samples Collected Along Pipelines. (14 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
				Date	Time		
5.2	6.5	B154P8 Duplicate	8/14/2002	15:20	C3999	1.0 U	2.77
15.2	16.7	B154K9	8/14/2002	15:01	C3999	1.0 U	3.08
24.2	24.8	B154K8	8/14/2002	14:33	C3999	1.0 U	4.51
10	11.6	B15499	8/8/2002	8:15	C3978	1.0 U	1.0 U
15.2	16.2	B15498	8/8/2002	7:53	C3978	1.0 U	1.43
24	25.5	B15497	8/8/2002	7:24	C3978	1.0 U	2.13
5.2	5.8	B154K7	8/14/2002	13:10	C3998	1.0 U	3.64
5	5.5	B154J2	8/13/2002	14:44	C3997	1.0 U	2.41
5	5.5	B154P7 Duplicate	8/13/2002	14:44	C3997	1.0 U	2.29
15.2	16.9	B154J1	8/13/2002	14:23	C3997	1.0 U	3.08
24.2	25.4	B154J0	8/13/2002	14:01	C3997	1.0 U	2.84
5.2	6.8	B154K6	8/14/2002	12:02	C3996	1.0 U	1.27
15.2	16.8	B154K5	8/14/2002	11:42	C3996	1.0 U	2.36
24.2	24.9	B154K4	8/14/2002	11:20	C3996	1.0 U	3.00
5.2	6.9	B154H9	8/13/2002	13:03	C3995	1.0 U	2.14
15.2	16.8	B154H8	8/13/2002	12:44	C3995	1.0 U	3.29
24.2	25.5	B154H7	8/13/2002	12:17	C3995	1.0 U	3.12
5.2	8	B154K3	8/14/2002	10:45	C3994	1.0 U	1.76
15.2	16.6	B154K2	8/14/2002	10:30	C3994	1.0 U	2.27
24.2	25.4	B154K1	8/14/2002	10:01	C3994	1.0 U	3.34
5.2	7	B154K0	8/14/2002	9:23	C3993	1.0 U	3.49
15.2	16.8	B154J7	8/14/2002	9:04	C3993	1.0 U	4.56

Table 3-3. Step I Analytical Results for Samples Collected Along Pipelines. (14 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
				Date	Time		
24.2	25.4	B154J6	8/14/2002	8:39	C3993	1.0 U	7.22
5	6	B154H6	8/13/2002	11:14	C3992	1.0 U	3.50
15.2	16.5	B154H5	8/13/2002	10:49	C3992	1.0 U	4.57
24.2	25.4	B154H4	8/13/2002	10:22	C3992	1.49	7.30
5.2	6.1	B154J5	8/14/2002	7:59	C3991	1.0 U	2.24
15.2	16.6	B154J4	8/14/2002	7:41	C3991	1.0 U	3.30
24.2	25.4	B154J3	8/14/2002	7:10	C3991	1.0 U	3.76
5.2	6.5	B154H3	8/13/2002	8:45	C3990	1.0 U	1.73
15.1	16.5	B154H2	8/13/2002	8:23	C3990	1.0 U	1.77
24.2	25.4	B154H0	8/13/2002	7:50	C3990	1.0 U	1.74
24.2	25.4	B154H1	8/13/2002	7:55	C3990	1.0 U	2.32
<i>Pipeline to 216-Z-1D/11/19/20 Ditches from 234-5Z Building</i>							
5	6.2	B154B3	8/8/2002	10:41	C3979	1.0 U	1.43
15	16.9	B154B2	8/8/2002	10:20	C3979	1.0 U	1.11
24	25.4	B154B1	8/8/2002	9:47	C3979	1.22	1.31
5	6.5	B154B6	8/8/2002	12:22	C3980	1.0 U	1.27
15	16.8	B154B5	8/8/2002	11:57	C3980	1.0 U	1.14
24	25.4	B154B4	8/8/2002	11:32	C3980	1.29	1.17
8	9.4	B154B9	8/8/2002	14:32	C3981	1.0 U	1.13
15	16.8	B154B8	8/8/2002	14:15	C3981	1.0 U	1.20
24	25.4	B154B7	8/8/2002	13:47	C3981	1.02	1.18
8	9.2	B154C2	8/8/2002	15:49	C3982	1.0 U	1.0 U
15	16	B154C1	8/8/2002	15:35	C3982	1.0 U	1.0 U

Table 3-3. Step I Analytical Results for Samples Collected Along Pipelines. (14 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
			Date	Time			
24.1	25.4	B154C0	8/8/2002	15:16	C3982	1.08	1.0 U
24.1	25.4	B154P5 Duplicate	8/8/2002	15:16	C3982	1.06	1.0 U
8	9.4	B154C5	8/9/2002	7:36	C3983	1.0 U	1.0 U
15.2	16.8	B154C4	8/9/2002	7:18	C3983	1.0 U	1.0 U
23.3	24.5	B154C3	8/9/2002	7:02	C3983	1.0 U	1.0 U
8.2	9.1	B154C8	8/9/2002	9:04	C3984	1.0 U	1.0 U
15.2	16.8	B154C7	8/9/2002	8:43	C3984	1.0 U	1.11
24.2	25.3	B154C6	8/9/2002	8:16	C3984	1.0 U	1.03
8.2	9.2	B154D1	8/9/2002	10:20	C3985	1.0 U	1.0 U
15.2	16.7	B154D0	8/9/2002	10:03	C3985	1.0 U	1.28
24.2	25.4	B154C9	8/9/2002	9:46	C3985	1.58	1.39
8.2	9.6	B154D4	8/9/2002	11:40	C3986	1.0 U	1.71
15.2	16.5	B154D3	8/9/2002	11:24	C3986	1.0 U	1.88
24.2	25.4	B154D2	8/9/2002	11:06	C3986	1.56	2.01
8.2	9.4	B154F8	8/12/2002	14:32	C3987	1.0 U	2.02
8.2	9.4	B154F9	8/12/2002	14:37	C3987	1.0 U	2.12
8.2	9.4	B154P6 Duplicate	8/12/2002	14:37	C3987	1.0 U	2.15
15.2	16.9	B154F6	8/12/2002	14:09	C3987	1.0 U	2.03
15.2	16.9	B154F7	8/12/2002	14:14	C3987	1.0 U	2.76
23.2	24.7	B154F4	8/12/2002	13:40	C3987	1.0 U	1.65
23.2	24.7	B154F5	8/12/2002	13:45	C3987	1.0 U	2.08
8.2	9.5	B154F2	8/12/2002	12:06	C3988	1.0 U	2.24

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Table 3-3. Step I Analytical Results for Samples Collected Along Pipelines. (14 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
				Date	Time		
8.2	9.5	B154F3	8/12/2002	12:11	C3988	1.0 U	2.69
15.2	16.8	B154F0	8/12/2002	11:42	C3988	1.0 U	2.67
15.2	16.8	B154F1	8/12/2002	11:47	C3988	1.0 U	3.81
22.5	23.9	B154D8	8/12/2002	11:15	C3988	1.0 U	3.39
22.5	23.9	B154D9	8/12/2002	11:20	C3988	1.0 U	5.06
7	8.2	B154D7	8/12/2002	10:24	C3989	1.0 U	2.15
14.4	16.2	B154D6	8/12/2002	9:15	C3989	1.0 U	3.20
24	25.2	B154D5	8/12/2002	7:23	C3989	1.0 U	3.58
<i>Pipeline to 216-Z-7 Crib</i>							
5.2	6.5	B15JN2	9/25/2002	10:45	C4047	1.0 U	1.0 U
15.2	16.8	B15JN1	9/25/2002	10:33	C4047	1.0 U	1.0 U
24.2	25.4	B15JN0	9/25/2002	10:15	C4047	1.0 U	1.49
5.2	6.8	B15JN5	9/25/2002	11:53	C4048	1.0 U	1.0 U
5.2	6.8	B15JN6 Duplicate	9/25/2002	11:53	C4048	1.0 U	1.0 U
15.2	16	B15JN4	9/25/2002	11:36	C4048	1.0 U	1.0 U
24.2	25.4	B15JN3	9/25/2002	11:20	C4048	1.0 U	1.0 U
5.2	6.7	B15JR7	9/26/2002	14:47	C4055	1.0 U	1.0 U
15.2	16.5	B15JR6	9/26/2002	14:31	C4055	1.0 U	1.0 U
24.2	25.4	B15JR5	9/26/2002	14:15	C4055	1.0 U	1.0 U
24.2	25.4	B15JR8 Duplicate	9/26/2002	14:15	C4055	1.0 U	1.0 U
8.2	9.5	B15JR4	9/26/2002	13:37	C4054	1.0 U	1.0 U
15.2	16.4	B15JR3	9/26/2002	13:26	C4054	1.0 U	1.31

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Table 3-3. Step I Analytical Results for Samples Collected Along Pipelines. (14 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
				Date	Time		
24.2	24.7	B15JR2	9/26/2002	13:10	C4054	1.0 U	1.39
8.2	9.7	B15JR1	9/26/2002	12:09	C4053	1.0 U	1.42
15.2	15.7	B15JR0	9/26/2002	11:57	C4053	1.0 U	1.27
24.2	25.4	B15JP9	9/26/2002	11:40	C4053	1.0 U	1.52
7	7.4	B15JN9	9/26/2002	7:42	C4049	1.0 U	1.0 U
14.4	14.8	B15JN8	9/26/2002	7:28	C4049	1.0 U	1.0 U
24.2	25	B15JN7	9/26/2002	7:10	C4049	1.0 U	1.0 U
8.2	9.2	B15JP2	9/26/2002	8:47	C4050	1.0 U	1.0 U
15.2	15.8	B15JP1	9/26/2002	8:36	C4050	1.0 U	1.0 U
24.2	25.4	B15JP0	9/26/2002	8:23	C4050	1.0 U	1.0 U
8.2	9.9	B15JP5	9/26/2002	9:50	C4051	1.0 U	1.0 U
15.2	16.5	B15JP4	9/26/2002	9:39	C4051	1.0 U	1.09
24.2	25.4	B15JP3	9/26/2002	9:23	C4051	1.0 U	1.0 U
8.2	9.4	B15JP8	9/26/2002	10:56	C4052	1.0 U	1.0 U
15.2	15.5	B15JP7	9/26/2002	10:46	C4052	1.0 U	1.0 U
24.2	25.4	B15JP6	9/26/2002	10:28	C4052	1.0 U	1.22
8	9	B15CM0-a	9/13/2002	14:10	C3861	1.0 U	1.65
14	15	B15CM1-a	9/13/2002	14:21	C3861	1.0 U	1.95
24	25	B15CM2-a	9/16/2002	6:37	C3861	1.0 U	1.06
43	44	B15CM3-a	9/16/2002	7:04	C3861	1.0 U	1.01
Pipeline to 216-Z-9 Trench							
5	6.5	B15484	8/7/2002	8:48	C3973	1.0 U	1.0 U
15.2	16.9	B15483	8/7/2002	8:18	C3973	1.0 U	1.0 U

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Table 3-3. Step I Analytical Results for Samples Collected Along Pipelines. (14 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
			Date	Time			
24	25.2	B15482	8/7/2002	7:45	C3973	1.0 U	1.0 U
14	15	B15BV0	9/10/2002	7:44	C3849	1.0 U	1.0 U
20	21	B15BV1	9/10/2002	7:54	C3849	1.0 U	9.80
20	21	B15BV2	9/10/2002	7:58	C3849	1.0 U	8.72
20	21	B15BV3	9/10/2002	9:00	C3849	1.0 U	3.66
20	21	B15BV4	9/10/2002	9:05	C3849	1.0 U	1.0 U
24	25	B15BV5	9/10/2002	9:17	C3849	1.0 U	1.0 U
38	39	B15VB6	9/10/2002	9:33	C3849	1.0 U	1.0 U
48	49	B15BV7	9/10/2002	11:53	C3849	1.0 U	1.0 U
5	6.4	B15487	8/7/2002	10:10	C3974	1.0 U	1.0 U
15	16.5	B15486	8/7/2002	9:50	C3974	1.0 U	1.0 U
24.2	25.5	B15485	8/7/2002	9:28	C3974	1.0 U	1.0 U
5	6	B15490	8/7/2002	11:36	C3975	1.0 U	1.29
9.2	10.2	B154B0	8/8/2002	8:46	C3975	1.0 U	1.0 U
15	15.5	B15489	8/7/2002	11:27	C3975	1.0 U	1.0 U
24.2	25.5	B15488	8/7/2002	10:47	C3975	1.0 U	1.02
10	11.5	B15493	8/7/2002	13:34	C3976	1.0 U	1.0 U
15	16.2	B15492	8/7/2002	13:23	C3976	1.0 U	1.0 U
24	25.5	B15491	8/7/2002	13:03	C3976	1.0 U	1.0 U
10	11.5	B15496	8/7/2002	14:50	C3977	1.0 U	1.0 U
10	11.5	B154P4 Duplicate	8/7/2002	14:50	C3977	1.0 U	1.0 U
15	16.2	B15495	8/7/2002	14:37	C3977	1.0 U	1.0 U
24	25.5	B15494	8/7/2002	14:16	C3977	1.0 U	1.0 U

Table 3-3. Step I Analytical Results for Samples Collected Along Pipelines. (14 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
				Date	Time		
10	11.6	B15499	8/8/2002	8:15	C3978	1.0 U	1.0 U
15.2	16.2	B15498	8/8/2002	7:53	C3978	1.0 U	1.43
24	25.5	B15497	8/8/2002	7:24	C3978	1.0 U	2.13
14	15	B15BV8	9/10/2002	13:06	C3850	1.0 U	1.62
24	25	B15BV9	9/10/2002	13:24	C3850	1.0 U	1.86
32	33	B15BW0	9/10/2002	13:37	C3850	1.0 U	1.39
39	40	B15BW1	9/10/2002	13:52	C3850	1.0 U	16.8
43.52	44.52	B15BW2	9/10/2002	14:14	C3850	1.0 U	1.22
15	N/A	B15BX4	9/11/2002	13:27	C3854	1.0 U	1.59
25	N/A	B15BX5	9/11/2002	13:40	C3854	1.0 U	2.83
33	N/A	B15BX6	9/11/2002	13:49	C3854	1.0 U	2.78
40	N/A	B15BX7	9/11/2002	14:03	C3854	1.0 U	2.74
40.89	N/A	B15BX8	9/11/2002	14:14	C3854	1.0 U	2.04
Pipeline to 216-Z-12 Crib							
15	N/A	B156V2	9/5/2002	10:26	C3842	1.0 U	2.04
25	N/A	B156V3	9/5/2002	10:46	C3842	1.0 U	2.23
49.4	N/A	B156V4	9/5/2002	11:14	C3842	8.04	1.88
49.4	N/A	B156W0 Duplicate	9/5/2002	11:14	C3842	7.95	1.78
47.0	48.0	B15BR6	9/9/2002	7:18	C3846	1.0 U	3.51
10.2	11	B15JJ6-a	9/24/2002	7:53	C4038	1.0 U	1.0 U
15.2	16.7	B15JJ5-a	9/24/2002	7:41	C4038	1.0 U	1.0 U
24.2	25.4	B15JJ4-a	9/24/2002	7:18	C4038	1.0 U	1.0 U
10.2	11.2	B15JJ9-a	9/24/2002	8:57	C4039	1.0 U	1.03

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Table 3-3. Step I Analytical Results for Samples Collected Along Pipelines. (14 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
			Date	Time			
15.2	15.8	B15JJ8-a	9/24/2002	8:45	C4039	1.0 U	1.11
24.2	25.4	B15JJ7-a	9/24/2002	8:24	C4039	1.0 U	2.35
10.2	11.2	B15JK2-a	9/24/2002	9:59	C4040	1.0 U	2.52
15.2	15.5	B15JK1-a	9/24/2002	9:49	C4040	1.0 U	2.87
24.2	25.4	B15JK0-a	9/24/2002	9:33	C4040	1.0 U	3.35
10.2	10.5	B15JK5-a	9/24/2002	11:05	C4041	1.0 U	1.0 U
14.2	14.6	B15JK4-a	9/24/2002	10:56	C4041	1.0 U	1.0 U
24.2	25.4	B15JK3-a	9/24/2002	10:38	C4041	1.0 U	1.67
10.2	11	B15JK8-a	9/24/2002	12:15	C4042	1.0 U	1.03
15.2	15.5	B15JK7-a	9/24/2002	12:03	C4042	1.0 U	1.82
24.2	25.4	B15JK6-a	9/24/2002	11:40	C4042	1.0 U	1.72
10.2	11.1	B15JL1-a	9/24/2002	13:44	C4043	1.0 U	1.0 U
15.2	15.5	B15JL0-a	9/24/2002	13:33	C4043	1.0 U	1.73
24.2	25.5	B15JK9-a	9/24/2002	13:18	C4043	1.0 U	2.06
10.2	11.5	B15JL4-a	9/24/2002	15:15	C4044	1.0 U	1.0 U
15.2	16	B15JL3-a	9/24/2002	15:05	C4044	1.0 U	1.0 U
22.2	23.2	B15JL2-a	9/24/2002	14:46	C4044	1.0 U	1.36
22.2	23.2	B15JL5-a Duplicate	9/24/2002	14:46	C4044	1.0 U	1.27
10.2	11.3	B15JL8-a	9/25/2002	7:51	C4045	1.0 U	1.0 U
15.2	16.5	B15JL7-a	9/25/2002	7:35	C4045	1.0 U	1.0 U
24.2	25.4	B15JL6-a	9/25/2002	7:16	C4045	1.0 U	1.0 U
10.2	11	B15JM9	9/25/2002	8:56	C4046	1.0 U	1.0 U
15.2	16.1	B15JM8	9/25/2002	8:45	C4046	1.05	1.0 U

Table 3-3. Step I Analytical Results for Samples Collected Along Pipelines. (14 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
				Date	Time		
24.2	25.4	B15JL9-a	9/25/2002	8:29	C4046	1.32	1.0 U
10.2	11	B156T3	8/29/2002	11:59	C4037	1.0 U	2.28
15.2	16.2	B156T2	8/29/2002	11:43	C4037	1.0 U	2.08
24.2	25.4	B156T1	8/29/2002	11:23	C4037	3.63	3.09
10.2	11	B156T0	8/29/2002	10:39	C4036	1.0 U	1.55
15.2	16.7	B156R9	8/29/2002	10:24	C4036	1.0 U	1.44
24.2	25.4	B156R8	8/29/2002	9:58	C4036	1.0 U	2.25
Pipeline to 216-Z-18 Crib							
15	N/A	B156T4	9/4/2002	7:49	C3840	1.0 U	1.99
25	N/A	B156T5	9/4/2002	8:13	C3840	1.0 U	2.25
50	N/A	B156T6	9/4/2002	8:44	C3840	1.0 U	2.76
60.1	N/A	B156T7	9/4/2002	9:25	C3840	1.0 U	9.37
5	5.5	B15460	8/5/2002	10:05	C3965	1.0 U	1.17
13	13.5	B15459	8/5/2002	9:20	C3965	1.0 U	1.49
24.2	25	B15458	8/5/2002	8:32	C3965	1.0 U	1.77
5	6.2	B15463	8/5/2002	12:10	C3966	1.0 U	1.60
14	15.2	B15462	8/5/2002	11:40	C3966	1.0 U	1.77
24.2	25.2	B15461	8/5/2002	11:15	C3966	1.0 U	1.72
5	7.5	B15466	8/5/2002	14:38	C3967	1.0 U	1.17
5	7.5	B154P2 Duplicate	8/5/2002	14:38	C3967	1.0 U	1.13
15.5	17.5	B15465	8/5/2002	14:03	C3967	1.0 U	1.36
24.5	25	B15464	8/5/2002	13:18	C3967	1.0 U	2.10
5	6.2	B15469	8/6/2002	8:05	C3968	1.0 U	1.0 U

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Table 3-3. Step I Analytical Results for Samples Collected Along Pipelines. (14 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
			Date	Time			
14.9	15.3	B15468	8/6/2002	7:35	C3968	1.0 U	1.0 U
24.2	25	B15467	8/6/2002	7:10	C3968	1.0 U	1.0 U
3.85	4.9	B15472	8/6/2002	10:05	C3969	1.0 U	1.0 U
15	15.8	B15471	8/6/2002	9:44	C3969	1.0 U	1.06
24.2	25.2	B15470	8/6/2002	9:11	C3969	1.0 U	1.33
4.9	6.5	B15475	8/6/2002	11:47	C3970	1.0 U	2.07
15	15.5	B15474	8/6/2002	11:30	C3970	1.0 U	1.68
24.2	25.2	B15473	8/6/2002	11:05	C3970	1.0 U	2.10
4.9	6.4	B15478	8/6/2002	13:58	C3971	1.0 U	1.11
15.1	15.8	B15477	8/6/2002	13:28	C3971	1.0 U	1.0 U
24.2	25.4	B15476	8/6/2002	13:08	C3971	4.03	1.98
5	6.2	B15481	8/6/2002	15:05	C3972	1.0 U	1.0 U
15	16.4	B15480	8/6/2002	14:51	C3972	1.0 U	1.0 U
24	25.4	B15479	8/6/2002	14:35	C3972	4.00	1.79
24	25.4	B154P3 Duplicate	8/6/2002	14:35	C3972	3.53	1.77

bgs = below ground surface
 CAS = Chemical Abstracts Service registry number (or HEIS identification number).
 HEIS = Hanford Environmental Information System database.
 N/A = not applicable
 RL = reporting limit.
 SAF = Sampling Authorization Form.
 U = analyzed for but not detected. Value reported is the reporting limit.
 Table is modified from CP-13514 (Table 5).

Table 3-4. Step I Analytical Results for Samples Collected at Liquid-Waste Discharge Sites and Heating, Ventilation, and Air Conditioning Condensate Sites. (6 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
			Date	Time			
216-T-19 Tile Field							
14	15	B15J25	9/16/2002	12:30	C3864	1.0 U	1.99
24	25	B15J26	9/16/2002	12:42	C3864	1.0 U	3.22
35	36	B15J27	9/16/2002	13:07	C3864	1.0 U	4.60
49	50	B15J28	9/16/2002	13:32	C3864	1.0 U	7.36
69	70	B15J29	9/16/2002	14:09	C3864	1.0 U	11.5
14	15	B15CK7-a	9/13/2002	6:47	C3858	1.0 U	1.21
24	25	B15CK8-a	9/13/2002	7:00	C3858	1.0 U	1.02
32	33	B15CK9-a	9/13/2002	7:16	C3858	1.54	5.66
48.9	49.9	B15CL0-a	9/13/2002	7:45	C3858	1.03	9.04
14	15	B15CL1-a	9/13/2002	8:41	C3859	1.0 U	1.0 U
24	25	B15CL2-a	9/13/2002	9:02	C3859	1.0 U	1.27
27.8	28.8	B15CL3-a	9/13/2002	10:40	C3859	1.09	1.47
27.8	28.8	B15CL4-a Duplicate	9/13/2002	10:40	C3859	1.11	1.5
216-Z-1D/11/19/20 Ditches							
12	13	B15BY3	9/12/2002	11:45	C3856	1.0 U	1.46
14	15	B15BY4	9/12/2002	11:56	C3856	1.0 U	2.09
24	25	B15BY5	9/12/2002	12:35	C3856	1.0 U	1.71
29	30	B15CK1-a	9/12/2002	12:53	C3856	1.0 U	1.93
39	40	B15CK2-a	9/12/2002	13:19	C3856	1.0 U	1.26
39	40	B15CK3-a Duplicate	9/12/2002	13:19	C3856	1.0 U	1.27
9	10	B15BT4	9/9/2002	14:53	C3848	1.0 U	1.33

Table 3-4. Step I Analytical Results for Samples Collected at Liquid-Waste Discharge Sites and Heating, Ventilation, and Air Conditioning Condensate Sites. (6 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
			Date	Time			
14	15	B15BT5	9/9/2002	15:03	C3848	1.0 U	1.54
24	25	B15BT6	9/9/2002	15:14	C3848	2.03	1.01
38	39	B15BT7	9/9/2002	15:27	C3848	2.94	1.01
38	39	B15BT9 Duplicate	9/9/2002	15:27	C3848	2.88	1.15
44.2	45.2	B15BT8	9/9/2002	15:38	C3848	1.64	1.17
216-Z-1A Tile Field							
14.1	15	B156W1	9/6/2002	9:04	C3844	1.0 U	1.0 U
24	25	B156W2	9/6/2002	9:14	C3844	1.0 U	1.16
41	41.9	B156W3	9/6/2002	9:48	C3844	4.01	1.0 U
14	15	B15BR7	9/9/2002	8:34	C3847	1.0 U	1.06
24	25	B15BR8	9/9/2002	8:45	C3847	1.0 U	1.75
30	31	B15BR9	9/9/2002	9:00	C3847	1.0 U	1.92
30	31	B15BT0	9/9/2002	12:29	C3847	1.0 U	1.75
40	41.6	B15BT1	9/9/2002	12:45	C3847	1.10	1.53
49	50	B15BT2	9/9/2002	13:00	C3847	1.0 U	1.49
61.2	62.2	B15BT3	9/9/2002	13:36	C3847	1.0 U	1.98
14	15	B156W4	9/6/2002	11:07	C3845	1.0 U	1.0 U
19	20	B156W5	9/6/2002	11:20	C3845	1.0 U	1.0 U
24	25	B15WC9	9/6/2002	11:41	C3845	4.5	57.8
49	50	B15WD0	9/6/2002	12:14	C3845	7.2	114.00
49	50	B15WD1	9/6/2002	13:58	C3845	1.0 U	1.44
47.5	48.8	B15WD2	9/6/2002	15:36	C3845	1.0 U	3.03
216-Z-7 Crib							
8	9	B15CM0-a	9/13/2002	14:10	C3861	1.0 U	1.65

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Table 3-4. Step I Analytical Results for Samples Collected at Liquid-Waste Discharge Sites and Heating, Ventilation, and Air Conditioning Condensate Sites. (6 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
			Date	Time			
14	15	B15CM1-a	9/13/2002	14:21	C3861	1.0 U	1.95
24	25	B15CM2-a	9/16/2002	6:37	C3861	1.0 U	1.06
43	44	B15CM3-a	9/16/2002	7:04	C3861	1.0 U	1.01
5	6	B15CL5-a	9/13/2002	11:57	C3860	1.0 U	1.63
14	15	B15CL6-a	9/13/2002	12:09	C3860	1.0 U	1.73
24	25	B15CL7-a	9/13/2002	12:20	C3860	1.0 U	1.61
49	50	B15CL8-a	9/13/2002	12:45	C3860	1.0 U	2.04
60	61	B15CL9-a	9/13/2002	13:18	C3860	2.06	1.43
216-Z-8 French Drain							
14	15	B15BV0	9/10/2002	7:44	C3849	1.0 U	1.0 U
20	21	B15BV1	9/10/2002	7:54	C3849	1.0 U	9.80
20	21	B15BV2	9/10/2002	7:58	C3849	1.0 U	8.72
20	21	B15BV3	9/10/2002	9:00	C3849	1.0 U	3.66
20	21	B15BV4	9/10/2002	9:05	C3849	1.0 U	1.0 U
24	25	B15BV5	9/10/2002	9:17	C3849	1.0 U	1.0 U
38	39	B15VB6	9/10/2002	9:33	C3849	1.0 U	1.0 U
48	49	B15BV7	9/10/2002	11:53	C3849	1.0 U	1.0 U
216-Z-9 Trench							
14	15	B15BV8	9/10/2002	13:06	C3850	1.0 U	1.62
24	25	B15BV9	9/10/2002	13:24	C3850	1.0 U	1.86
32	33	B15BW0	9/10/2002	13:37	C3850	1.0 U	1.39
39	40	B15BW1	9/10/2002	13:52	C3850	1.0 U	16.8
43.52	44.52	B15BW2	9/10/2002	14:14	C3850	1.0 U	1.22
15	N/A	B15BX4	9/11/2002	13:27	C3854	1.0 U	1.59
25	N/A	B15BX5	9/11/2002	13:40	C3854	1.0 U	2.83

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Table 3-4. Step I Analytical Results for Samples Collected at Liquid-Waste Discharge Sites and Heating, Ventilation, and Air Conditioning Condensate Sites. (6 Pages)

Sample Interval		SAF P02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
			Date	Time			
33	N/A	B15BX6	9/11/2002	13:49	C3854	1.0 U	2.78
40	N/A	B15BX7	9/11/2002	14:03	C3854	1.0 U	2.74
40.89	N/A	B15BX8	9/11/2002	14:14	C3854	1.0 U	2.04
14	15	B15BW3	9/11/2002	6:40	C3851	1.0 U	1.0 U
24	25	B15BW4	9/11/2002	6:52	C3851	1.0 U	1.0 U
49	50	B15BW5	9/11/2002	7:25	C3851	1.0 U	1.14
216-Z-12 Crib							
15	N/A	B156V2	9/5/2002	10:26	C3842	1.0 U	2.04
25	N/A	B156V3	9/5/2002	10:46	C3842	1.0 U	2.23
49.4	N/A	B156V4	9/5/2002	11:14	C3842	8.04	1.88
49.4	N/A	B156W0 Duplicate	9/5/2002	11:14	C3842	7.95	1.78
47	48	B15BR6	9/9/2002	7:18	C3846	1.0 U	3.51
15	N/A	B156V5	9/5/2002	14:48	C3843	1.0 U	1.35
21	N/A	B156V6	9/5/2002	14:58	C3843	1.0 U	1.91
25	N/A	B156V7	9/5/2002	15:09	C3843	1.0 U	1.50
50	N/A	B156V8	9/5/2002	15:29	C3843	1.0 U	1.64
65	N/A	B156V9	9/5/2002	15:59	C3843	1.0 U	2.00
216-Z-16 Crib							
14	15	B15CM4-a	9/16/2002	8:00	C3862	1.0 U	1.03
19	20	B15CM5-a	9/16/2002	8:13	C3862	1.0 U	1.04
24	25	B15CM6-a	9/16/2002	8:24	C3862	1.0 U	1.21
49	50.2	B15J17	9/16/2002	8:48	C3862	1.0 U	1.35
59	60	B15J18	9/16/2002	9:11	C3862	1.0 U	1.13
14	15	B15J19	9/16/2002	10:03	C3863	1.0 U	1.0 U

Table 3-4. Step I Analytical Results for Samples Collected at Liquid-Waste Discharge Sites and Heating, Ventilation, and Air Conditioning Condensate Sites. (6 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
			Date	Time			
20	21	B15J20	9/16/2002	10:14	C3863	1.0 U	1.02
24	25	B15J21	9/16/2002	10:23	C3863	1.0 U	1.92
49	50	B15J22	9/16/2002	10:49	C3863	1.0 U	1.38
66	67	B15J23	9/16/2002	11:14	C3863	1.0 U	1.42
66	67	B15J24 Duplicate	9/16/2002	11:14	C3863	1.0 U	1.43
216-Z-17 Crib							
12	13	B15BY3	9/12/2002	11:45	C3856	1.0 U	1.46
14	15	B15BY4	9/12/2002	11:56	C3856	1.0 U	2.09
24	25	B15BY5	9/12/2002	12:35	C3856	1.0 U	1.71
29	30	B15CK1-a	9/12/2002	12:53	C3856	1.0 U	1.93
39	40	B15CK2-a	9/12/2002	13:19	C3856	1.0 U	1.26
39	40	B15CK3-a Duplicate	9/12/2002	13:19	C3856	1.0 U	1.27
14	15	B15CK4-a	9/12/2002	14:19	C3857	1.0 U	1.40
24	25	B15CK5-a	9/12/2002	15:14	C3857	1.0 U	2.48
39	40	B15CK6-a	9/12/2002	15:38	C3857	1.0 U	2.10
216-Z-18 Crib							
15	N/A	B156T4	9/4/2002	7:49	C3840	1.0 U	1.99
25	N/A	B156T5	9/4/2002	8:13	C3840	1.0 U	2.25
50	N/A	B156T6	9/4/2002	8:44	C3840	1.0 U	2.76
60.1	N/A	B156T7	9/4/2002	9:25	C3840	1.0 U	9.37
15.1	N/A	B156T8	9/4/2002	12:42	C3841	1.0 U	16.2
15.1	N/A	B156V1 Duplicate	9/4/2002	12:42	C3841	1.0 U	16.4
25	N/A	B156T9	9/4/2002	12:56	C3841	1.0 U	1.75

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Table 3-4. Step I Analytical Results for Samples Collected at Liquid-Waste Discharge Sites and Heating, Ventilation, and Air Conditioning Condensate Sites. (6 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
			Date	Time			
50	N/A	B156V0	9/4/2002	13:26	C3841	1.0 U	1.12
<i>216-Z-21 Pond</i>							
5	6	B15BX9	9/12/2002	6:53	C3855	1.0 U	1.0 U
14	15	B15BY0	9/12/2002	7:07	C3855	1.0 U	1.0 U
24	25	B15BY1	9/12/2002	7:22	C3855	1.0 U	1.0 U
29	30	B15BY2	9/12/2002	7:39	C3855	1.0 U	1.0 U
7	8	B15BW9	9/11/2002	10:44	C3853	1.0 U	1.07
14	15	B15BX0	9/11/2002	10:54	C3853	1.0 U	1.56
24	25	B15BX1	9/11/2002	11:11	C3853	1.0 U	1.55
27.7	28.7	B15BX2	9/11/2002	11:38	C3853	1.0 U	1.30
27.7	28.7	B15BX3 Duplicate	9/11/2002	11:38	C3853	1.0 U	1.32
4	5	B15BW6	9/11/2002	8:35	C3852	1.0 U	1.0 U
14	15	B15BW7	9/11/2002	8:48	C3852	1.0 U	1.27
18.66	19.66	B15BW8	9/11/2002	9:09	C3852	1.0 U	1.17

bgs = below ground surface
CAS = Chemical Abstracts Service registry number (or HEIS identification number).
N/A = not applicable.
RL = reporting limit.
SA = sampling authorization form.
U = analyzed for but not detected. Value reported is the reporting limit.
Table is modified from CP-13514 (Table 6)._____

Table 3-5. Step I Analytical Results for Samples Collected From Vadose Zone in 218-W-4C Burial Ground. (3 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
			Date	Time			
15.2	16.1	B154R1	8/21/2002	9:50	C4011	10.5	2.80
24.4	25.4	B154R0	8/21/2002	9:27	C4011	6.91	2.07
12.4	13.4	B154T3	8/22/2002	14:55	C4012	62.1	12.2
15.2	15.8	B154R3	8/21/2002	11:44	C4012	7.25	2.32
24.4	25.4	B154R2	8/21/2002	11:07	C4012	15.6	4.10
15.2	16.4	B154T6	8/23/2002	8:29	C4017	1.0 U	1.41
24.2	25.4	B154T5	8/23/2002	8:03	C4017	1.0 U	1.72
15.2	16.2	B154R7	8/22/2002	8:37	C4014	1.0 U	1.07
23.2	24.2	B154R6	8/22/2002	8:06	C4014	1.36	1.85
15.2	16.5	B154V0	8/23/2002	11:35	C4019	1.0 U	1.55
24.2	25.4	B154T9	8/23/2002	11:12	C4019	1.0 U	2.57
15.2	16.7	B154V6	8/26/2002	10:42	C4022	1.0 U	1.56
24.2	25.4	B154V5	8/26/2002	10:14	C4022	2.4	2.78
15.2	16.5	B154T8	8/23/2002	9:55	C4018	1.0 U	1.16
24.2	25.4	B154T7	8/23/2002	9:28	C4018	1.0 U	1.50
15.2	16.5	B154V4	8/26/2002	9:15	C4021	1.0 U	1.62
24.2	25.4	B154V3	8/26/2002	8:48	C4021	1.0 U	1.83
15.8	16.8	B154R9	8/22/2002	10:23	C4015	1.0 U	2.09
24.4	25.4	B154R8	8/22/2002	9:53	C4015	1.0 U	2.31
15.2	16.7	B154V2	8/26/2002	7:43	C4020	1.0 U	1.47
24.2	25.4	B154V1	8/26/2002	7:27	C4020	1.0 U	1.52
15.7	16.7	B154R5	8/21/2002	13:58	C4013	1.0 U	1.0 U
24.4	25.4	B154R4	8/21/2002	13:34	C4013	1.0 U	1.08
15.2	16.5	B154T2	8/22/2002	14:10	C4016	12.7	5.77
19.6	23.3	B154T1	8/22/2002	11:53	C4016	14.8	4.48

Table 3-5. Step I Analytical Results for Samples Collected From Vadose Zone in 218-W-4C Burial Ground. (3 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
			Date	Time			
19.6	23.3	B154T4 Duplicate	8/22/2002	11:53	C4016	14.3	4.51
24.2	25.4	B154T0	8/22/2002	11:30	C4016	4.80	3.37
10	N/A	B15J55	9/18/2002	7:30	C3869	9.61	3.12
15	N/A	B15J56	9/18/2002	7:37	C3869	16.0	5.08
20	N/A	B15J57	9/18/2002	7:44	C3869	12.9	4.40
25	N/A	B15J58	9/18/2002	7:50	C3869	14.0	5.63
33	N/A	B15J59	9/18/2002	8:02	C3869	11.3	4.75
10	N/A	B15J37	9/17/2002	8:38	C3866	1.0 U	1.0 U
13	N/A	B15J38	9/17/2002	8:44	C3866	1.0 U	1.0 U
15	N/A	B15J39	9/17/2002	8:48	C3866	1.0 U	1.0 U
20	N/A	B15J40	9/17/2002	8:54	C3866	1.0 U	1.0 U
25	N/A	B15J41	9/17/2002	8:59	C3866	1.0 U	1.0 U
33.5	N/A	B15J42	9/17/2002	9:16	C3866	1.0 U	1.0 U
10	N/A	B15J43	9/17/2002	11:03	C3867	45.8	9.53
10	N/A	B15J49 Duplicate	9/17/2002	11:03	C3867	47.6	9.59
13	N/A	B15J44	9/17/2002	11:12	C3867	7.34	1.71
15	N/A	B15J45	9/17/2002	11:19	C3867	14.9	3.64
20	N/A	B15J46	9/17/2002	11:26	C3867	23.9	5.48
25	N/A	B15J47	9/17/2002	11:32	C3867	35.8	8.30
35	N/A	B15J48	9/17/2002	11:41	C3867	24.9	6.77
7	N/A	B15J50	9/17/2002	13:09	C3868	5.23	3.13
15	N/A	B15J51	9/17/2002	13:14	C3868	3.95	3.98
20	N/A	B15J52	9/17/2002	13:24	C3868	4.88	3.88
25	N/A	B15J53	9/17/2002	13:30	C3868	7.26	4.24
32.1	N/A	B15J54	9/17/2002	13:42	C3868	8.73	4.27

Table 3-5. Step I Analytical Results for Samples Collected From Vadose Zone in 218-W-4C Burial Ground. (3 Pages)

Sample Interval		SAF F02-011			Borehole Number	Carbon Tetrachloride, CAS 56-23-5 (ppmv) RL = 1	Chloroform, CAS 67-66-3 (ppmv) RL = 1
Top (ft bgs)	Bottom (ft bgs)	HEIS Number	Sample				
			Date	Time			
4	5	B15J30	9/16/2002	15:07	C3865	1.0 U	1.0 U
14	15	B15J31	9/16/2002	15:18	C3865	1.0 U	1.13
19	20	B15J32	9/16/2002	15:26	C3865	1.0 U	1.28
24	25	B15J33	9/16/2002	15:35	C3865	3.49	1.90
36	37	B15J34	9/16/2002	15:49	C3865	6.20	2.13
36	37	B15J36 Duplicate	9/16/2002	15:49	C3865	6.19	2.10
49	50	B15J35	9/16/2002	16:12	C3865	1.95	1.73
11	N/A	B15J60	9/18/2002	9:24	C3870	3.58	2.11
15	N/A	B15J61	9/18/2002	9:44	C3870	5.13	2.99
20	N/A	B15J62	9/18/2002	9:58	C3870	5.15	3.11
25	N/A	B15J63	9/18/2002	10:11	C3870	6.37	3.67
33	N/A	B15J64	9/18/2002	10:28	C3870	6.15	3.93
33	N/A	B15J65 Duplicate	9/18/2002	10:28	C3870	6.12	3.71

bgs = below ground surface.

CAS = Chemical Abstracts Service registry number (or HEIS identification number).

HEIS = Hanford Environmental Information System database.

N/A = not applicable.

RL = reporting limit.

SAF = Sampling Authorization Form.

U = analyzed for but not detected. Value reported is the reporting limit.

Table is modified from CP-13514 (Table 9).

Table 3-6. Analytical Results for Eight Temporary Soil Vapor Probes Installed During the Step I Investigation. (4 Pages)

Location	Depth (ft bgs)	Date	Carbon Tetrachloride (ppmv)	Chloroform (ppmv)
216-Z-1A Tile Field, east side C3872	62.0 - 62.5	10/30/02	2.38	< 1.0
		11/27/02	< 1.0	< 1.0
		12/31/02	1.39	< 1.0
		03/04/03	3.10	< 1.0
		07/21/03	< 1.0	< 1.0
		09/09/03	< 1.0	< 1.0
		10/31/03	1.30	< 1.0
		12/04/03	1.89	< 1.0
		01/20/04	8.33	2.57
		02/19/04	8.04	1.04
		03/30/04	3.01	< 1.0
		06/03/04	3.57	2.33
		06/24/04	1.60	2.21
		07/23/04	< 1.0	1.12
		08/26/04	1.01	1.56
		10/07/04	1.15	< 1.0
11/15/04	1.07	< 1.0		
216-Z-1A Tile Field, south side C3871	57.0 - 57.6	10/30/02	< 1.0	< 1.0
		11/27/02	< 1.0	< 1.0
		12/31/02	< 1.0	< 1.0
		03/04/03	< 1.0	< 1.0
		07/21/03	< 1.0	2.46
		09/09/03	< 1.0	< 1.0
		10/31/03	< 1.0	< 1.0
		12/04/03	< 1.0	< 1.0
		01/20/04	30.5	1.94
		02/19/04	1.33	1.33
		03/30/04	< 1.0	< 1.0
		06/03/04	< 1.0	2.17
		06/24/04	< 1.0	2.69
		07/23/04	2.02	< 1.0
		08/26/04	< 1.0	1.45
		10/07/04	< 1.0	< 1.0
11/15/04	< 1.0	< 1.0		

Table 3-6. Analytical Results for Eight Temporary Soil Vapor Probes Installed During the Step I Investigation. (4 Pages)

Location	Depth (ft bgs)	Date	Carbon Tetrachloride (ppmv)	Chloroform (ppmv)
216-Z Ditches C3873	44.0 - 44.5	10/30/02	4.28	< 1.0
		11/27/02	1.90	< 1.0
		12/31/02	2.15	< 1.0
		03/04/03	1.88	< 1.0
		07/21/03	3.06	< 1.0
		09/09/03	2.25	< 1.0
		10/31/03	3.03	< 1.0
		12/04/03	3.59	< 1.0
		01/20/04	2.93	< 1.0
		02/19/04	3.22	1.15
		03/30/04	3.39	< 1.0
		06/03/04	5.07	2.60
		06/24/04	4.56	1.92
		07/23/04	4.77	< 1.0
		08/26/04	4.42	1.43
		10/07/04	3.88	1.18
11/15/04	3.70	< 1.0		
216-Z-7 Crib C3875	61.5 - 62.0	11/27/02	< 1.0	< 1.0
		12/31/02	< 1.0	< 1.0
		03/04/03	< 1.0	< 1.0
		07/21/03	< 1.0	< 1.0
		09/09/03	< 1.0	< 1.0
		10/31/03	< 1.0	< 1.0
		12/04/03	NA	NA
		01/20/04	NA	NA
		02/19/04	NA	NA
		03/30/04	NA	NA
		06/03/04	< 1.0	3.93
		06/24/04	< 1.0	2.96
		07/23/04	NA	NA
		08/26/04	< 1.0	1.65
		10/07/04	< 1.0	1.17
11/15/04	< 1.0	< 1.0		

Table 3-6. Analytical Results for Eight Temporary Soil Vapor Probes Installed During the Step I Investigation. (4 Pages)

Location	Depth (ft bgs)	Date	Carbon Tetrachloride (ppmv)	Chloroform (ppmv)
216-T-19 Crib C3874	31.0 - 31.5	10/30/02	1.52	< 1.0
		11/27/02	< 1.0	< 1.0
		12/31/02	< 1.0	< 1.0
		03/04/03	1.01	< 1.0
		07/21/03	1.23	< 1.0
		09/09/03	1.26	< 1.0
		10/31/03	1.50	< 1.0
		12/04/03	1.70	< 1.0
		01/20/04	9.62	2.48
		02/19/04	1.43	1.43
		03/30/04	1.35	< 1.0
		06/03/04	< 1.0	2.41
		06/24/04	1.26	2.03
		07/23/04	NA	NA
		08/26/04	1.45	1.70
		10/07/04	< 1.0	1.76
11/15/04	1.31	< 1.0		
218-W-4C Burial Ground Site 2 C4057	8.9 - 9.4	12/10/02	28.6	7.43
		01/13/03	7.19	2.12
		03/04/03	30.9	7.38
		07/24/03	48.0	10.1
		10/23/03	43.0	10.3
		11/25/03	22.7	< 1.0
		02/25/04	9.78	3.61
		03/30/04	6.58	< 1.0
218-W-4C Burial Ground, Site 2 C4056	34.3 - 34.8	12/10/02	18.8	5.25
		01/13/03	8.46	2.34
		03/04/03	18.1	4.56
		07/24/03	19.5	4.93
		10/23/03	11.4	4.5
		11/25/03	6.92	< 1.0
		02/25/04	< 1.0	< 1.0
		03/30/04	< 1.0	< 1.0

Table 3-6. Analytical Results for Eight Temporary Soil Vapor Probes Installed During the Step I Investigation. (4 Pages)

Location	Depth (ft bgs)	Date	Carbon Tetrachloride (ppmv)	Chloroform (ppmv)
218-W-4C Burial Ground, Site 6 C4058	30.5 - 31.0	12/10/02	5.26	1.91
		01/13/03	3.54	< 1.0
		03/04/03	4.85	1.24
		07/21/03	2.57	< 1.0
		07/24/03	5.52	1.29
		10/23/03	4.11	1.64
		11/25/03	3.69	< 1.0
		02/25/04	4.06	3.57
		03/30/04	3.87	< 1.0
		06/03/04	3.54	2.41
		06/24/04	3.50	2.13
		07/23/04	2.82	1.47
		08/26/04	1.68	2.37
		10/07/04	< 1.0	16.9
11/15/04	< 1.0	29.3		

NA = not analyzed. Unable to collect sample.

After April 2004, the two sample probes (C4056 and C4057) in the 218-W-4C Burial Ground were covered with soil as a result of waste retrieval operations and could not be sampled.

From D&D-30838, 200-PW-1 Operable Unit Report on Step II Sampling and Analysis of the Dispersed Carbon Tetrachloride Vadose Zone Plume.

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
216-Z-9 Trench (coarse)									
1	8/14/2003	25	U	25	U	25	U	NA	
2	8/14/2003	25	U	25	U	25	U	NA	
3	8/14/2003	25	U	25	U	25	U	NA	
4	8/14/2003	25	U	25	U	25	U	NA	
5	8/14/2003	36		25	U	25	U	NA	
6	8/14/2003	25	U	25	U	25	U	NA	
7	8/14/2003	22	J	25	U	25	U	NA	
8	8/14/2003	95		25	U	25	U	NA	
9	8/14/2003	45		25	U	25	U	NA	
10	8/14/2003	25	U	25	U	25	U	NA	
11	8/14/2003	25	U	25	U	25	U	NA	
12	8/14/2003	25	U	25	U	25	U	NA	
13	8/14/2003	25	U	25	U	25	U	NA	
14	8/14/2003	25	U	25	U	25	U	NA	
15	8/14/2003	20	J	25	U	25	U	NA	
16	8/14/2003	23	J	25	U	25	U	NA	
17	8/14/2003	77		25	U	25	U	NA	
18	8/14/2003	57		25	U	25	U	NA	
19	8/14/2003	25	U	25	U	25	U	NA	
20	8/14/2003	25	U	25	U	25	U	NA	
21	8/14/2003	25	U	25	U	25	U	NA	
22	8/14/2003	20	J	25	U	25	U	NA	
23	8/14/2003	25	U	25	U	25	U	NA	
24	8/14/2003	25	U	25	U	25	U	NA	
25	8/14/2003	13	J	25	U	25	U	NA	
26	8/14/2003	78		25	U	25	U	NA	
27	8/14/2003	25	U	25	U	25	U	NA	
28	8/14/2003	11	J	25	U	25	U	NA	
29	8/14/2003	26		25	U	25	U	NA	
30	8/14/2003	25	U	25	U	25	U	NA	
31	8/14/2003	25	U	25	U	25	U	NA	
32	8/14/2003	25	U	25	U	25	U	NA	
33	8/14/2003	10	J	25	U	25	U	NA	
34	8/14/2003	74		25	U	25	U	NA	
35	8/14/2003	48		25	U	25	U	NA	

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Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
36	8/14/2003	70		25	U	25	U	NA	
37	8/14/2003	45		25	U	25	U	NA	
38	8/14/2003	60		25	U	25	U	NA	
39	8/14/2003	29		25	U	25	U	NA	
40	8/14/2003	72		25	U	25	U	NA	
41	8/14/2003	27		25	U	25	U	NA	
42	8/14/2003	56		25	U	25	U	NA	
45	8/14/2003	25	U	25	U	25	U	NA	
46	8/14/2003	25	U	25	U	25	U	NA	
47	8/14/2003	25	U	25	U	25	U	NA	
48	8/14/2003	92		25	U	25	U	NA	
49	8/14/2003	23	J	25	U	25	U	NA	
50	8/14/2003	33		25	U	25	U	NA	
51	8/14/2003	25	U	25	U	25	U	NA	
52	8/14/2003	79		25	U	25	U	NA	
53	8/14/2003	15	J	25	U	25	U	NA	
54	8/14/2003	25	U	25	U	25	U	NA	
55	8/14/2003	25	U	25	U	25	U	NA	
56	8/14/2003	18	J	25	U	25	U	NA	
57	8/14/2003	25	U	25	U	25	U	NA	
58	8/14/2003	14	J	25	U	25	U	NA	
59	8/14/2003	18	J	25	U	25	U	NA	
60	8/14/2003	23	J	25	U	25	U	NA	
61	8/14/2003	25	U	25	U	25	U	NA	
62	8/14/2003	32		25	U	25	U	NA	
63	8/14/2003	25	U	25	U	25	U	NA	
64	8/14/2003	190		25	U	25	U	NA	
65	8/14/2003	25	U	25	U	25	U	NA	
66	8/14/2003	25	U	25	U	25	U	NA	
67	8/14/2003	25	U	25	U	25	U	NA	
68	8/14/2003	25	U	25	U	25	U	NA	
69	8/14/2003	24	J	25	U	25	U	NA	
70	8/14/2003	23	J	25	U	25	U	NA	
71	8/14/2003	25	U	25	U	25	U	NA	
72	8/14/2003	23	J	25	U	25	U	NA	
73	8/14/2003	10	J	25	U	25	U	NA	

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
74	8/14/2003	25	U	25	U	25	U	NA	
75	8/14/2003	25	U	25	U	25	U	NA	
76	8/14/2003	15	J	25	U	25	U	NA	
77	8/14/2003	31		25	U	25	U	NA	
78	8/14/2003	46		25	U	25	U	NA	
79	8/14/2003	110		25	U	25	U	NA	
80	8/14/2003	25	U	25	U	25	U	NA	
81	8/14/2003	99		25	U	25	U	NA	
82	8/14/2003	18	J	25	U	25	U	NA	
83	8/14/2003	25	U	25	U	25	U	NA	
84	8/14/2003	25	U	25	U	25	U	NA	
85	8/14/2003	25	U	25	U	25	U	NA	
86	8/14/2003	25	U	25	U	25	U	NA	
87	8/14/2003	64		25	U	25	U	NA	
88	8/14/2003	25	U	25	U	25	U	NA	
216-Z-9 Trench (refined)									
A1	9/13/2004	126		25	U	25	U	25	U
A2	9/13/2004	39		25	U	25	U	25	U
A3	9/13/2004	22	J	25	U	25	U	25	U
A4	9/13/2004	168		25	U	25	U	25	U
A5	9/13/2004	37		25	U	25	U	25	U
A6	9/13/2004	38		25	U	25	U	25	U
A7	9/13/2004	34		25	U	25	U	25	U
A8	9/13/2004	13	J	25	U	25	U	25	U
A9	9/13/2004	7	J	25	U	25	U	25	U
A10	9/13/2004	212		25	U	25	U	36	U
A11	9/13/2004	47		25	U	25	U	25	U
A12	9/13/2004	251		25	U	25	U	25	U
A13	9/13/2004	149		25	U	25	U	25	U
A14	9/13/2004	190		25	U	25	U	25	U
A15	9/13/2004	25	U	25	U	25	U	25	U
A16	9/13/2004	33		25	U	25	U	25	U
A17	9/13/2004	259		25	U	25	U	25	U
A18	9/13/2004	75		25	U	25	U	25	U
A19	9/13/2004	32		25	U	25	U	26	U
A20	9/13/2004	8	J	25	U	25	U	25	U

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
A21	9/13/2004	60		25	U	25	U	25	U
A22	9/13/2004	35		25	U	25	U	25	U
A23	9/13/2004	11	J	25	U	25	U	25	U
A24	9/13/2004	9	J	25	U	25	U	25	U
A25	9/13/2004	44		25	U	25	U	25	U
A26	9/13/2004	346		25	U	25	U	25	U
A27	9/13/2004	15	J	25	U	25	U	25	U
A28	9/13/2004	310		25	U	25	U	25	U
A29	9/13/2004	130		25	U	25	U	25	U
A30	9/13/2004	149		25	U	25	U	25	U
A31	9/13/2004	44		25	U	25	U	25	U
A32	9/13/2004	90		25	U	25	U	40	
A33	9/13/2004	33		25	U	25	U	25	U
A34	9/13/2004	31		25	U	25	U	25	U
A35	9/13/2004	14	J	25	U	25	U	25	U
A36	9/13/2004	29		25	U	25	U	25	U
A37	9/13/2004	111		25	U	25	U	88	
A38	9/13/2004	273		25	U	25	U	25	U
A39	9/13/2004	26		25	U	25	U	25	U
A40	9/13/2004	85		25	U	25	U	25	U
A41	9/13/2004	78		25	U	25	U	25	U
A42	9/13/2004	138		25	U	25	U	25	U
A43	9/13/2004	229		25	U	25	U	25	U
A44	9/13/2004	165		25	U	25	U	25	U
A45	9/13/2004	51		25	U	25	U	25	U
A46	9/13/2004	23	J	25	U	25	U	25	U
A47	9/13/2004	254		25	U	25	U	25	U
A48	9/13/2004	191		25	U	25	U	25	U
A49	9/13/2004	34		25	U	25	U	25	U
A50	9/13/2004	20	J	25	U	25	U	25	U
A51	9/13/2004	27		25	U	25	U	25	U
A52	9/13/2004	30		25	U	25	U	25	U
A53	9/13/2004	65		25	U	25	U	25	U
A54	9/13/2004	21	J	25	U	25	U	25	U
A55	9/13/2004	46		25	U	25	U	25	U
A56	9/13/2004	107		25	U	25	U	25	U

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
A57	9/13/2004	19	J	25	U	25	U	25	U
A58	9/13/2004	54		25	U	25	U	25	U
A59	9/13/2004	14	J	25	U	25	U	25	U
A60	9/13/2004	22	J	25	U	25	U	25	U
A61	9/13/2004	12	J	25	U	25	U	25	U
A62	9/13/2004	21	J	25	U	25	U	25	U
A63	9/13/2004	33		25	U	25	U	25	U
A64	9/13/2004	22	J	25	U	25	U	29	U
A65	9/13/2004	9	J	25	U	25	U	25	U
A66	9/13/2004	16	J	25	U	25	U	25	U
A67	9/13/2004	33		25	U	25	U	25	U
A68	9/13/2004	20	J	25	U	25	U	25	U
A69	9/13/2004	16	J	25	U	25	U	25	U
A70	9/13/2004	61		25	U	25	U	25	U
A71	9/13/2004	8	J	25	U	25	U	36	U
A72	9/13/2004	110		25	U	25	U	25	U
A73	9/13/2004	32		25	U	25	U	25	U
A74	9/13/2004	26		25	U	25	U	25	U
A75	9/13/2004	10	J	25	U	25	U	25	U
A76	9/13/2004	7	J	25	U	25	U	25	U
A77	9/13/2004	30		25	U	25	U	25	U
A78	9/13/2004	174		25	U	25	U	25	U
A79	9/13/2004	31		25	U	25	U	25	U
A80	9/13/2004	30		25	U	25	U	25	U
A81	9/14/2004	51		25	U	25	U	25	U
A82	9/14/2004	18	J	25	U	25	U	25	U
A83	9/14/2004	24	J	25	U	25	U	25	U
A84	9/14/2004	16	J	25	U	25	U	25	U
A85	9/14/2004	21	J	25	U	25	U	25	U
A86	9/14/2004	9	J	25	U	25	U	25	U
A87	9/14/2004	28		25	U	25	U	25	U
A88	9/14/2004	72		25	U	25	U	29	U
A89	9/14/2004	7	J	25	U	25	U	25	U
A90	9/14/2004	67		25	U	25	U	25	U
A91	9/14/2004	175		25	U	25	U	25	U
A92	9/14/2004	10	J	25	U	25	U	25	U

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)	CF (ng/trap)	MC (ng/trap)	CM (ng/trap)
A93	9/14/2004	28	25	U	25
A94	9/14/2004	54	25	U	25
A95	9/14/2004	113	25	U	25
A96	9/14/2004	29	25	U	25
A97	9/14/2004	11	J	25	U
A98	9/14/2004	18	J	25	U
A99	9/14/2004	33	25	U	25
A100	9/14/2004	15	J	25	U
A101	9/14/2004	45	25	U	25
A102	9/14/2004	31	25	U	25
A103	9/14/2004	38	25	U	25
A104	9/14/2004	21	J	25	U
A105	9/14/2004	35	25	U	25
A106	9/14/2004	27	25	U	25
A107	9/14/2004	135	25	U	35
A108	9/14/2004	121	25	U	25
A109	9/14/2004	25	J	25	U
A110	9/14/2004	12	J	25	U
A111	9/14/2004	12	J	25	U
A112	9/14/2004	34	25	U	25
A113	9/14/2004	90	25	U	25
A114	9/14/2004	23	J	25	U
A115	9/14/2004	16	J	25	U
A116	9/14/2004	24	J	25	U
A117	9/14/2004	85	25	U	25
A118	9/14/2004	90	25	U	25
A119	9/14/2004	98	25	U	25
A120	9/14/2004	146	25	U	25
A121	9/14/2004	449	25	U	25
A122	9/14/2004	47	25	U	25
A123	9/14/2004	45	25	U	25
A124	9/14/2004	41	25	U	25
A125	9/14/2004	46	25	U	25
A126	9/14/2004	16	J	25	U
A127	9/14/2004	82	25	U	25
A128	9/14/2004	109	25	U	25

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCL ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
A129	9/14/2004	70		25	U	25	U	25	U
A130	9/14/2004	156		25	U	25	U	25	U
A131	9/14/2004	93		25	U	25	U	31	
A132	9/14/2004	117		25	U	25	U	25	U
A133	9/14/2004	28		25	U	25	U	25	U
A134	9/14/2004	10	J	25	U	25	U	25	U
A135	9/14/2004	18	J	25	U	25	U	25	U
A136	9/14/2004	62		25	U	25	U	25	U
A137	9/14/2004	73		25	U	25	U	25	U
A138	9/14/2004	39		25	U	25	U	25	U
A139	9/14/2004	48		25	U	25	U	25	U
A140	9/14/2004	29		25	U	25	U	25	U
A141	9/14/2004	11	J	25	U	25	U	25	U
A142	9/14/2004	41		25	U	25	U	25	U
A143	9/14/2004	78		25	U	25	U	25	U
A144	9/14/2004	1	J	25	U	25	U	25	U
A145	9/14/2004	2	J	25	U	25	U	25	U
A146	9/14/2004	1	J	25	U	25	U	25	U
A147	9/14/2004	26		25	U	25	U	25	U
A148	9/14/2004	51		25	U	25	U	25	U
A149	9/14/2004	42		25	U	25	U	25	U
A150	9/14/2004	13	J	25	U	25	U	25	U
A151	9/14/2004	25	U	25	U	25	U	25	U
A152	9/14/2004	9	J	25	U	25	U	25	U
A153	9/14/2004	4	J	25	U	25	U	25	U
A154	9/14/2004	87		25	U	25	U	25	U
A155	9/14/2004	45		25	U	25	U	52	U
A156	9/14/2004	58		25	U	25	U	25	U
A157	9/14/2004	11	J	25	U	25	U	25	U
A158	9/14/2004	7	J	25	U	25	U	25	U
A159	9/14/2004	9	J	25	U	25	U	25	U
A160	9/14/2004	23	J	25	U	25	U	25	U
A161	9/14/2004	54		25	U	25	U	30	
A162	9/14/2004	21	J	25	U	25	U	25	U
A163	9/14/2004	4	J	25	U	25	U	25	U
A164	9/14/2004	6	J	25	U	25	U	31	

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
A165	9/14/2004	5	J	25	U	25	U	25	U
<i>TX-TY Tank Farm (coarse)</i>									
B1	9/15/2004	25	U	25	U	25	U	25	U
B2	9/15/2004	1	J	25	U	25	U	25	U
B3	9/15/2004	4	J	25	U	25	U	25	U
B4	9/15/2004	28		25	U	25	U	25	U
B5	9/15/2004	11	J	25	U	25	U	25	U
B6	9/15/2004	3	J	25	U	25	U	25	U
B7	9/15/2004	5	J	25	U	25	U	25	U
B8	9/15/2004	4	J	25	U	25	U	25	U
B9	9/15/2004	2	J	25	U	25	U	25	U
B10	9/15/2004	25	U	25	U	25	U	25	U
B11	9/15/2004	13	J	25	U	25	U	25	U
B12	9/15/2004	64		25	U	25	U	25	U
B13	9/15/2004	15	J	25	U	25	U	25	U
B14	9/15/2004	7	J	25	U	25	U	25	U
B15	9/15/2004	32		25	U	25	U	25	U
B16	9/15/2004	5	J	25	U	25	U	25	U
B17	9/15/2004	25	U	25	U	25	U	25	U
B18	9/15/2004	2	J	25	U	25	U	25	U
B19	9/15/2004	25	U	25	U	25	U	110	
B20	9/15/2004	2	J	25	U	25	U	25	U
B21	9/15/2004	3	J	25	U	25	U	25	U
B22	9/15/2004	5	J	25	U	25	U	25	U
B23	9/15/2004	25	U	25	U	25	U	25	U
B24	9/15/2004	25	U	25	U	25	U	25	U
B25	9/15/2004	25	U	25	U	25	U	25	U
B26	9/15/2004	25	U	25	U	25	U	25	U
B27	9/15/2004	2	J	25	U	25	U	25	U
B28	9/15/2004	15	J	25	U	25	U	25	U
B29	9/15/2004	15	J	25	U	25	U	25	U
B30	9/15/2004	20	J	25	U	25	U	25	U
B31	9/15/2004	2	J	25	U	25	U	25	U
B32	9/15/2004	25	U	25	U	25	U	25	U
B33	9/15/2004	25	U	25	U	25	U	25	U
B34	9/15/2004	2	J	25	U	25	U	25	U

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
B35	9/15/2004	4	J	25	U	25	U	25	U
B36	9/15/2004	222		25	U	25	U	25	U
B37	9/15/2004	25	U	25	U	25	U	25	U
B38	9/15/2004	25	U	25	U	25	U	25	U
B39	9/15/2004	25	U	25	U	25	U	25	U
B40	9/15/2004	25	U	25	U	25	U	27	
B41	9/15/2004	40		25	U	25	U	25	U
B42	9/15/2004	25	U	25	U	25	U	38	
B43	9/15/2004	25	U	25	U	25	U	25	U
B44	9/15/2004	25	U	25	U	25	U	33	
B45	9/15/2004	32		25	U	25	U	25	U
B46	9/15/2004	230		25	U	25	U	25	U
B47	9/15/2004	1	J	25	U	25	U	25	U
B48	9/15/2004	2	J	25	U	25	U	25	U
B49	9/15/2004	2	J	25	U	25	U	25	U
B50	9/15/2004	9	J	25	U	25	U	25	U
B51	9/15/2004	39		25	U	25	U	25	U
B52	9/15/2004	130		25	U	25	U	25	U
B53	9/15/2004	57		25	U	25	U	25	U
<i>Within PFP Protected Area (coarse)</i>									
C1	11/11/2004	25	U	25	U	25	U	25	U
C2	11/11/2004	14	J	25	U	25	U	25	U
C3	11/11/2004	16	J	25	U	25	U	25	U
C4	11/11/2004	30		25	U	25	U	25	U
C5	11/11/2004	32		25	U	25	U	25	U
C6	11/11/2004	10	J	25	U	25	U	25	U
C7	11/11/2004	17	J	25	U	25	U	25	U
C8	11/11/2004	26		25	U	25	U	25	U
C9	11/11/2004	6	J	25	U	25	U	25	U
C10	11/11/2004	21	J	25	U	25	U	25	U
C11	11/11/2004	16	J	25	U	25	U	25	U
C12	11/11/2004	330		25	U	25	U	25	U
C13	11/11/2004	25	U	25	U	25	U	25	U
C14	11/11/2004	10	J	25	U	25	U	25	U
C16	11/11/2004	15	J	25	U	25	U	25	U
C17	11/11/2004	23	J	25	U	25	U	25	U

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
C18	11/11/2004	51		25	U	25	U	25	U
C19	11/11/2004	6	J	25	U	25	U	49	
C20	11/11/2004	66		231		25	U	57	
C21	11/11/2004	280		25	U	25	U	25	U
C22	11/11/2004	145		25	U	25	U	25	U
C23	11/11/2004	29		25	U	25	U	25	U
C24	11/11/2004	13	J	25	U	25	U	25	U
C25	11/11/2004	147		25	U	25	U	25	U
C26	11/11/2004	25	U	25	U	25	U	25	U
C27	11/11/2004	6	J	25	U	25	U	25	U
C28	11/11/2004	11	J	25	U	25	U	25	U
C29	11/11/2004	6	J	25	U	25	U	25	U
C30	11/11/2004	9	J	25	U	25	U	25	U
C31	11/11/2004	25	U	25	U	25	U	25	U
C32	11/11/2004	25	U	25	U	25	U	25	U
C33	11/11/2004	25	U	25	U	25	U	25	U
C34	11/11/2004	25	U	25	U	25	U	28	
C36	11/11/2004	25	U	25	U	25	U	25	U
C37	11/11/2004	25	U	25	U	25	U	25	U
C38	11/11/2004	11	J	25	U	25	U	25	U
C39	11/11/2004	25	U	25	U	25	U	25	U
C40	11/11/2004	18	J	25	U	25	U	25	U
C41	11/11/2004	5	J	25	U	25	U	25	U
216-Z-1A, 216-Z-12, and 216-Z-18 (coarse)									
D1	11/11/2004	56		25	U	25	U	25	U
D2	11/11/2004	8	J	25	U	25	U	25	U
D3	11/11/2004	5	J	25	U	25	U	36	
D4	11/11/2004	6	J	25	U	25	U	25	U
D5	11/11/2004	6	J	25	U	25	U	25	U
D6	11/12/2004	35		25	U	25	U	25	U
D7	11/11/2004	19	J	25	U	25	U	26	
D8	11/11/2004	57		25	U	25	U	25	U
D9	11/11/2004	10	J	25	U	25	U	25	U
D10	11/11/2004	8	J	25	U	25	U	25	U
D11	11/11/2004	77		25	U	25	U	25	U
D12	11/11/2004	22	J	25	U	25	U	25	U

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
D13	11/11/2004	26		25	U	25	U	25	U
D14	11/11/2004	6	J	25	U	25	U	25	U
D15	11/11/2004	19	J	25	U	25	U	25	U
D16	11/11/2004	2175		25	U	25	U	25	U
D17	11/12/2004	1138		25	U	25	U	35	
D18	11/11/2004	72		25	U	25	U	25	U
D19	11/11/2004	56		25	U	25	U	25	U
D20	11/11/2004	8	J	25	U	25	U	25	U
D21	11/11/2004	12	J	25	U	25	U	25	U
D22	11/12/2004	23	J	25	U	25	U	25	U
D23	11/11/2004	129		25	U	25	U	25	U
D24	11/11/2004	18	J	25	U	25	U	25	U
D25	11/11/2004	23	J	25	U	25	U	25	U
D26	11/11/2004	9	J	25	U	25	U	25	U
D27	11/11/2004	5	J	25	U	25	U	28	
D28	11/11/2004	6	J	25	U	25	U	25	U
D29	11/12/2004	94		25	U	25	U	25	U
D30	11/11/2004	97		25	U	25	U	25	U
D31	11/11/2004	31		25	U	25	U	25	U
D32	11/11/2004	10	J	25	U	25	U	25	U
D33	11/11/2004	25	U	25	U	25	U	25	U
D34	11/11/2004	73		25	U	25	U	25	U
D35	11/11/2004	23	J	25	U	25	U	25	U
D36	11/11/2004	18	J	25	U	25	U	40	
D37	11/11/2004	25	U	25	U	25	U	25	U
D38	11/11/2004	25	U	25	U	25	U	25	U
D39	11/11/2004	14	J	25	U	25	U	25	U
D40	11/11/2004	21	J	25	U	25	U	25	U
D41	11/11/2004	18	J	25	U	25	U	25	U
D42	11/11/2004	25	U	25	U	25	U	25	U
D43	11/11/2004	35		25	U	25	U	25	U
D44	11/11/2004	7	J	25	U	25	U	25	U
D45	11/11/2004	15	J	25	U	25	U	25	U
D46	11/11/2004	7	J	25	U	25	U	25	U
D47	11/11/2004	25	U	25	U	25	U	25	U
D48	11/11/2004	19	J	25	U	25	U	25	U

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
D49	11/11/2004	25	U	25	U	25	U	25	U
D50	11/11/2004	6	J	25	U	25	U	25	U
D51	11/12/2004	35		25	U	25	U	25	U
D52	11/12/2004	27		25	U	25	U	25	U
D53	11/12/2004	25	U	25	U	25	U	25	U
D54	11/12/2004	6	J	25	U	25	U	25	U
D55	11/12/2004	8	J	25	U	25	U	25	U
D56	11/12/2004	6	J	25	U	25	U	32	
D57	11/15/2004	48		25	U	25	U	25	U
D58	11/15/2004	18	J	25	U	25	U	25	U
D59	11/15/2004	7	J	25	U	25	U	25	U
D60	11/15/2004	6	J	25	U	25	U	25	U
D61	11/15/2004	25	U	25	U	25	U	25	U
D62	11/15/2004	16	J	25	U	25	U	25	U
D63	11/15/2004	11	J	25	U	25	U	25	U
D64	11/15/2004	13	J	25	U	25	U	25	U
D65	11/15/2004	5	J	25	U	25	U	25	U
D66	11/15/2004	8	J	25	U	25	U	25	U
Outside TX Tank Farm (refined)									
E1	12/5/2005	42		25	U	25	U	25	U
E2	12/5/2005	25	U	25	U	25	U	25	U
E3	12/5/2005	25	U	25	U	25	U	25	U
E4	12/5/2005	25	U	25	U	25	U	25	U
E5	12/5/2005	47		25	U	25	U	25	U
E6	12/5/2005	46		25	U	25	U	25	U
E7	12/5/2005	25	U	25	U	25	U	25	U
E8	12/5/2005	51		25	U	25	U	25	U
E9	12/5/2005	25	U	25	U	25	U	25	U
E10	12/5/2005	29		25	U	25	U	25	U
E11	12/5/2005	25	U	25	U	25	U	25	U
E12	12/5/2005	25	U	25	U	25	U	25	U
E13	12/5/2005	25	U	25	U	25	U	25	U
E14	12/5/2005	25	U	25	U	25	U	25	U
E15	12/5/2005	68		25	U	25	U	25	U
E16	12/5/2005	148		25	U	25	U	25	U
E17	12/5/2005	56		25	U	25	U	25	U

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
E18	12/5/2005	25	U	25	U	25	U	25	U
E19	12/5/2005	36		25	U	25	U	25	U
E20	12/5/2005	127		25	U	25	U	25	U
E21	12/5/2005	95		25	U	25	U	25	U
E22	12/5/2005	57		25	U	25	U	25	U
E23	12/5/2005	230		25	U	25	U	25	U
E24	12/5/2005	212		25	U	25	U	25	U
E25	12/5/2005	52		25	U	25	U	25	U
E26	12/5/2005	36		25	U	25	U	25	U
E27	12/5/2005	99		25	U	25	U	25	U
E28	12/5/2005	25	U	25	U	25	U	25	U
E29	12/5/2005	76		25	U	25	U	25	U
E30	12/5/2005	40		25	U	25	U	25	U
E31	12/5/2005	34		25	U	25	U	25	U
E32	12/5/2005	64		25	U	25	U	25	U
E33	12/5/2005	33		25	U	25	U	25	U
E34	12/5/2005	81		25	U	25	U	25	U
E35	12/5/2005	96		25	U	25	U	25	U
E36	12/5/2005	35		25	U	25	U	25	U
E37	12/5/2005	45		25	U	25	U	25	U
E38	12/5/2005	254		25	U	25	U	25	U
E39	12/5/2005	101		25	U	25	U	25	U
E40	12/5/2005	94		25	U	25	U	25	U
E41	12/5/2005	314		25	U	25	U	25	U
E42	12/5/2005	72		25	U	25	U	25	U
E43	12/5/2005	25	U	25	U	25	U	25	U
E44	12/5/2005	33		25	U	25	U	25	U
E45	12/5/2005	273		25	U	25	U	25	U
E46	12/5/2005	45		25	U	25	U	25	U
E47	12/5/2005	37		25	U	25	U	25	U
E48	12/5/2005	66		25	U	25	U	25	U
E49	12/5/2005	103		25	U	25	U	25	U
E50	12/5/2005	56		25	U	25	U	25	U
E51	12/5/2005	25	U	25	U	25	U	25	U
E52	12/5/2005	83		25	U	25	U	25	U
E53	12/5/2005	294		25	U	25	U	25	U

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
E54	12/5/2005	36		25	U	25	U	25	U
E55	12/5/2005	25	U	25	U	25	U	25	U
E56	12/5/2005	123		25	U	25	U	25	U
E57	12/5/2005	260		25	U	25	U	25	U
E58	12/5/2005	27		25	U	25	U	25	U
E59	12/5/2005	25	U	25	U	25	U	25	U
E60	12/5/2005	29		25	U	25	U	25	U
E61	12/5/2005	172		25	U	25	U	25	U
E62	12/5/2005	41		25	U	25	U	25	U
E63	12/5/2005	25	U	25	U	25	U	25	U
E64	12/5/2005	77		25	U	25	U	25	U
E66	12/5/2005	102		25	U	25	U	25	U
E67	12/5/2005	73		25	U	25	U	25	U
E68	12/5/2005	31		25	U	25	U	25	U
E69	12/5/2005	96		25	U	25	U	25	U
E70	12/5/2005	41		25	U	25	U	25	U
E71	12/5/2005	33		25	U	25	U	25	U
E72	12/5/2005	25	U	25	U	25	U	25	U
E73	12/5/2005	32		25	U	25	U	25	U
E74	12/5/2005	26		25	U	25	U	25	U
216-Z-1A and 216-Z-18 (refined)									
F1	1/31/2005	250		25	U	25	U	25	U
F2	1/31/2005	14	J	25	U	25	U	25	U
F3	1/31/2005	15	J	25	U	25	U	25	U
F4	1/31/2005	9	J	25	U	25	U	25	U
F5	1/31/2005	16	J	25	U	25	U	25	U
F6	1/31/2005	38		25	U	25	U	25	U
F7	1/31/2005	30		25	U	25	U	25	U
F8	1/31/2005	25	U	25	U	25	U	25	U
F9	1/31/2005	9	J	25	U	25	U	25	U
F10	1/31/2005	8	J	25	U	25	U	25	U
F11	1/31/2005	41		25	U	25	U	25	U
F12	1/31/2005	10	J	25	U	25	U	25	U
F13	1/31/2005	65		25	U	25	U	25	U
F14	1/31/2005	15	J	25	U	25	U	25	U
F15	1/31/2005	7	J	25	U	25	U	25	U

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
F16	1/31/2005	6	J	25	U	25	U	25	U
F17	1/31/2005	16	J	25	U	25	U	25	U
F18	1/31/2005	11	J	25	U	25	U	25	U
F19	1/31/2005	17	J	25	U	25	U	25	U
F20	1/31/2005	9	J	25	U	25	U	25	U
F21	1/31/2005	8	J	25	U	25	U	25	U
F22	1/31/2005	36		25	U	25	U	25	U
F23	1/31/2005	223		25	U	25	U	25	U
F24	1/31/2005	25	U	25	U	25	U	25	U
F25	1/31/2005	25	U	25	U	25	U	25	U
F26	1/31/2005	8	J	25	U	25	U	25	U
F27	1/31/2005	26		25	U	25	U	25	U
F28	1/31/2005	11	J	25	U	25	U	25	U
F29	1/31/2005	89		25	U	25	U	25	U
F30	1/31/2005	5	J	25	U	25	U	25	U
F31	1/31/2005	64		25	U	25	U	25	U
F32	1/31/2005	110		25	U	25	U	25	U
F33	1/31/2005	28		25	U	25	U	25	U
F34	1/31/2005	5	J	25	U	25	U	25	U
F35	1/31/2005	113		25	U	25	U	25	U
F36	1/31/2005	6	J	25	U	25	U	25	U
F37	1/31/2005	29		25	U	25	U	25	U
F38	1/31/2005	25	U	25	U	25	U	25	U
F39	1/31/2005	104		25	U	25	U	25	U
F40	1/31/2005	80		25	U	25	U	25	U
F41	1/31/2005	6	J	25	U	25	U	25	U
F42	1/31/2005	21	J	25	U	25	U	25	U
F43	1/31/2005	61		25	U	25	U	25	U
F44	1/31/2005	65		25	U	25	U	25	U
F45	1/31/2005	932		25	U	25	U	25	U
F46	1/31/2005	15	J	25	U	25	U	25	U
F47	1/31/2005	282		25	U	25	U	25	U
F48	1/31/2005	301		25	U	25	U	25	U
F49	1/31/2005	67		25	U	25	U	25	U
F50	1/31/2005	60		25	U	25	U	25	U
F51	1/31/2005	4124		27		25	U	25	U

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
F52	1/31/2005	4531		25	U	25	U	25	U
F53	1/31/2005	432		25	U	25	U	25	U
F54	1/31/2005	1051		25	U	25	U	25	U
F55	1/31/2005	176		25	U	25	U	25	U
F56	1/31/2005	412		25	U	25	U	25	U
F57	1/31/2005	381		25	U	25	U	25	U
F58	1/31/2005	486		25	U	25	U	25	U
F59	1/31/2005	3122		25	U	25	U	25	U
F60	1/31/2005	1556		25	U	25	U	25	U
F61	1/31/2005	567		25	U	25	U	25	U
F62	1/31/2005	733		25	U	25	U	25	U
F63	1/31/2005	129		25	U	25	U	25	U
F64	1/31/2005	9	J	25	U	25	U	25	U
F65	1/31/2005	77		25	U	25	U	25	U
F66	1/31/2005	87		25	U	25	U	25	U
F67	1/31/2005	916		25	U	25	U	25	U
F68	1/31/2005	498		25	U	25	U	25	U
F69	1/31/2005	198		25	U	25	U	25	U
F70	1/31/2005	80		25	U	25	U	25	U
F71	1/31/2005	39		25	U	25	U	25	U
F72	1/31/2005	148		25	U	25	U	25	U
F73	1/31/2005	25	U	25	U	25	U	25	U
F74	1/31/2005	61		25	U	25	U	25	U
F75	1/31/2005	85		25	U	25	U	25	U
F76	1/31/2005	369		25	U	25	U	25	U
F77	1/31/2005	177		25	U	25	U	25	U
F78	1/31/2005	33		25	U	25	U	25	U
F79	1/31/2005	23	J	25	U	25	U	25	U
F80	1/31/2005	78		25	U	25	U	25	U
East of PFP (refined)									
G1	1/31/2005	5	J	25	U	25	U	25	U
G2	1/31/2005	16	J	25	U	25	U	25	U
G3	1/31/2005	155		25	U	25	U	25	U
G4	1/31/2005	14	J	25	U	25	U	25	U
G5	1/31/2005	24	J	25	U	25	U	25	U
G6	1/31/2005	13	J	25	U	25	U	25	U

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)	CF (ng/trap)	MC (ng/trap)	CM (ng/trap)
G7	1/31/2005	780	112	25	U
G8	1/31/2005	126	25	U	25
G9	1/31/2005	149	25	U	25
G10	1/31/2005	468	25	U	25
G11	1/31/2005	477	25	U	25
G12	1/31/2005	136	25	U	25
G13	1/31/2005	249	25	U	25
G14	1/31/2005	2028	165	25	U
G15	1/31/2005	1428	89	25	U
G16	1/31/2005	843	25	U	25
G17	1/31/2005	401	25	U	25
G18	1/31/2005	1312	47	25	U
G19	1/31/2005	1002	25	U	25
G20	1/31/2005	34	25	U	25
G21	1/31/2005	314	25	U	25
G22	1/31/2005	588	25	U	25
<i>East and northeast of 216-Z-9 Trench (refined)</i>					
B1D853	6/1/2005	25	U	25	U
B1D854	6/1/2005	25	U	25	U
B1D855	6/1/2005	25	U	25	U
B1D856	6/1/2005	25	U	25	U
B1D857	6/1/2005	25	U	25	U
B1D858	6/1/2005	104.66	25	U	25
B1D859	6/1/2005	34.89	25	U	25
B1D860	6/1/2005	97.32	25	U	25
B1D861	6/1/2005	25	U	25	U
B1D862	6/1/2005	25	U	25	U
B1D863	6/1/2005	25	U	25	U
B1D864	6/1/2005	25	U	25	U
B1D865	6/1/2005	25	U	25	U
B1D866	6/1/2005	25	U	25	U
B1D867	6/1/2005	25	U	25	U
B1D868	6/1/2005	25	U	25	U
B1D869	6/1/2005	25	U	25	U
B1D870	6/1/2005	31.53	25	U	25
B1D871	6/1/2005	68.94	25	U	25

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Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
			U		U		U		U
B1D872	6/1/2005	25	U	25	U	25	U	25	U
B1D873	6/1/2005	45.45		25	U	25	U	100.54	
B1D874	6/1/2005	25	U	25	U	25	U	25	U
B1D875	6/1/2005	59.83		25	U	25	U	25	U
B1D876	6/1/2005	25	U	25	U	25	U	25	U
B1D877	6/1/2005	25	U	25	U	25	U	25	U
B1D878	6/1/2005	25	U	25	U	25	U	25	U
B1D879	6/1/2005	32.18		25	U	25	U	25	U
B1D880	6/1/2005	25	U	25	U	25	U	25	U
B1D881	6/1/2005	105.95		25	U	25	U	25	U
B1D882	6/1/2005	25	U	25	U	25	U	25	U
B1D883	6/1/2005	68.11		25	U	25	U	25	U
B1D884	6/1/2005	25	U	25	U	25	U	25	U
B1D888	6/2/2005	70.26		25	U	25	U	25	U
B1D889	6/2/2005	25	U	25	U	25	U	25	U
B1D890	6/2/2005	67.06		25	U	25	U	25	U
B1D891	6/2/2005	25	U	25	U	25	U	25	U
B1D892	6/2/2005	25	U	25	U	25	U	25	U
B1D893	6/2/2005	25	U	25	U	25	U	25	U
B1D894	6/2/2005	25	U	25	U	25	U	25	U
B1D895	6/2/2005	25	U	25	U	25	U	25	U
B1D896	6/2/2005	154.86		25	U	25	U	25	U
B1D897	6/2/2005	62.37		25	U	25	U	25	U
B1D898	6/2/2005	25	U	25	U	25	U	25	U
B1D899	6/2/2005	25	U	25	U	25	U	25	U
B1D8B0	6/2/2005	38.96		25	U	25	U	25	U
B1D8B1	6/2/2005	69.98		25	U	25	U	25	U
B1D8B2	6/2/2005	67.13		25	U	25	U	25	U
B1D8B3	6/2/2005	25	U	25	U	25	U	25	U
B1D8B4	6/2/2005	25	U	25	U	25	U	25	U
B1D8B5	6/2/2005	25	U	25	U	25	U	25	U
B1D8B6	6/2/2005	25	U	25	U	25	U	25	U
B1D8B7	6/2/2005	140.48		25	U	25	U	25	U
B1D8B8	6/2/2005	40.55		25	U	25	U	25	U
B1D8B9	6/2/2005	161.75		25	U	25	U	25	U
B1D8C0	6/2/2005	74.97		25	U	25	U	25	U

Table 3.7. Passive Soil Vapor Sampling Results at Release Sites. (19 Pages)

Sample ID	Sample Date	CCl ₄ (ng/trap)		CF (ng/trap)		MC (ng/trap)		CM (ng/trap)	
B1D8C1	6/2/2005	25	U	25	U	25	U	25	U
B1D8C2	6/2/2005	25	U	25	U	25	U	25	U
B1D8C3	6/2/2005	25	U	25	U	25	U	25	U
<i>Inside TX Tank Farm (refined)</i>									
H1	8/7/2006	10	J	25	U	25	U	25	U
H2	8/7/2006	25	U	25	U	25	U	25	U
H3	8/7/2006	23	J	25	U	25	U	25	U
H4	8/7/2006	20	J	25	U	25	U	25	U
H5	8/7/2006	25	U	25	U	25	U	25	U
H6	8/7/2006	25	U	25	U	25	U	25	U
H7	8/7/2006	25	U	25	U	25	U	25	U
H8	8/7/2006	25	U	25	U	25	U	25	U
H9	8/7/2006	12	J	25	U	25	U	25	U
H10	8/7/2006	25	U	25	U	25	U	25	U
H11	8/7/2006	25	U	25	U	25	U	25	U
H12	8/7/2006	20	J	7	J	25	U	25	U
H13	8/7/2006	25	U	25	U	25	U	25	U
H14	8/7/2006	25	U	25	U	25	U	25	U
H15	8/7/2006	25	U	25	U	25	U	25	U
H16	8/7/2006	25	U	25	U	25	U	25	U
H17	8/7/2006	23	J	25	U	25	U	25	U

CCl₄ = carbon tetrachloride.

CF = chloroform.

CM = chloromethane.

ID = identification (number).

J = estimated value below the laboratory's reported quantitation level.

MC = methylene chloride.

NT = non-tested.

U = analyzed for but not detected. Value reported is the reporting limit.

From DOE/RL-2006-58, Carbon Tetrachloride DNAPL Source Term Characterization Report, and D&D-30838, 200-PW-1 Operable Unit Report on Step II Sampling and Analysis of the Dispersed Carbon Tetrachloride Vadose Zone Plume.

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P1A	C4743	P1A-3	3	1/12/2005	2 U	2 U
P1A	C4743	P1A-6	6	1/12/2005	2 U	2 U
P1A	C4743	P1A-9	9	1/12/2005	2 U	2 U
P1A	C4743	P1A-12	12	1/12/2005	2 U	2 U
P1A	C4743	P1A-15	15	1/12/2005	2 U	2 U
P1A	C4743	P1A-18	18	1/12/2005	2 U	2 U
P1A	C4743	P1A-21	21	1/12/2005	2 U	2 U
P1A	C4743	P1A-24	24	1/12/2005	2 U	2 U
P1A	C4743	P1A-25	25	1/12/2005	7	7
P1A	C4743	P1A-25A	25	1/12/2005	2 U	2 U
P1A	C4743	P1A-25B	25	1/12/2005	2 U	2 U
P2	C4699	P2-4	4	1/10/2005	2 U	3
P2	C4699	P2-6	6	1/10/2005	2 U	2
P2	C4699	P2-9	9	1/10/2005	2 U	3
P2	C4699	P2-12	12	1/10/2005	2 U	2
P2	C4699	P2-15	15	1/10/2005	2 U	3
P2	C4699	P2-18	18	1/10/2005	2 U	2 U
P2	C4699	P2-21	21	1/10/2005	2 U	2 U
P2	C4699	P2-24	24	1/10/2005	2 U	2 U
P2	C4699	P2-27	27	1/10/2005	2 U	2 U
P2	C4699	P2-30	30	1/10/2005	2 U	2 U
P2	C4699	P2-33A	33	1/10/2005	2 U	2 U
P2	C4699	P2-33B	33	1/10/2005	3	3
P2	C4699	P2-36	36	1/10/2005	2 U	2 U
P2	C4699	P2-39	39	1/10/2005	2 U	2 U
P2	C4699	P2-41A	41.25	1/10/2005	2 U	2 U
P2	C4699	P2-41B	41.25	1/10/2005	2 U	2 U
P2	C4699	P2-41C	41.25	1/10/2005	2 U	2 U
P2	C4699	P2-41D	41.25	1/10/2005	2 U	2 U
P2	C4699	P2-41E	41.25	1/10/2005	2 U	2 U
P2	C4699	P2-41F	41.25	1/10/2005	2 U	2 U
P2	C4699	P2-41G	41.25	1/10/2005	2 U	2 U
P2	C4699	P2-41H	41.25	1/10/2005	4	7
P3	C4700	P3-3	3	1/10/2005	2 U	2 U
P3	C4700	P3-6	6	1/10/2005	2 U	2 U
P3	C4700	P3-9	9	1/10/2005	2 U	2 U

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P3	C4700	P3-12	12	1/10/2005	2 U	2 U
P3	C4700	P3-15	15	1/10/2005	2 U	2 U
P3	C4700	P3-18	18	1/10/2005	2 U	2 U
P3	C4700	P3-21	21	1/10/2005	2 U	2 U
P3	C4700	P3-24	24	1/10/2005	2 U	2 U
P3	C4700	P3-27A	27	1/10/2005	2 U	2 U
P3	C4700	P3-27B	27	1/10/2005	2 U	3
P3	C4700	P3-27C	27	1/10/2005	2 U	2 U
P3	C4700	P3-27D	27	1/10/2005	2 U	2 U
P3	C4700	P3-27E	27	1/10/2005	5	7
P4	C4701	P4-3	3	1/11/2005	2 U	2
P4	C4701	P4-6	6	1/11/2005	2 U	2 U
P4	C4701	P4-9	9	1/11/2005	2 U	2 U
P4	C4701	P4-12	12	1/11/2005	2 U	2 U
P4	C4701	P4-15	15	1/11/2005	2 U	2 U
P4	C4701	P4-18	18	1/11/2005	2 U	2 U
P4	C4701	P4-21	21	1/11/2005	2 U	2 U
P4	C4701	P4-24	24	1/11/2005	2 U	2 U
P4	C4701	P4-27	27	1/11/2005	2 U	2 U
P4	C4701	P4-30	30	1/11/2005	2 U	2 U
P4	C4701	P4-33A	33	1/11/2005	2 U	2 U
P4	C4701	P4-33B	33	1/11/2005	2 U	2
P4	C4701	P4-36	36	1/11/2005	2 U	2 U
P4	C4701	P4-39	39	1/11/2005	2 U	2 U
P4	C4701	P4-42	42	1/11/2005	2 U	2 U
P4	C4701	P4-45	45	1/11/2005	2 U	2 U
P4	C4701	P4-48A	47.8	1/11/2005	2 U	2 U
P4	C4701	P4-48B	47.8	1/11/2005	2 U	2 U
P4	C4701	P4-48C	47.8	1/11/2005	37	12
P5	C4702	P5-3	3	1/12/2005	2 U	2 U
P5	C4702	P5-6	6	1/12/2005	2 U	2 U
P5	C4702	P5-9	9	1/12/2005	2 U	2 U
P5	C4702	P5-12	12	1/12/2005	2 U	2 U
P5	C4702	P5-15	15	1/12/2005	2 U	2 U
P5	C4702	P5-18	18	1/12/2005	2 U	2 U
P5	C4702	P5-21	21	1/12/2005	2 U	2 U

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P5	C4702	P5-24	24	1/12/2005	2 U	2 U
P5	C4702	P5-27A	27	1/12/2005	2 U	2 U
P5	C4702	P5-27B	27	1/12/2005	2 U	2 U
P5	C4702	P5-27C	27	1/12/2005	6	8
P6	C4703	P6-3	3	1/10/2005	2 U	2 U
P6	C4703	P6-6	6	1/10/2005	2 U	2 U
P6	C4703	P6-9	9	1/10/2005	2 U	2 U
P6	C4703	P6-12	12	1/10/2005	2 U	2 U
P6	C4703	P6-15	15	1/10/2005	2 U	2 U
P6	C4703	P6-18	18	1/10/2005	2 U	2 U
P6	C4703	P6-21	21	1/10/2005	2 U	2 U
P6	C4703	P6-24	24	1/10/2005	2 U	2 U
P6	C4703	P6-27	27	1/10/2005	2 U	2 U
P6	C4703	P6-30	30	1/10/2005	2 U	2 U
P6	C4703	P6-33A	33	1/10/2005	2 U	2 U
P6	C4703	P6-33B	33	1/10/2005	5	6
P6	C4703	P6-36	36	1/10/2005	2 U	2 U
P6	C4703	P6-39	39	1/10/2005	2 U	2 U
P6	C4703	P6-42	42	1/10/2005	2 U	2 U
P6	C4703	P6-45	45	1/10/2005	2 U	2 U
P6	C4703	P6-48	48	1/10/2005	2 U	2 U
P6	C4703	P6-51	51	1/10/2005	2 U	2 U
P6	C4703	P6-54	54	1/10/2005	2 U	2 U
P6	C4703	P6-57A	56.6	1/10/2005	2 U	2 U
P6	C4703	P6-57B	56.6	1/10/2005	2 U	3
P6	C4703	P6-57C	56.6	1/10/2005	4	6
P7	C4704	P7-3	3	1/11/2005	2 U	2 U
P7	C4704	P7-6	6	1/11/2005	2 U	2 U
P7	C4704	P7-9	9	1/11/2005	2 U	2 U
P7	C4704	P7-12	12	1/11/2005	2 U	2 U
P7	C4704	P7-15	15	1/11/2005	2 U	2 U
P7	C4704	P7-18	18	1/11/2005	2 U	2 U
P7	C4704	P7-21	21	1/11/2005	2 U	2 U
P7	C4704	P7-24	24	1/11/2005	2 U	2 U
P7	C4704	P7-27	27	1/11/2005	2 U	2 U
P7	C4704	P7-30	30	1/11/2005	2 U	2 U

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Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P7	C4704	P7-33A	33	1/11/2005	2 U	2 U
P7	C4704	P7-33B	33	1/11/2005	6	8
P7	C4704	P7-33C	33	1/11/2005	5	8
P7	C4704	P7-36	36	1/11/2005	2 U	2
P7	C4704	P7-39	39	1/11/2005	2 U	2 U
P7	C4704	P7-40A	39.9	1/11/2005	2 U	2 U
P7	C4704	P7-40B	39.9	1/11/2005	2 U	2 U
P7	C4704	P7-40C	39.9	1/11/2005	2 U	2 U
P7	C4704	P7-40D	39.9	1/11/2005	7	10
P7	C4704	P7-40E	40.2	1/11/2005	4	6
P8A	C4763	P8A-3	3.7	4/14/2005	4	8
P8A	C4763	P8A-7	7	4/14/2005	2	5
P8A	C4763	P8A-10	10.4	4/14/2005	2 U	4
P8A	C4763	P8A-13	13.7	4/14/2005	2 U	3
P8A	C4763	P8A-17	17	4/14/2005	2 U	4
P8A	C4763	P8A-20	20.3	4/14/2005	2 U	4
P8A	C4763	P8A-23	23.6	4/14/2005	2 U	3
P8A	C4763	P8A-26	26.8	4/14/2005	2 U	3
P8A	C4763	P8A-30	30.1	4/14/2005	2 U	3
P8A	C4763	P8A-33	33.4	4/14/2005	13	19
P8A	C4763	P8A-36	36.7	4/14/2005	7	11
P8A	C4763	P8A-40	40.1	4/14/2005	4	8
P8A	C4763	P8A-43	43.4	4/14/2005	2	6
P8A	C4763	P8A-46	46.9	4/14/2005	2	5
P8A	C4763	P8A-49	49.3	4/14/2005	2 U	4
P9A	C4762	P9A-3	3.2	4/14/2005	11	19
P9A	C4762	P9A-6	6.5	4/14/2005	6	11
P9A	C4762	P9A-10	10.4	4/14/2005	3	7
P9A	C4762	P9A-13	13.2	4/14/2005	3	6
P9A	C4762	P9A-16	16.5	4/14/2005	2	6
P9A	C4762	P9A-19	19.6	4/14/2005	2	5
P9A	C4762	P9A-22	22.9	4/14/2005	2 U	5
P9A	C4762	P9A-26	26.2	4/14/2005	2 U	4
P9A	C4762	P9A-29	29.5	4/14/2005	2 U	4
P9A	C4762	P9A-32	32.8	4/14/2005	6	10
P9A	C4762	P9A-36	36	4/14/2005	5	9

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P9A	C4762	P9A-39	39.8	4/14/2005	5	9
P9A	C4762	P9A-42	42.6	4/14/2005	5	9
P9A	C4762	P9A-45	45.9	4/14/2005	4	7
P9A	C4762	P9A-49	49.2	4/14/2005	10	15
P9A	C4762	P9A-52	52.6	4/14/2005	7	12
P9A	C4762	P9A-55	55.9	4/14/2005	22	33
P9A	C4762	P9A-59	59.2	4/14/2005	12	21
P9A	C4762	P9A-60	60.3	4/14/2005	8	15
P10A	C4764	P10A-3	3.4	4/15/2005	9	16
P10A	C4764	P10A-6	6.7	4/15/2005	4	8
P10A	C4764	P10A-9	9.9	4/15/2005	3	6
P10A	C4764	P10A-13	13.2	4/15/2005	2	5
P10A	C4764	P10A-16	16.5	4/15/2005	2 U	4
P10A	C4764	P10A-20	20.1	4/15/2005	2 U	4
P10A	C4764	P10A-23	23.1	4/15/2005	2 U	4
P10A	C4764	P10A-26	26.4	4/15/2005	2 U	4
P10A	C4764	P10A-29	29.6	4/15/2005	2 U	4
P10A	C4764	P10A-32	32.9	4/15/2005	2	4
P10A	C4764	P10A-36	36.2	4/15/2005	2 U	4
P10A	C4764	P10A-39	39.5	4/15/2005	2 U	3
P10A	C4764	P10A-42	42.8	4/15/2005	2 U	3
P10A	C4764	P10A-46	46	4/15/2005	2 U	2
P10A	C4764	P10A-49	49.3	4/15/2005	2 U	3
P10A	C4764	P10A-52	52.6	4/15/2005	2 U	2
P10A	C4764	P10A-55	55.9	4/15/2005	2 U	2
P10A	C4764	P10A-59	59.3	4/15/2005	2 U	2
P10A	C4764	P10A-62	62.6	4/15/2005	2 U	2
P10A	C4764	P10A-65	65.9	4/15/2005	2 U	2
P10A	C4764	P10A-69	69.2	4/15/2005	2 U	2
P10A	C4764	P10A-72	72.4	4/15/2005	2 U	3
P10A	C4764	P10A-75	75.7	4/15/2005	4	36
P10A	C4764	P10A-79	79	4/15/2005	17	7
P10A	C4764	P10A-82	82.3	4/15/2005	29	11
P10A	C4764	P10A-85	85.7	4/15/2005	32	7
P10A	C4764	P10A-89	89	4/15/2005	8	3
P10A	C4764	P10A-92	92.3	4/15/2005	45	6

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P10A	C4764	P10A-95	95.6	4/15/2005	67	7
P10A	C4764	P10A-98	98.85	4/15/2005	69	6
P10A	C4764	P10A-102	102.1	4/15/2005	119	5
P10A	C4764	P10A-105	105.6	4/15/2005	94	5
P10A	C4764	P10A-109A	109.2	4/15/2005	41	18
P10A	C4764	P10A-109B	109.2	4/15/2005	41	18
P10A	C4764	P10A-112	112.1	4/15/2005	50	9
P11A	C4760	P11A-3	3.2	4/13/2005	2 U	4
P11A	C4760	P11A-6	6.5	4/13/2005	2 U	3
P11A	C4760	P11A-9	9.9	4/13/2005	2 U	3
P11A	C4760	P11A-13	13.1	4/13/2005	2 U	4
P11A	C4760	P11A-16	16.3	4/13/2005	2 U	4
P11A	C4760	P11A-19	19.6	4/13/2005	2 U	4
P11A	C4760	P11A-22	22.9	4/13/2005	2 U	3
P11A	C4760	P11A-26	26.2	4/13/2005	2 U	3
P11A	C4760	P11A-29	29.5	4/13/2005	2 U	4
P11A	C4760	P11A-32	32.8	4/13/2005	2	5
P11A	C4760	P11A-36	36	4/13/2005	2 U	4
P11A	C4760	P11A-39	39.3	4/13/2005	2 U	4
P11A	C4760	P11A-42	42.6	4/13/2005	2 U	3
P11A	C4760	P11A-45	45.9	4/13/2005	2 U	2
P11A	C4760	P11A-49	49.2	4/13/2005	2 U	6
P11A	C4760	P11A-52	52.4	4/13/2005	2 U	5
P11A	C4760	P11A-55	55.7	4/13/2005	2 U	4
P11A	C4760	P11A-59	59	4/13/2005	2 U	2
P11A	C4760	P11A-62	62.3	4/13/2005	2 U	4
P11A	C4760	P11A-65	65.6	4/13/2005	7	11
P11A	C4760	P11A-68	68.8	4/13/2005	4	6
P11A	C4760	P11A-69	69.82	4/13/2005	3	5
P12A	C4761	P12A-3	3.6	4/13/2005	3	8
P12A	C4761	P12A-6	6.8	4/13/2005	2	7
P12A	C4761	P12A-10	10.1	4/13/2005	6	13
P12A	C4761	P12A-13	13.4	4/13/2005	15	25
P12A	C4761	P12A-16	16.7	4/13/2005	8	15
P12A	C4761	P12A-20	20	4/13/2005	5	12
P12A	C4761	P12A-23	23.2	4/13/2005	4	11

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Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P12A	C4761	P12A-26	26.5	4/13/2005	3	10
P12A	C4761	P12A-29	29.8	4/13/2005	3	9
P12A	C4761	P12A-33	33.1	4/13/2005	15	25
P12A	C4761	P12A-36	36.7	4/13/2005	9	18
P12A	C4761	P12A-40	40	4/13/2005	5	14
P12A	C4761	P12A-43	43.2	4/13/2005	3	14
P12A	C4761	P12A-46	46.5	4/13/2005	3	11
P12A	C4761	P12A-49	49.8	4/13/2005	2	11
P12A	C4761	P12A-53	53.1	4/13/2005	2	8
P12A	C4761	P12A-56	56.1	4/13/2005	2	9
P12A	C4761	P12A-59	59.7	4/13/2005	2	9
P12A	C4761	P12A-62	62.9	4/13/2005	3	11
P12A	C4761	P12A-66	66.2	4/13/2005	2	10
P12A	C4761	P12A-69	69.5	4/13/2005	17	24
P12A	C4761	P12A-72	72.6	4/13/2005	5	8
P12A	C4761	P12A-74	74.1	4/13/2005	5	8
P13A	C4753	P13A-3	3.6	4/8/2005	2	7
P13A	C4753	P13A-6	6.8	4/8/2005	2	5
P13A	C4753	P13A-10	10.1	4/8/2005	2	6
P13A	C4753	P13A-13	13.4	4/8/2005	2 U	4
P13A	C4753	P13A-16	16.7	4/8/2005	2 U	4
P13A	C4753	P13A-20	20.1	4/8/2005	2 U	3
P13A	C4753	P13A-23	23.4	4/8/2005	2 U	3
P13A	C4753	P13A-26	26.5	4/8/2005	2	3
P13A	C4753	P13A-29	29.8	4/8/2005	2	3
P13A	C4753	P13A-33	33.1	4/8/2005	2 U	3
P13A	C4753	P13A-36	36.4	4/8/2005	3	5
P13A	C4753	P13A-39	39.6	4/8/2005	2	7
P13A	C4753	P13A-42	42.9	4/8/2005	2	9
P13A	C4753	P13A-46	46.2	4/8/2005	2	6
P13A	C4753	P13A-49	49.5	4/8/2005	2	6
P13A	C4753	P13A-52	52.8	4/8/2005	2	6
P13A	C4753	P13A-56	56	4/8/2005	3	7
P13A	C4753	P13A-59	59.3	4/8/2005	2	7
P13A	C4753	P13A-62	62.6	4/8/2005	3	5
P13A	C4753	P13A-65	65.9	4/8/2005	4	9

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P13A	C4753	P13A-69	69	4/8/2005	2 U	4
P14A	C4754	P14A-3	3.4	4/8/2005	3	11
P14A	C4754	P14A-6	6.7	4/8/2005	4	7
P14A	C4754	P14A-9	9.9	4/8/2005	2 U	5
P14A	C4754	P14A-13	13.2	4/8/2005	2 U	4
P14A	C4754	P14A-16	16.5	4/8/2005	2 U	3
P14A	C4754	P14A-19	19.8	4/8/2005	2 U	3
P14A	C4754	P14A-23	23.1	4/8/2005	2 U	8
P14A	C4754	P14A-26	26.4	4/8/2005	3	3
P14A	C4754	P14A-29	29.8	4/8/2005	2	3
P14A	C4754	P14A-33	33.4	4/8/2005	3	5
P14A	C4754	P14A-36	36.7	4/8/2005	7	9
P14A	C4754	P14A-40	40	4/8/2005	4	6
P14A	C4754	P14A-41	41.3	4/8/2005	4	5
P14B	C4755	P14B-43	43.4	4/8/2005	5	8
P14B	C4755	P14B-46	46.7	4/8/2005	2 U	3
P14B	C4755	P14B-50	50	4/8/2005	2 U	3
P14B	C4755	P14B-53	53.3	4/8/2005	2 U	3
P14B	C4755	P14B-56	56.5	4/8/2005	2 U	2
P14B	C4755	P14B-59	59.8	4/8/2005	2 U	5
P14B	C4755	P14B-63	63.1	4/8/2005	2 U	2
P14B	C4755	P14B-65	65.9	4/8/2005	2 U	2
P15A	C4756	P15A-3	3.4	4/8/2005	2 U	2 U
P15A	C4756	P15A-6	6.8	4/8/2005	2 U	4
P15A	C4756	P15A-9	9.9	4/8/2005	2 U	3
P15A	C4756	P15A-13	13.6	4/8/2005	7	10
P15A	C4756	P15A-17	17.2	4/8/2005	4	7
P15A	C4756	P15A-20	20.4	4/8/2005	3	6
P15A	C4756	P15A-24	24.2	4/8/2005	3	6
P15A	C4756	P15A-26	26.8	4/8/2005	2	4
P15A	C4756	P15A-30	30	4/8/2005	6	10
P15A	C4756	P15A-33	33.1	4/8/2005	2	4
P15A	C4756	P15A-36	36.2	4/8/2005	2 U	4
P15A	C4756	P15A-39	39.5	4/8/2005	2 U	3
P15A	C4756	P15A-42	42.8	4/8/2005	2 U	3
P15A	C4756	P15A-46	46	4/8/2005	2 U	3

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P15A	C4756	P15A-49	49.3	4/8/2005	2 U	3
P15A	C4756	P15A-53	53	4/8/2005	2 U	2
P15A	C4756	P15A-55	55.9	4/8/2005	2 U	3
P15A	C4756	P15A-59	59.2	4/8/2005	2 U	3
P15A	C4756	P15A-61	61	4/8/2005	2 U	3
P17B	C4859	P17B-3	3.22	5/19/2005	2 U	3
P17B	C4859	P17B-6	6.5	5/19/2005	2 U	2
P17B	C4859	P17B-9	9.78	5/19/2005	2 U	2
P17B	C4859	P17B-13	13.06	5/19/2005	2 U	3
P17B	C4859	P17B-16	16.34	5/19/2005	2 U	8
P17B	C4859	P17B-19	19.62	5/19/2005	2 U	2
P17B	C4859	P17B-22	22.9	5/19/2005	2 U	2
P17B	C4859	P17B-26	26.18	5/19/2005	2 U	2
P17B	C4859	P17B-29	29.46	5/19/2005	2 U	2 U
P17B	C4859	P17B-32	32.75	5/19/2005	2 U	2 U
P17B	C4859	P17B-36	36.03	5/19/2005	2 U	2
P17B	C4859	P17B-39	39.31	5/19/2005	2 U	2 U
P17B	C4859	P17B-42	42.59	5/19/2005	2 U	2
P17B	C4859	P17B-45	45.87	5/19/2005	2 U	2 U
P17B	C4859	P17B-49	49.15	5/19/2005	2 U	2
P17B	C4859	P17B-52	52.43	5/19/2005	2 U	2 U
P17B	C4859	P17B-55	55.71	5/19/2005	2 U	2 U
P17B	C4859	P17B-58	58.99	5/19/2005	2 U	2
P17B	C4859	P17B-62	62.27	5/19/2005	2 U	2 U
P17B	C4859	P17B-65	65.55	5/19/2005	2 U	4
P17B	C4859	P17B-68	68.83	5/19/2005	2 U	3
P17B	C4859	P17B-72	72.11	5/19/2005	2 U	2
P17B	C4859	P17B-75	75.4	5/19/2005	2 U	2 U
P17B	C4859	P17B-78	78.02	5/19/2005	2 U	2 U
P18D	C4772	P18D-3	3.2	4/20/2005	2 U	3
P18D	C4772	P18D-6	6.5	4/20/2005	2 U	2
P18D	C4772	P18D-9	9.8	4/20/2005	2 U	2
P18D	C4772	P18D-13	13.1	4/20/2005	2 U	2
P18D	C4772	P18D-16	16.3	4/20/2005	2 U	2
P18D	C4772	P18D-19	19.6	4/20/2005	2 U	2
P18D	C4772	P18D-22	22.9	4/20/2005	2 U	2

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P18D	C4772	P18D-26	26.3	4/20/2005	2 U	2
P18D	C4772	P18D-29	29.6	4/20/2005	2 U	2 U
P18D	C4772	P18D-32	32.8	4/20/2005	2 U	2
P18D	C4772	P18D-36	36	4/20/2005	2 U	2 U
P18D	C4772	P18D-39	39.3	4/20/2005	2 U	2 U
P18D	C4772	P18D-42	42.6	4/20/2005	2 U	2 U
P18D	C4772	P18D-45	45.9	4/20/2005	2 U	2
P18D	C4772	P18D-49	49.2	4/20/2005	2 U	2
P18D	C4772	P18D-52	52.4	4/20/2005	2 U	2 U
P18D	C4772	P18D-55	55.7	4/20/2005	2 U	2 U
P18D	C4772	P18D-59	59	4/20/2005	2 U	2 U
P18D	C4772	P18D-62	62.3	4/20/2005	2 U	2
P18D	C4772	P18D-65	65.7	4/20/2005	2 U	3
P18D	C4772	P18D-68	68.3	4/20/2005	2 U	2
P19A	C4750	P19A-3	3.2	4/6/2005	2 U	2
P19A	C4750	P19A-6	6.5	4/6/2005	2 U	3
P19A	C4750	P19A-9	9.78	4/6/2005	2 U	3
P19A	C4750	P19A-13	13.1	4/6/2005	2 U	3
P19A	C4750	P19A-16	16.3	4/6/2005	2 U	4
P19A	C4750	P19A-19	19.6	4/6/2005	2 U	3
P19A	C4750	P19A-23	23.1	4/6/2005	2 U	3
P19A	C4750	P19A-26	26.4	4/6/2005	2 U	3
P19A	C4750	P19A-28A	28.5	4/6/2005	12	19
P19A	C4750	P19A-28B	28.5	4/6/2005	12	19
P19A	C4750	P19A-28C	28.5	4/6/2005	12	19
P19A	C4750	P19A-28D	28.5	4/6/2005	12	19
P19B	C4751	P19B-30A	30.1	4/7/2005	4	8
P19B	C4751	P19B-30B	30.1	4/7/2005	4	8
P19B	C4751	P19B-31A	31.3	4/7/2005	3	7
P19B	C4751	P19B-31B	31.3	4/7/2005	3	7
P20A	C4857	P20A-1	0.58	5/18/2005	5	9
P20A	C4857	P20A-4	4.02	5/18/2005	2	5
P20A	C4857	P20A-7	7.14	5/18/2005	2 U	4
P20A	C4857	P20A-10	10.75	5/18/2005	2 U	3
P20A	C4857	P20A-13	13.87	5/18/2005	2 U	3
P20A	C4857	P20A-17	17.15	5/18/2005	2 U	3

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Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P20A	C4857	P20A-20	20.43	5/18/2005	2 U	3
P20A	C4857	P20A-23	23.71	5/18/2005	2 U	3
P20A	C4857	P20A-26	26.99	5/18/2005	2 U	2
P20A	C4857	P20A-30	30.27	5/18/2005	2 U	2
P20A	C4857	P20A-34	34.86	5/18/2005	2 U	3
P21A	C4757	P21A-3	3.4	4/21/2005	4	7
P21A	C4757	P21A-6	6.8	4/21/2005	2 U	3
P21A	C4757	P21A-10	10.1	4/21/2005	2 U	3
P21A	C4757	P21A-13	13.2	4/21/2005	2 U	2
P21A	C4757	P21A-16	16.5	4/21/2005	2 U	2
P21A	C4757	P21A-19	19.8	4/21/2005	2 U	2
P21A	C4757	P21A-23	23.1	4/21/2005	2 U	2 U
P21A	C4757	P21A-26	26.4	4/21/2005	4	3
P21A	C4757	P21A-29	29.6	4/21/2005	5	2
P21A	C4757	P21A-33	33.2	4/21/2005	4	2
P22A	C4752	P22A-3	3.6	4/7/2005	2 U	4
P22A	C4752	P22A-6	6.8	4/7/2005	2 U	4
P22A	C4752	P22A-10	10.1	4/7/2005	2 U	4
P22A	C4752	P22A-13	13.4	4/7/2005	2 U	3
P22A	C4752	P22A-16	16.7	4/7/2005	2 U	3
P22A	C4752	P22A-20	20	4/7/2005	2	3
P22A	C4752	P22A-23	23.2	4/7/2005	2	9
P22A	C4752	P22A-26	26.5	4/7/2005	3	4
P22A	C4752	P22A-29	29.8	4/7/2005	2	14
P22A	C4752	P22A-33	33.1	4/7/2005	5	5
P22A	C4752	P22A-36	36.4	4/7/2005	5	4
P22A	C4752	P22A-39	39.6	4/7/2005	5	8
P22A	C4752	P22A-42	42.9	4/7/2005	16	6
P22A	C4752	P22A-46	46.2	4/7/2005	48	10
P22A	C4752	P22A-49	49.5	4/7/2005	26	10
P22A	C4752	P22A-52	52.7	4/7/2005	20	11
P22A	C4752	P22A-56	56	4/7/2005	6	8
P22A	C4752	P22A-59	59.3	4/7/2005	184	9
P22A	C4752	P22A-62	62.6	4/7/2005	101	10
P22A	C4752	P22A-63	63.4	4/7/2005	97	7
P23A	C4768	P23A-3	3.6	4/19/2005	2	5

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P23A	C4768	P23A-6	6.8	4/19/2005	2 U	4
P23A	C4768	P23A-10	10.1	4/19/2005	2 U	3
P23A	C4768	P23A-13	13.4	4/19/2005	2 U	3
P23A	C4768	P23A-16	16.7	4/19/2005	2 U	3
P23A	C4768	P23A-20	20	4/19/2005	2 U	3
P23A	C4768	P23A-23	23.2	4/19/2005	2 U	3
P23A	C4768	P23A-26	26.5	4/19/2005	2 U	3
P23A	C4768	P23A-29	29.8	4/19/2005	2 U	3
P23A	C4768	P23A-33	33.1	4/19/2005	9	15
P23A	C4768	P23A-36	36.7	4/19/2005	7	12
P23A	C4768	P23A-39	39.8	4/19/2005	5	9
P23A	C4768	P23A-43	43.1	4/19/2005	3	6
P23A	C4768	P23A-46	46.4	4/19/2005	4	8
P23A	C4768	P23A-49	49.5	4/19/2005	3	7
P23A	C4768	P23A-52	52.8	4/19/2005	3	7
P23A	C4768	P23A-56	56	4/19/2005	3	6
P23A	C4768	P23A-59	59.3	4/19/2005	2	6
P23A	C4768	P23A-62	62.6	4/19/2005	3	7
P23A	C4768	P23A-66	66	4/19/2005	5	9
P23A	C4768	P23A-69	69.3	4/19/2005	2 U	5
P23A	C4768	P23A-72	72.6	4/19/2005	2 U	4
P23A	C4768	P23A-75	75.9	4/19/2005	2 U	4
P23A	C4768	P23A-79	79.2	4/19/2005	2 U	3
P23A	C4768	P23A-82	82.5	4/19/2005	2 U	3
P23A	C4768	P23A-84	84.8	4/19/2005	2 U	3
P24A	C4810	P24A-9	9.94	5/17/2005	2 U	3
P24A	C4810	P24A-13	13.22	5/17/2005	2 U	2 U
P24A	C4810	P24A-16	16.51	5/17/2005	2 U	2 U
P24A	C4810	P24A-19	19.79	5/17/2005	2 U	2 U
P24A	C4810	P24A-23	23.23	5/17/2005	2 U	2 U
P24A	C4810	P24A-26	26.35	5/17/2005	2 U	2 U
P24A	C4810	P24A-29	29.63	5/17/2005	2 U	2 U
P24A	C4810	P24A-32	32.91	5/17/2005	2 U	2 U
P24A	C4810	P24A-36	36.35	5/17/2005	2 U	2 U
P24A	C4810	P24A-39	39.79	5/17/2005	2 U	2 U
P24A	C4810	P24A-43	43.08	5/17/2005	2 U	2 U

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Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P24A	C4810	P24A-46	46.2	5/17/2005	2 U	2 U
P24A	C4810	P24A-49	49.3	5/17/2005	2 U	2 U
P24A	C4810	P24A-51	51.77	5/17/2005	2 U	2 U
P25A	C4906	P25A-3	3.55	7/27/2005	2 U	4
P25A	C4906	P25A-6	6.66	7/27/2005	2 U	3
P25A	C4906	P25A-9	9.78	7/27/2005	2 U	3
P25A	C4906	P25A-13	13.06	7/27/2005	2	2 U
P25A	C4906	P25A-16	16.18	7/27/2005	2	2 U
P25A	C4906	P25A-19	19.46	7/27/2005	3	2 U
P25A	C4906	P25A-22	22.74	7/27/2005	4	2 U
P25A	C4906	P25A-26	26.02	7/27/2005	5	2 U
P25A	C4906	P25A-29A	29.46	7/27/2005	5	2 U
P25A	C4906	P25A-29B	29.46	7/27/2005	5	2 U
P25A	C4906	P25A-32	32.58	7/27/2005	6	2 U
P25A	C4906	P25A-35	35.7	7/27/2005	6	2 U
P25A	C4906	P25A-38A	38.16	7/27/2005	6	2 U
P25A	C4906	P25A-38B	38.16	7/27/2005	6	2 U
P26A	C4765	P26A-3	3.1	4/18/2005	2	4
P26A	C4765	P26A-6	6.3	4/18/2005	2 U	3
P26A	C4765	P26A-9	9.6	4/18/2005	2 U	3
P26A	C4765	P26A-12	12.9	4/18/2005	2 U	3
P26A	C4765	P26A-16	16.2	4/18/2005	2 U	3
P26A	C4765	P26A-19	19.5	4/18/2005	2 U	3
P26A	C4765	P26A-22	22.7	4/18/2005	2 U	3
P26A	C4765	P26A-26	26	4/18/2005	2 U	3
P26A	C4765	P26A-29	29.5	4/18/2005	2	3
P26A	C4765	P26A-32	32.9	4/18/2005	8	11
P26A	C4765	P26A-35	35.9	4/18/2005	3	5
P26A	C4765	P26A-38	38.7	4/18/2005	2	4
P27A	C4766	P27A-3	3.7	4/18/2005	7	10
P27A	C4766	P27A-7	7	4/18/2005	4	6
P27A	C4766	P27A-10	10.3	4/18/2005	2 U	3
P27A	C4766	P27A-13	13.9	4/18/2005	2 U	3
P27A	C4766	P27A-18	18.2	4/18/2005	2 U	3
P27A	C4766	P27A-20	20.3	4/18/2005	2 U	10
P27A	C4766	P27A-24	24.1	4/18/2005	2 U	3

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P28A	C4905	P28A-3	3.38	7/27/2005	2 U	3
P28A	C4905	P28A-5	5.35	7/27/2005	2 U	2
P28A	C4905	P28A-6B	6.01	7/27/2005	2 U	2 U
P28A	C4905	P28A-6A	6.66	7/27/2005	2 U	2 U
P28A	C4905	P28A-9	9.78	7/27/2005	2 U	2 U
P28A	C4905	P28A-13	13.06	7/27/2005	2 U	2 U
P28A	C4905	P28A-16	16.18	7/27/2005	2 U	2 U
P28A	C4905	P28A-19	19.29	7/27/2005	2 U	2 U
P28A	C4905	P28A-22	22.74	7/27/2005	2 U	2 U
P28A	C4905	P28A-26	26.02	7/27/2005	2 U	2 U
P28A	C4905	P28A-29A	29.3	7/27/2005	2 U	2 U
P28A	C4905	P28A-29B	29.3	7/27/2005	2 U	2 U
P28A	C4905	P28A-32	32.42	7/27/2005	2 U	2 U
P28A	C4905	P28A-35	35.7	7/27/2005	2 U	2 U
P28A	C4905	P28A-38	38.98	7/27/2005	2 U	2 U
P28A	C4905	P28A-42	42.26	7/27/2005	2 U	2 U
P28A	C4905	P28A-45	45.7	7/27/2005	2 U	2 U
P28A	C4905	P28A-48	48.66	7/27/2005	2 U	3
P28A	C4905	P28A-51	51.94	7/27/2005	2 U	4
P28A	C4905	P28A-55	55.22	7/27/2005	2	5
P28A	C4905	P28A-58	58.5	7/27/2005	2	2
P28A	C4905	P28A-61A	61.78	7/27/2005	3	2 U
P28A	C4905	P28A-61B	61.78	7/27/2005	3	2 U
P28A	C4905	P28A-65	65.06	7/27/2005	3	2 U
P28A	C4905	P28A-68	68.34	7/27/2005	3	2 U
P28A	C4905	P28A-71	71.7	7/27/2005	4	2 U
P28A	C4905	P28A-73A	73.75	7/27/2005	4	2 U
P28A	C4905	P28A-73B	73.75	7/27/2005	4	2 U
P29A	C4866	P29A-3	3.55	7/19/2005	4	8
P29A	C4866	P29A-6	6.83	7/19/2005	4	5
P29A	C4866	P29A-10	10.11	7/19/2005	5	4
P29A	C4866	P29A-13	13.39	7/19/2005	7	4
P29A	C4866	P29A-16	16.67	7/19/2005	9	3
P29A	C4866	P29A-19	19.95	7/19/2005	11	3
P29A	C4866	P29A-23	23.23	7/19/2005	13	3
P29A	C4866	P29A-26	26.51	7/19/2005	17	3

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P29A	C4866	P29A-29	29.79	7/19/2005	20	4
P29A	C4866	P29A-33	33.07	7/19/2005	11	2
P29A	C4866	P29A-36	36.35	7/19/2005	21	4
P29A	C4866	P29A-39	39.63	7/19/2005	25	6
P29A	C4866	P29A-42	42.92	7/19/2005	46	3
P29A	C4866	P29A-46	46.2	7/19/2005	75	4
P29A	C4866	P29A-49	49.48	7/19/2005	102	5
P29A	C4866	P29A-52A	52.76	7/19/2005	252	6
P29A	C4866	P29A-52B	52.76	7/19/2005	254	6
P29A	C4866	P29A-59	59.32	7/19/2005	118	10
P29A	C4866	P29A-62A	62.6	7/19/2005	194	8
P29A	C4866	P29A-62B	62.6	7/19/2005	192	8
P29B	C4867	P29B-52	52.76	7/20/2005	135	9
P29B	C4867	P29B-59	59.16	7/20/2005	126	7
P29B	C4867	P29B-62A	62.44	7/20/2005	85	8
P29B	C4867	P29B-62B	62.44	7/20/2005	85	8
P29B	C4867	P29B-65	65.72	7/20/2005	42	3
P29B	C4867	P29B-69	69	7/20/2005	46	4
P29B	C4867	P29B-72	72.28	7/20/2005	31	3
P29B	C4867	P29B-75	75.72	7/20/2005	2 U	2 U
P29B	C4867	P29B-78	78.84	7/20/2005	2 U	2 U
P29B	C4867	P29B-82	82.45	7/20/2005	2 U	2 U
P29B	C4867	P29B-85	85.4	7/20/2005	45	3
P29B	C4867	P29B-86A	86.55	7/20/2005	14	2
P29B	C4867	P29B-86B	86.55	7/20/2005	14	2
P30A	C4871	P30A-3	3.22	7/21/2005	2 U	3
P30A	C4871	P30A-6	6.5	7/21/2005	2 U	3
P30A	C4871	P30A-9	9.78	7/21/2005	2 U	3
P30A	C4871	P30A-13	13.06	7/21/2005	2 U	3
P30A	C4871	P30A-16	16.34	7/21/2005	2 U	2
P30A	C4871	P30A-19	19.62	7/21/2005	2 U	2
P30A	C4871	P30A-22	22.9	7/21/2005	2 U	2
P30A	C4871	P30A-26	26.18	7/21/2005	2 U	2 U
P30A	C4871	P30A-29A	29.46	7/21/2005	3	2
P30A	C4871	P30A-29B	29.46	7/21/2005	3	2
P30A	C4871	P30A-32A	32.91	7/21/2005	2 U	2 U

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P30A	C4871	P30A-32B	32.91	7/21/2005	2 U	2
P30E	C4934	P30E-34	34.06	8/5/2005	41	9
P30E	C4934	P30E-37	37.5	8/5/2005	53	6
P30E	C4934	P30E-40	40.95	8/5/2005	80	9
P30E	C4934	P30E-44	44.56	8/5/2005	103	7
P30E	C4934	P30E-47	47.84	8/5/2005	109	6
P30E	C4934	P30E-51	51.28	8/5/2005	136	7
P30E	C4934	P30E-54	54.73	8/5/2005	257	14
P30E	C4934	P30E-58	58.01	8/5/2005	394	19
P30E	C4934	P30E-61	61.29	8/5/2005	512	27
P30E	C4934	P30E-64	64.73	8/5/2005	485	25
P30E	C4934	P30E-67	67.85	8/5/2005	381	18
P30E	C4934	P30E-69	69.49	8/5/2005	380	17
P31A	C4873	P31A-1A	1	8/17/2005	2 U	2 U
P31A	C4873	P31A-1B	1	8/17/2005	2 U	2 U
P31A	C4873	P31A-3	3.38	8/17/2005	2 U	3
P31A	C4873	P31A-6	6.66	8/17/2005	2 U	3
P31A	C4873	P31A-9	9.78	8/17/2005	2 U	2
P31A	C4873	P31A-13	13.06	8/17/2005	2 U	2
P31A	C4873	P31A-16	16.51	8/17/2005	2 U	3
P31A	C4873	P31A-19	19.79	8/17/2005	2 U	2
P31A	C4873	P31A-23	23.07	8/17/2005	2 U	2
P31A	C4873	P31A-26	26.35	8/17/2005	2 U	2 U
P31A	C4873	P31A-29A	29.63	8/17/2005	4	3
P31A	C4873	P31A-29B	29.63	8/17/2005	4	3
P31A	C4873	P31A-32	32.91	8/17/2005	2 U	2 U
P31A	C4873	P31A-36	36.19	8/17/2005	6	2
P31A	C4873	P31A-39	39.47	8/17/2005	9	2
P31A	C4873	P31A-42	42.75	8/17/2005	8	2
P31A	C4873	P31A-46	46.03	8/17/2005	4	2 U
P31A	C4873	P31A-49	49.31	8/17/2005	4	2
P31A	C4873	P31A-52	52.59	8/17/2005	2 U	2 U
P31A	C4873	P31A-55	55.87	8/17/2005	2 U	2 U
P31A	C4873	P31A-59	59.16	8/17/2005	2 U	2 U
P31A	C4873	P31A-62A	62.44	8/17/2005	2 U	2 U
P31A	C4873	P31A-62B	62.44	8/17/2005	2 U	2 U

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P31A	C4873	P31A-65	65.72	8/17/2005	2 U	2 U
P31A	C4873	P31A-68A	68.51	8/17/2005	2 U	2 U
P31A	C4873	P31A-68B	68.51	8/17/2005	2 U	2 U
P32B	C4904	P32B-3	3.22	7/27/2005	2	3
P32B	C4904	P32B-5	5.02	7/27/2005	3	2
P32B	C4904	P32B-6A	6.01	7/27/2005	4	2 U
P32B	C4904	P32B-6B	6.5	7/27/2005	4	2 U
P32B	C4904	P32B-9	9.62	7/27/2005	6	2 U
P32B	C4904	P32B-12	12.9	7/27/2005	8	2 U
P32B	C4904	P32B-16	16.18	7/27/2005	9	2 U
P32B	C4904	P32B-19	19.46	7/27/2005	9	2 U
P32B	C4904	P32B-22	22.74	7/27/2005	11	2 U
P32B	C4904	P32B-26	26.02	7/27/2005	12	2 U
P32B	C4904	P32B-29A	29.14	7/27/2005	13	2 U
P32B	C4904	P32B-29B	29.14	7/27/2005	13	2 U
P32B	C4904	P32B-32	32.25	7/27/2005	15	2 U
P32B	C4904	P32B-35	35.53	7/27/2005	17	2 U
P32B	C4904	P32B-39	39.47	7/27/2005	18	2
P32B	C4904	P32B-42	42.75	7/27/2005	23	2
P32B	C4904	P32B-46	46.03	7/27/2005	23	2
P32B	C4904	P32B-49	49.31	7/27/2005	19	2
P32B	C4904	P32B-52	52.76	7/27/2005	27	3
P32B	C4904	P32B-55	55.71	7/27/2005	27	2
P32B	C4904	P32B-59	59.32	7/27/2005	25	4
P32B	C4904	P32B-61A	61.94	7/27/2005	26	4
P32B	C4904	P32B-61B	61.94	7/27/2005	26	4
P33A	C4911	P33A-3	3.05	7/28/2005	2 U	6
P33A	C4911	P33A-5	5.02	7/28/2005	2 U	3
P33A	C4911	P33A-6A	6.01	7/28/2005	2 U	3
P33A	C4911	P33A-6B	6.33	7/28/2005	2 U	2
P33A	C4911	P33A-9	9.62	7/28/2005	2 U	2
P33A	C4911	P33A-13	13.05	7/28/2005	2 U	2
P33A	C4911	P33A-16	16.34	7/28/2005	2 U	3
P33A	C4911	P33A-19	19.79	7/28/2005	2 U	3
P33A	C4911	P33A-22	22.9	7/28/2005	2 U	3
P33A	C4911	P33A-26	26.18	7/28/2005	2 U	5

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P33A	C4911	P33A-29A	29.46	7/28/2005	2 U	3
P33A	C4911	P33A-29B	29.46	7/28/2005	2 U	3
P33A	C4911	P33A-32	32.91	7/28/2005	2 U	2
P33A	C4911	P33A-36	36.19	7/28/2005	2 U	3
P33A	C4911	P33A-37A	37.17	7/28/2005	2 U	2
P33A	C4911	P33A-37B	37.17	7/28/2005	2 U	2
P33B	C4912	P33B-39A	39.17	7/28/2005	2 U	6
P33B	C4912	P33B-39B	39.96	7/28/2005	2 U	4
P34A	C4870	P34A-3	3.54	7/21/2005	2 U	8
P34A	C4870	P34A-6	6.66	7/21/2005	2 U	5
P34A	C4870	P34A-9	9.78	7/21/2005	2 U	4
P34A	C4870	P34A-13	13.06	7/21/2005	2 U	4
P34A	C4870	P34A-16	16.34	7/21/2005	2 U	4
P34A	C4870	P34A-19	19.62	7/21/2005	2 U	2
P34A	C4870	P34A-22	22.9	7/21/2005	2 U	5
P34A	C4870	P34A-26	26.18	7/21/2005	2 U	3
P34A	C4870	P34A-29A	29.46	7/21/2005	2 U	3
P34A	C4870	P34A-29B	29.46	7/21/2005	2 U	3
P34A	C4870	P34A-32	32.75	7/21/2005	2 U	3
P34A	C4870	P34A-36	36.03	7/21/2005	2 U	3
P34A	C4870	P34A-39	39.31	7/21/2005	2 U	3
P34A	C4870	P34A-42	42.59	7/21/2005	2 U	3
P34A	C4870	P34A-45	45.87	7/21/2005	2 U	3
P34A	C4870	P34A-49	49.15	7/21/2005	17	3
P34A	C4870	P34A-52	52.43	7/21/2005	12	4
P34A	C4870	P34A-55	55.71	7/21/2005	3	2
P34A	C4870	P34A-58	58.99	7/21/2005	2 U	2 U
P34A	C4870	P34A-62A	62.27	7/21/2005	9	3
P34A	C4870	P34A-62B	62.27	7/21/2005	9	3
P34A	C4870	P34A-65	65.55	7/21/2005	3	3
P34A	C4870	P34A-68	68.83	7/21/2005	2	2
P34A	C4870	P34A-72	72.11	7/21/2005	2	3
P34A	C4870	P34A-75	75.4	7/21/2005	2 U	2 U
P34A	C4870	P34A-78	78.84	7/21/2005	2 U	4
P34A	C4870	P34A-81	81.96	7/21/2005	2	4
P34A	C4870	P34A-85	85.24	7/21/2005	2 U	3

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Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P34A	C4870	P34A-88A	88.52	7/21/2005	2 U	4
P34A	C4870	P34A-88B	88.52	7/21/2005	2 U	4
P35A	C4865	P35A-22	22.02	7/19/2005	2 U	4
P35A	C4865	P35A-25	25.26	7/19/2005	2 U	3
P35A	C4865	P35A-28	28.5	7/19/2005	2 U	3
P35A	C4865	P35A-31	31.74	7/19/2005	2 U	3
P35A	C4865	P35A-34	34.98	7/19/2005	3	3
P35A	C4865	P35A-38	38.22	7/19/2005	5	3
P35A	C4865	P35A-41	41.46	7/19/2005	8	3
P35A	C4865	P35A-44	44.7	7/19/2005	10	5
P35A	C4865	P35A-47	47.94	7/19/2005	8	6
P35A	C4865	P35A-51	51.18	7/19/2005	10	10
P35A	C4865	P35A-56	56.04	7/19/2005	16	4
P35A	C4865	P35A-59	59.48	7/19/2005	20	6
P35A	C4865	P35A-62	62.76	7/19/2005	24	9
P35A	C4865	P35A-66	66.04	7/19/2005	19	5
P35A	C4865	P35A-69	69.49	7/19/2005	38	6
P35A	C4865	P35A-72	72.61	7/19/2005	4	2
P35A	C4865	P35A-75	75.89	7/19/2005	30	6
P35A	C4865	P35A-79	79.66	7/19/2005	42	7
P35A	C4865	P35A-83	83.1	7/19/2005	83	10
P35A	C4865	P35A-86A	86.06	7/19/2005	86	8
P35A	C4865	P35A-86B	86.06	7/19/2005	89	9
P36A	C4868	P36A-3	3.38	7/20/2005	2 U	3
P36A	C4868	P36A-6	6.66	7/20/2005	2 U	2
P36A	C4868	P36A-9	9.94	7/20/2005	2 U	2
P36A	C4868	P36A-13	13.22	7/20/2005	2 U	2 U
P36A	C4868	P36A-16	16.51	7/20/2005	2 U	2 U
P36A	C4868	P36A-19	19.79	7/20/2005	2 U	2 U
P36A	C4868	P36A-23	23.07	7/20/2005	28	24
P36A	C4868	P36A-26	26.35	7/20/2005	3	3
P36A	C4868	P36A-29A	29.63	7/20/2005	3	2
P36A	C4868	P36A-29B	29.63	7/20/2005	3	2
P36A	C4868	P36A-33	33.07	7/20/2005	2	2
P36A	C4868	P36A-34A	34.71	7/20/2005	6	3
P36A	C4868	P36A-34B	34.71	7/20/2005	6	3

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P36B	C4869	P36B-29	29.63	7/20/2005	2	7
P36B	C4869	P36B-33	33.07	7/20/2005	2 U	2 U
P36B	C4869	P36B-36	36.19	7/20/2005	2 U	2 U
P36B	C4869	P36B-37A	37.01	7/20/2005	2 U	2
P36B	C4869	P36B-37B	37.01	7/20/2005	2 U	2
P37A	C4878	P37A-3	3.55	7/22/2005	2 U	7
P37A	C4878	P37A-6	6.83	7/22/2005	2 U	4
P37A	C4878	P37A-10	10.11	7/22/2005	2 U	3
P37A	C4878	P37A-13	13.39	7/22/2005	2	5
P37A	C4878	P37A-16	16.67	7/22/2005	2 U	4
P37A	C4878	P37A-19	19.95	7/22/2005	2 U	3
P37A	C4878	P37A-23	23.23	7/22/2005	2 U	3
P37A	C4878	P37A-26	26.51	7/22/2005	2 U	3
P37A	C4878	P37A-29	29.63	7/22/2005	2 U	3
P37A	C4878	P37A-32	32.91	7/22/2005	2 U	3
P37A	C4878	P37A-36	36.19	7/22/2005	2 U	5
P37A	C4878	P37A-39	39.31	7/22/2005	2 U	3
P37A	C4878	P37A-42	42.75	7/22/2005	2 U	7
P37A	C4878	P37A-46	46.03	7/22/2005	2 U	11
P37A	C4878	P37A-49	49.31	7/22/2005	3	4
P37A	C4878	P37A-52	52.59	7/22/2005	2	9
P37A	C4878	P37A-55	55.87	7/22/2005	3	6
P37A	C4878	P37A-59	59.16	7/22/2005	3	9
P37A	C4878	P37A-61A	61.27	7/22/2005	4	6
P37A	C4878	P37A-61B	61.27	7/22/2005	4	6
P38A	C4879	P38A-3	3.55	7/25/2005	6	12
P38A	C4879	P38A-5	5.02	7/25/2005	2 U	5
P38A	C4879	P38A-6A	6.01	7/25/2005	2 U	4
P38A	C4879	P38A-6B	6.83	7/25/2005	2 U	3
P38A	C4879	P38A-10	10.11	7/25/2005	2 U	3
P38A	C4879	P38A-13	13.39	7/25/2005	2 U	234
P38A	C4879	P38A-16	16.67	7/25/2005	2 U	8
P38A	C4879	P38A-19	19.95	7/25/2005	2 U	3
P38A	C4879	P38A-23	23.23	7/25/2005	2 U	3
P38A	C4879	P38A-26	26.51	7/25/2005	2 U	2
P38A	C4879	P38A-29A	29.79	7/25/2005	2 U	2

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P38A	C4879	P38A-29B	29.79	7/25/2005	2 U	2
P38A	C4879	P38A-33	33.07	7/25/2005	2 U	2
P38A	C4879	P38A-36	36.35	7/25/2005	2 U	2 U
P38A	C4879	P38A-39	39.63	7/25/2005	2 U	2 U
P38A	C4879	P38A-42	42.92	7/25/2005	2 U	2 U
P38A	C4879	P38A-46	46.2	7/25/2005	2 U	3
P38A	C4879	P38A-49	49.48	7/25/2005	2 U	3
P38A	C4879	P38A-52	52.76	7/25/2005	2 U	4
P38A	C4879	P38A-56	56.04	7/25/2005	2 U	4
P38A	C4879	P38A-59	59.32	7/25/2005	2	3
P38A	C4879	P38A-62A	62.6	7/25/2005	3	4
P38A	C4879	P38A-62B	62.6	7/25/2005	3	4
P38A	C4879	P38A-66	66.04	7/25/2005	6	7
P38A	C4879	P38A-69	69.33	7/25/2005	4	5
P38A	C4879	P38A-72	72.44	7/25/2005	4	3
P38A	C4879	P38A-75	75.72	7/25/2005	4	3
P38A	C4879	P38A-79	79.17	7/25/2005	6	3
P38A	C4879	P38A-85A	85.24	7/25/2005	13	2 U
P38A	C4879	P38A-85B	85.24	7/25/2005	13	2
P39A	C4880	P39A-3	3.22	7/25/2005	3	8
P39A	C4880	P39A-6	6.5	7/25/2005	2 U	4
P39A	C4880	P39A-9	9.78	7/25/2005	2 U	3
P39A	C4880	P39A-13	13.06	7/25/2005	2 U	3
P39A	C4880	P39A-16	16.34	7/25/2005	2 U	2 U
P39A	C4880	P39A-19	19.62	7/25/2005	2 U	2 U
P39A	C4880	P39A-22	22.9	7/25/2005	2 U	2 U
P39A	C4880	P39A-26	26.18	7/25/2005	2 U	2 U
P39A	C4880	P39A-29A	29.46	7/25/2005	2 U	2 U
P39A	C4880	P39A-29B	29.46	7/25/2005	2 U	2 U
P39A	C4880	P39A-32	32.75	7/25/2005	2 U	2 U
P39A	C4880	P39A-36B	36.19	7/25/2005	2 U	2 U
P39A	C4880	P39A-36A	36.52	7/25/2005	2 U	2 U
P39A	C4880	P39A-36C	36.52	7/25/2005	2 U	2 U
P39B	C4897	P39B-5	5.02	7/25/2005	2	6
P39B	C4897	P39B-6	6.01	7/25/2005	2 U	3
P40A	C4903	P40A-3	3.55	7/26/2005	2 U	5

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P40A	C4903	P40A-6	6.66	7/26/2005	2 U	3
P40A	C4903	P40A-10	10.11	7/26/2005	2 U	2
P40A	C4903	P40A-13	13.22	7/26/2005	2 U	3
P40A	C4903	P40A-16	16.51	7/26/2005	2 U	2
P40A	C4903	P40A-19	19.79	7/26/2005	2 U	2 U
P40A	C4903	P40A-23	23.07	7/26/2005	2 U	2 U
P40A	C4903	P40A-26	26.35	7/26/2005	2	2 U
P40A	C4903	P40A-29A	29.46	7/26/2005	2	2 U
P40A	C4903	P40A-29B	29.46	7/26/2005	2	2 U
P40A	C4903	P40A-32	32.75	7/26/2005	2	2 U
P40A	C4903	P40A-36	36.03	7/26/2005	2	2 U
P40A	C4903	P40A-39	39.31	7/26/2005	2	2 U
P40A	C4903	P40A-42	42.42	7/26/2005	2	2 U
P40A	C4903	P40A-45	45.7	7/26/2005	3	2 U
P40A	C4903	P40A-48	48.82	7/26/2005	2 U	3
P40A	C4903	P40A-55	55.05	7/26/2005	2 U	3
P40A	C4903	P40A-58	58.01	7/26/2005	2	7
P40A	C4903	P40A-61A	61.45	7/26/2005	2 U	5
P40A	C4903	P40A-61B	61.94	7/26/2005	2 U	3
P41A	C4908	P41A-2	2.89	7/28/2005	4	8
P41A	C4908	P41A-5	5.02	7/28/2005	2 U	3
P41A	C4908	P41A-6A	6.01	7/28/2005	2 U	2
P41A	C4908	P41A-6B	6.17	7/28/2005	2 U	2
P41A	C4908	P41A-9	9.45	7/28/2005	2 U	2 U
P41A	C4908	P41A-12	12.57	7/28/2005	2 U	3
P41A	C4908	P41A-15	15.68	7/28/2005	2	2
P41A	C4908	P41A-18	18.97	7/28/2005	2	2 U
P41A	C4908	P41A-22	22.41	7/28/2005	3	2
P41A	C4908	P41A-25	25.53	7/28/2005	3	2 U
P41A	C4908	P41A-28A	28.81	7/28/2005	3	2 U
P41A	C4908	P41A-28B	28.81	7/28/2005	3	2 U
P41A	C4908	P41A-32	32.09	7/28/2005	3	2 U
P41A	C4908	P41A-35	35.21	7/28/2005	3	2 U
P41A	C4908	P41A-38	38.65	7/28/2005	3	3
P41A	C4908	P41A-39A	39.47	7/28/2005	4	2
P41A	C4908	P41A-39B	39.47	7/28/2005	4	2

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Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P41A	C4908	P41A-40	40.78	7/28/2005	4	5
P41B	C4909	P41B-40	40.78	7/28/2005	4	5
P42A	C4910	P42A-3	3.22	7/28/2005	2 U	3
P42A	C4910	P42A-5	5.02	7/28/2005	2 U	2
P42A	C4910	P42A-6B	6.01	7/28/2005	2 U	2 U
P42A	C4910	P42A-6A	6.33	7/28/2005	2 U	2 U
P42A	C4910	P42A-9	9.62	7/28/2005	2 U	3
P42A	C4910	P42A-12	12.9	7/28/2005	2 U	2 U
P42A	C4910	P42A-16	16.01	7/28/2005	2 U	2 U
P42A	C4910	P42A-19	19.29	7/28/2005	2 U	2 U
P42A	C4910	P42A-25	25.86	7/28/2005	2 U	2 U
P42A	C4910	P42A-28A	28.97	7/28/2005	2 U	2 U
P42A	C4910	P42A-28B	28.97	7/28/2005	2 U	2 U
P42A	C4910	P42A-32A	32.25	7/28/2005	2 U	2 U
P42A	C4910	P42A-32B	32.57	7/28/2005	2 U	2 U
P42A	C4910	P42A-35	35.86	7/28/2005	2 U	2 U
P42A	C4910	P42A-39	39.14	7/28/2005	2 U	2 U
P42A	C4910	P42A-42	42.42	7/28/2005	2 U	2 U
P42A	C4910	P42A-45	45.7	7/28/2005	2 U	2 U
P42A	C4910	P42A-49	49.48	7/28/2005	2 U	2 U
P42A	C4910	P42A-52	52.59	7/28/2005	2 U	2 U
P42A	C4910	P42A-55	55.71	7/28/2005	2 U	2 U
P42A	C4910	P42A-58	58.99	7/28/2005	3	4
P42A	C4910	P42A-62A	62.11	7/28/2005	2	3
P42A	C4910	P42A-62B	62.11	7/28/2005	2	3
P42A	C4910	P42A-65A	65.22	7/28/2005	2	2
P42A	C4910	P42A-65B	65.22	7/28/2005	2	2
P43A	C4875	P43A-3	3.22	7/22/2005	2 U	5
P43A	C4875	P43A-5	5.02	7/22/2005	2 U	4
P43A	C4875	P43A-6A	6.01	7/22/2005	2 U	2 U
P43A	C4875	P43A-6C	6.01	7/22/2005	2 U	2 U
P43A	C4875	P43A-6B	6.5	7/22/2005	2 U	4
P43A	C4875	P43A-9	9.94	7/22/2005	2 U	2 U
P43A	C4875	P43A-13	13.22	7/22/2005	2 U	2 U
P43A	C4875	P43A-16	16.51	7/22/2005	2 U	2 U
P43A	C4875	P43A-19	19.79	7/22/2005	2 U	2 U

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P43A	C4875	P43A-23	23.07	7/22/2005	2 U	2 U
P43A	C4875	P43A-26	26.35	7/22/2005	2 U	2 U
P43A	C4875	P43A-29A	29.63	7/22/2005	2 U	2 U
P43A	C4875	P43A-29B	29.63	7/22/2005	2 U	2 U
P43A	C4875	P43A-32	32.91	7/22/2005	2 U	2 U
P43A	C4875	P43A-36	36.19	7/22/2005	2 U	2 U
P43A	C4875	P43A-39	39.47	7/22/2005	2 U	2 U
P43A	C4875	P43A-42	42.75	7/22/2005	2 U	2 U
P43A	C4875	P43A-46	46.03	7/22/2005	2 U	2 U
P43A	C4875	P43A-49	49.31	7/22/2005	2 U	2 U
P43A	C4875	P43A-52	52.59	7/22/2005	2 U	2 U
P43A	C4875	P43A-55	55.87	7/22/2005	2 U	2 U
P43A	C4875	P43A-59	59.32	7/22/2005	2 U	2 U
P43A	C4875	P43A-62A	62.6	7/22/2005	2 U	2 U
P43A	C4875	P43A-62B	62.6	7/22/2005	2 U	2 U
P43A	C4875	P43A-66	66.05	7/22/2005	2 U	2 U
P43A	C4875	P43A-69	69.65	7/22/2005	2 U	2 U
P43A	C4875	P43A-72	72.93	7/22/2005	2 U	2 U
P43A	C4875	P43A-76	76.22	7/22/2005	2 U	2 U
P43A	C4875	P43A-77A	77.36	7/22/2005	2 U	2 U
P43A	C4875	P43A-77B	77.36	7/22/2005	2 U	2 U
P44A	C4898	P44A-3	3.22	7/25/2005	2 U	3
P44A	C4898	P44A-5	5.02	7/25/2005	2 U	2
P44A	C4898	P44A-6A	6.01	7/25/2005	2 U	2 U
P44A	C4898	P44A-6B	6.5	7/25/2005	2 U	2 U
P44A	C4898	P44A-9	9.78	7/25/2005	2 U	2 U
P44A	C4898	P44A-13	13.06	7/25/2005	2 U	2 U
P44A	C4898	P44A-16	16.34	7/25/2005	2 U	2 U
P44A	C4898	P44A-19	19.62	7/25/2005	2 U	2 U
P44A	C4898	P44A-22	22.9	7/25/2005	2 U	2 U
P44A	C4898	P44A-26	26.18	7/25/2005	2 U	2 U
P44A	C4898	P44A-29	29.46	7/25/2005	2 U	2 U
P44A	C4898	P44A-32	32.75	7/25/2005	2 U	2 U
P44A	C4898	P44A-36	36.03	7/25/2005	2 U	2 U
P44A	C4898	P44A-39	39.31	7/25/2005	2 U	2 U
P44A	C4898	P44A-42	42.75	7/25/2005	2 U	3

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Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P44A	C4898	P44A-46	46.03	7/25/2005	2 U	2 U
P44A	C4898	P44A-49	49.31	7/25/2005	2 U	2 U
P44A	C4898	P44A-52	52.76	7/25/2005	2 U	2 U
P44A	C4898	P44A-56	56.04	7/25/2005	2	2 U
P44A	C4898	P44A-59	59.48	7/25/2005	4	2
P44A	C4898	P44A-62A	62.76	7/25/2005	5	3
P44A	C4898	P44A-62B	62.76	7/25/2005	5	4
P44A	C4898	P44A-66	66.04	7/25/2005	5	2 U
P44A	C4898	P44A-69A	69.33	7/25/2005	8	2 U
P44A	C4898	P44A-69B	69.33	7/25/2005	8	2 U
P44A	C4898	P44A-69C	69.33	7/25/2005	8	2
P45A	C4899	P45A-3	3.55	7/25/2005	2 U	5
P45A	C4899	P45A-5	5.19	7/25/2005	2 U	3
P45A	C4899	P45A-6B	6.01	7/25/2005	2 U	2 U
P45A	C4899	P45A-6A	6.83	7/25/2005	2 U	2
P45A	C4899	P45A-10	10.11	7/25/2005	2 U	2 U
P45A	C4899	P45A-13	13.39	7/25/2005	2 U	2 U
P45A	C4899	P45A-16	16.67	7/25/2005	2 U	2 U
P45A	C4899	P45A-19	19.95	7/25/2005	2 U	2 U
P45A	C4899	P45A-23	23.23	7/25/2005	2 U	2 U
P45A	C4899	P45A-26	26.51	7/25/2005	2 U	2 U
P45A	C4899	P45A-29A	29.79	7/25/2005	2 U	2 U
P45A	C4899	P45A-29B	29.79	7/25/2005	2 U	2 U
P45A	C4899	P45A-33	33.07	7/25/2005	2 U	2 U
P45A	C4899	P45A-36	36.52	7/25/2005	2 U	3
P45A	C4899	P45A-39	39.8	7/25/2005	2 U	3
P45A	C4899	P45A-43	43.08	7/25/2005	2 U	2
P45A	C4899	P45A-45A	45.21	7/25/2005	2 U	2 U
P45A	C4899	P45A-45B	45.21	7/25/2005	2 U	2 U
P45B	C4900	P45B-47	47.02	7/26/2005	3	5
P46A	C4876	P46A-3	3.22	7/22/2005	2 U	3
P46A	C4876	P46A-5	5.02	7/22/2005	2 U	2
P46A	C4876	P46A-6	6.66	7/22/2005	2 U	2 U
P46A	C4876	P46A-9	9.94	7/22/2005	2 U	2 U
P46A	C4876	P46A-13	13.06	7/22/2005	2 U	2 U
P46A	C4876	P46A-19	19.62	7/22/2005	2 U	2 U

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P46A	C4876	P46A-22	22.9	7/22/2005	2 U	2 U
P46A	C4876	P46A-29A	29.46	7/22/2005	7	7
P46A	C4876	P46A-29B	29.46	7/22/2005	7	8
P46A	C4876	P46A-32	32.75	7/22/2005	4	4
P46A	C4876	P46A-35A	35.04	7/22/2005	5	4
P46A	C4876	P46A-35B	35.04	7/22/2005	5	4
P46B	C4877	P46B-6	6.01	7/22/2005	6	7
P46B	C4877	P46B-16	16.01	7/22/2005	7	4
P46B	C4877	P46B-26	26.02	7/22/2005	9	5
P46B	C4877	P46B-36	36.19	7/22/2005	5	5
P46B	C4877	P46B-37	37.34	7/22/2005	5	5
P48A	C4902	P48A-3	3.87	7/26/2005	2 U	4
P48A	C4902	P48A-5	5.02	7/26/2005	2 U	3
P48A	C4902	P48A-6	6.01	7/26/2005	2 U	2
P48A	C4902	P48A-7	7.15	7/26/2005	2 U	2
P48A	C4902	P48A-10	10.44	7/26/2005	2 U	2
P48A	C4902	P48A-13	13.72	7/26/2005	2 U	2
P48A	C4902	P48A-17	17	7/26/2005	2 U	3
P48A	C4902	P48A-20	20.28	7/26/2005	2 U	2
P48A	C4902	P48A-23	23.56	7/26/2005	2	2
P48A	C4902	P48A-26	26.84	7/26/2005	4	2
P48A	C4902	P48A-30A	30.28	7/26/2005	8	3
P48A	C4902	P48A-30B	30.28	7/26/2005	8	3
P48A	C4902	P48A-33	33.73	7/26/2005	8	2
P48A	C4902	P48A-37	37.01	7/26/2005	9	3
P48A	C4902	P48A-40	40.29	7/26/2005	7	3
P48A	C4902	P48A-43	43.74	7/26/2005	6	2
P48A	C4902	P48A-47	47.18	7/26/2005	8	3
P48A	C4902	P48A-50	50.3	7/26/2005	9	4
P48A	C4902	P48A-53	53.42	7/26/2005	11	4
P48A	C4902	P48A-56	56.86	7/26/2005	10	4
P48A	C4902	P48A-59	59.98	7/26/2005	12	6
P48A	C4902	P48A-63	63.26	7/26/2005	14	4
P48A	C4902	P48A-66	66.54	7/26/2005	10	4
P48A	C4902	P48A-69	69.82	7/26/2005	16	6
P48A	C4902	P48A-72	72.11	7/26/2005	18	5

Table 3-8. Active Soil Vapor Analytical Results from Cone Penetrometer Investigation at Release Sites. (27 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (ppmv)	CF (ppmv)
P49A	C4913	P49A-3	3.22	8/1/2005	2 U	32
P49A	C4913	P49A-5	5.02	8/1/2005	2 U	35
P49A	C4913	P49A-6A	6.01	8/1/2005	2 U	9
P49A	C4913	P49A-6B	6.33	8/1/2005	2 U	8
P49A	C4913	P49A-9	9.45	8/1/2005	2 U	7
P49A	C4913	P49A-12	12.9	8/1/2005	2 U	9
P49A	C4913	P49A-16	16.18	8/1/2005	2 U	11
P49A	C4913	P49A-19	19.62	8/1/2005	3	5
P49A	C4913	P49A-23	23.07	8/1/2005	4	3
P49A	C4913	P49A-26	26.84	8/1/2005	4	8
P49A	C4913	P49A-29A	29.96	8/1/2005	6	5
P49A	C4913	P49A-29B	29.96	8/1/2005	6	5
P49A	C4913	P49A-33	33.4	8/1/2005	6	7
P49A	C4913	P49A-36	36.85	8/1/2005	8	5
P49A	C4913	P49A-39	39.96	8/1/2005	10	4
P49A	C4913	P49A-42A	42.75	8/1/2005	12	2 U
P49A	C4913	P49A-42B	42.75	8/1/2005	12	2 U
P49B	C4914	P49B-40	40.45	8/1/2005	9	9
P49B	C4914	P49B-43	43.9	8/1/2005	6	4
P49B	C4914	P49B-47	47.34	8/1/2005	4	3
P49B	C4914	P49B-49	49.15	8/1/2005	3	2

CF = chloroform.

CT = carbon tetrachloride.

ID = identification (number).

Table 3-9. Soil Analytical Results from CPT Investigation at Release Sites. (3 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT ($\mu\text{g}/\text{kg}$)	CF ($\mu\text{g}/\text{kg}$)	MC ($\mu\text{g}/\text{kg}$)	CM ($\mu\text{g}/\text{kg}$)
P8B	C4777	P8B-27	27	4/28/2005	2.5 U	2.5 U	2.5 U	2.5 U
P8B	C4777	P8B-32	32	4/28/2005	2.5 U	2.5 U	2.5 U	2.5 U
P8B	C4777	P8B-36	36	4/28/2005	2.5 U	2.5 U	2.5 U	2.5 U
P8B	C4777	P8B-40	40	4/28/2005	2.5 U	2.5 U	2.5 U	2.5 U
P9D	C4788	P9D-41	41	5/3/2005	2.5 U	2.5 U	2.5 U	2.5 U
P9F	C4790	P9F-36	36	5/3/2005	2.5 U	2.5 U	2.5 U	2.5 U
P10B	C4791	P10B-5	5	5/3/2005	2.5 U	2.5 U	2.5 U	2.5 U
P10B	C4791	P10B-6	6	5/3/2005	2.5 U	2.5 U	2.5 U	2.5 U
P11B	C4795	P11B-5	5	5/4/2005	2.5 U	2.5 U	2.5 U	2.5 U
P11B	C4795	P11B-33	33	5/4/2005	2.5 U	2.5 U	2.5 U	2.5 U
P12B	C4776	P12B-13	13	4/26/2005	2.5 U	2.5 U	2.5 U	2.5 U
P12B	C4776	P12B-32	32	4/27/2005	2.5 U	2.5 U	2.5 U	2.5 U
P12C	C4796	P12C-5	5	5/4/2005	2.5 U	2.5 U	2.5 U	2.5 U
P13B	C4803	P13B-36	36	5/6/2005	2.5 U	2.5 U	2.5 U	2.5 U
P13C	C4804	P13C-51	51	5/6/2005	2.5 U	2.5 U	2.5 U	2.5 U
P14C	C4797	P14C-35	35	5/4/2005	2.5 U	2.5 U	2.5 U	2.5 U
P15B	C4798	P15B-12	12	5/4/2005	2.5 U	2.5 U	2.5 U	2.5 U
P15B	C4798	P15B-30	30	5/4/2005	2.5 U	2.5 U	2.5 U	2.5 U
P15C	C4807	P15C-51	51	5/6/2005	2.5 U	2.5 U	2.5 U	2.5 U
P17C	C4860	P17C-24	24	5/19/2005	2.5 U	2.5 U	10	2.5 U
P17E	C4862	P17E-51	51	5/19/2005	2.5 U	2.5 U	10	2.5 U
P18F	C4785	P18F-31	31	5/3/2005	2.5 U	2.5 U	2.5 U	2.5 U
P19D	C4774	P19D-31	31	4/26/2005	2.5 U	2.5 U	2.5 U	2.5 U
P21D	C4783	P21D-35	35	5/2/2005	2.5 U	2.5 U	2.5 U	2.5 U
P22C	C4799	P22C-28	28	5/5/2005	2.5 U	2.5 U	2.5 U	2.5 U

Table 3-9. Soil Analytical Results from CPT Investigation at Release Sites. (3 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT (µg/kg)	CF (µg/kg)	MC (µg/kg)	CM (µg/kg)
P22C	C4799	P22C-38	38	5/5/2005	2.5 U	2.5 U	2.5 U	2.5 U
P22D	C4800	P22D-49	49	5/5/2005	2.5 U	2.5 U	2.5 U	2.5 U
P22E	C4801	P22E-53	53	5/5/2005	2.5 U	2.5 U	2.5 U	2.5 U
P22F	C4802	P22F-60	60 ^a	5/5/2005	6 U	6 U	10 B	13 U
P23D	C4780	P23D-37	37	5/2/2005	2.5 U	2.5 U	2.5 U	2.5 U
P23F	C4782	P23F-31	31	5/2/2005	2.5 U	2.5 U	2.5 U	2.5 U
P24C	C4812	P24C-42	42	5/17/2005	2.5 U	2.5 U	17	2.5 U
P29C	C4917	P29C-6	6	8/2/2005	2.5 U	2.5 U	2.5 U	2.5 U
P29C	C4917	P29C-60	60	8/2/2005	5 U	5 U	8 B	10 U
P29D	C4918	P29D-51	51	8/2/2005	2.5 U	2.5 U	2.5 U	2.5 U
P29E	C4919	P29E-53	53	8/2/2005	2.5 U	2.5 U	2.5 U	2.5 U
P30C	C4925	P30C-6	6	8/3/2005	2.5 U	2.5 U	2.5 U	2.5 U
P30C	C4925	P30C-33	33	8/3/2005	2.5 U	2.5 U	2.5 U	2.5 U
P30D	C4932	P30D-76	76	8/4/2005	4 U	4 U	6 B	9 U
P30J	C4960	P30J-58	58	8/17/2005	6 U	6 U	11 U	11 U
P30L	C4962	P30L-60	60	8/18/2005	4 U	4 U	9 U	9 U
P31B	C4926	P31B-6	6	8/3/2005	2.5 U	2.5 U	2.5 U	2.5 U
P31C	C4933	P31C-40	40	8/4/2005	5 U	5 U	5 B	10 U
P32C	C4927	P32C-6	6	8/3/2005	2.5 U	2.5 U	2.5 U	2.5 U
P32C	C4927	P32C-48	48	8/3/2005	2.5 U	2.5 U	2.5 U	2.5 U
P32E	C4929	P32E-67	67	8/4/2005	2.5 U	2.5 U	2.5 U	2.5 U
P33C	C4936	P33C-6	6	8/5/2005	6 U	6 U	7 B	11 U
P33C	C4936	P33C-34	34	8/5/2005	2.5 U	2.5 U	2.5 U	2.5 U
P34C	C4924	P34C-6	6	8/3/2005	2.5 U	2.5 U	2.5 U	2.5 U
P34C	C4924	P34C-55	55	8/3/2005	2.5 U	2.5 U	2.5 U	2.5 U

Table 3-9. Soil Analytical Results from CPT Investigation at Release Sites. (3 Pages)

Sample Station	Well ID	Sample Number	Sample Depth (ft bgs)	Sample Date	CT ($\mu\text{g}/\text{kg}$)	CF ($\mu\text{g}/\text{kg}$)	MC ($\mu\text{g}/\text{kg}$)	CM ($\mu\text{g}/\text{kg}$)
P35B	C4915	P35B-6	6	8/1/2005	2.5 U	2.5 U	2.5 U	2.5 U
P35B	C4915	P35B-47	47	8/1/2005	2.5 U	2.5 U	2.5 U	2.5 U
P35C	C4916	P35C-85	85	8/2/2005	2.5 U	2.5 U	2.5 U	2.5 U
P36C	C4922	P36C-6	6	8/2/2005	2.5 U	2.5 U	2.5 U	2.5 U
P36C	C4922	P36C-30	30	8/3/2005	2.5 U	2.5 U	2.5 U	2.5 U
P38B	C4935	P38B-83	83	8/5/2005	6 U	6 U	7 B	13 U
P44B	C4930	P44B-68	68	8/4/2005	2.5 U	2.5 U	2.5 U	2.5 U
P48B	C4931	P48B-73	73	8/4/2005	5 U	5 U	6 B	10 U
P49J	C4946	P49J-34	34	8/16/2005	6 U	6 U	11 U	11 U
P49L	C4957	P49L-42	42	8/12/2005	6 U	6 U	11 U	11 U

CT = carbon tetrachloride.

CF = chloroform.

ID = identification (number).

MC = methylene chloride.

CM = chloromethane.

NT = non-tested.

U = analyzed for but not detected. Value reported is the reporting limit.

J = estimated value below the laboratory's reported quantitation level.

From DOE/RL-2006-58, *Carbon Tetrachloride DNAPL Source Term Characterization Report*, and D&D-30838, *200-PW-1 Operable Unit Report on Step II Sampling and Analysis of the Dispersed Carbon Tetrachloride Vadose Zone Plume*.

Table 3-10. Results of Enhanced Access Penetration System Active Soil Vapor Sampling. (4 Pages)

Sample Location	HEIS Number	Sample Date	Sample Depth	CCl ₄ (ppmv)	CCl ₄ Qualifier	TCM (ppmv)	TCM Qualifier	DCM (ppmv)	DCM Qualifier
C4883	B1F5W7	8/10/2005	15	1	U	1.66		3.29	
C4883	B1F5W8	8/10/2005	15	1	U	1.89		2.9	
C4883	B1F5X0	8/10/2005	25	1	U	1.25		1.64	
C4883	B1F5W9	8/10/2005	25	1	U	1.13		1.8	
C4883	B1F5X2	8/10/2005	41	1	U	1.13		1	U
C4883	B1F5X1	8/10/2005	41	1	U	1.16		1	U
C4883	B1F5Y2	8/15/2005	50	1	U	1.46		1.46	
C4883	B1F5Y1	8/15/2005	50	1	U	1.8		1	U
C4883	B1F5Y0	8/15/2005	75	1	U	1.59		1.34	
C4883	B1F5X9	8/15/2005	75	1	U	1.76		1.12	
C4883	B1F5X7	8/15/2005	100	1	U	1.83		1.28	
C4883	B1F5X8	8/15/2005	100	1	U	2.1		1.3	
C4883	B1F5X6	8/15/2005	125	1	U	2.81		1.78	
C4883	B1F5X5	8/15/2005	125	1	U	3.03		1.78	
C4883	B1F5X4	8/12/2005	150	1	U	1	U	1	U
C4883	B1F5X3	8/12/2005	150	1	U	1	U	1	U
C4884	B1F5Y3	8/4/2005	15	1	U	3.24		3.17	
C4884	B1F5Y4	8/4/2005	15	1	U	3.22		3.26	
C4884	B1F5Y6	8/4/2005	25	1	U	2.02		2.82	
C4884	B1F5Y5	8/4/2005	25	1	U	2.06		3.05	
C4884	B1F5Y8	8/4/2005	50	1	U	2.25		2.8	
C4884	B1F5Y7	8/4/2005	50	1	U	1.95		3.14	
C4884	B1F605	8/10/2005	75	1	U	1.65		1	U
C4884	B1F606	8/10/2005	75	1	U	1.42		1	U
C4884	B1F603	8/10/2005	100	1	U	1.3		1	U

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Table 3-10. Results of Enhanced Access Penetration System Active Soil Vapor Sampling. (4 Pages)

Sample Location	HEIS Number	Sample Date	Sample Depth	CCl ₄ (ppmv)	CCl ₄ Qualifier	TCM (ppmv)	TCM Qualifier	DCM (ppmv)	DCM Qualifier
C4884	B1F604	8/10/2005	100	1	U	1.22		1	U
C4884	B1F602	8/8/2005	125	1	U	1.73		4.46	
C4884	B1F601	8/8/2005	125	1	U	1.26		5.34	
C4884	B1F600	8/8/2005	150	9.06		1.79		6.16	
C4884	B1F5Y9	8/8/2005	150	9.14		1.93		5.17	
C4885	B1F608	7/26/2005	15	1	U	3.99		13.6	
C4885	B1F607	7/26/2005	15	1	U	3.91		13	
C4885	B1F609	7/26/2005	25	1	U	2.8		10.7	
C4885	B1F610	7/26/2005	25	1	U	3.06		10.8	
C4885	B1F612	7/26/2005	50	1	U	1.4		3.89	
C4885	B1F611	7/26/2005	50	1	U	1.64		3.87	
C4885	B1F614	8/3/2005	75	1	U	1.49		1	U
C4885	B1F613	8/3/2005	75	1	U	1.55		1	U
C4885	B1F618	8/3/2005	100	1	U	1	U	1	U
C4885	B1F617	8/3/2005	100	1	U	1	U	1	U
C4885	B1F616	8/3/2005	100	1	U	1	U	1	U
C4885	B1F615	8/3/2005	100	1	U	1	U	1	U
C4885	B1F620	8/3/2005	125	1	U	1	U	1	U
C4885	B1F621	8/3/2005	125	1	U	1	U	1	U
C4885	B1F622	8/3/2005	125	1	U	1	U	1.06	
C4885	B1F619	8/3/2005	125	1	U	1	U	1	U
C4885	B1F623	8/3/2005	150	1	U	1	U	1	U
C4885	B1F624	8/3/2005	150	1	U	1	U	1	U
C4885	B1F625	8/3/2005	150	1	U	1.07		1	U
C4885	B1F626	8/3/2005	150	1	U	1.07		1	U

Table 3-10. Results of Enhanced Access Penetration System Active Soil Vapor Sampling. (4 Pages)

Sample Location	HEIS Number	Sample Date	Sample Depth	CCL ₄ (ppmv)	CCL ₄ Qualifier	TCM (ppmv)	TCM Qualifier	DCM (ppmv)	DCM Qualifier
C4886	B1F628	8/16/2005	15	1	U	2.78		5.47	
C4886	B1F627	8/16/2005	15	1	U	2.95		4.94	
C4886	B1F630	8/16/2005	25	1	U	3.2		4.36	
C4886	B1F629	8/16/2005	25	1	U	3.18		4.43	
C4886	B1F632	8/16/2005	50	1	U	3.01		3.71	
C4886	B1F631	8/16/2005	50	1	U	3.32		3.54	
C4886	B1F633	8/16/2005	75	7.34		2.49		8.32	
C4886	B1F634	8/16/2005	75	7.31		2.78		8.35	
C4886	B1F640	8/19/2005	100	1	U	1	U	1.52	
C4886	B1F639	8/19/2005	100	1	U	1	U	1.49	
C4886	B1F638	8/19/2005	125	1	U	1	U	1.19	
C4886	B1F637	8/19/2005	125	1	U	1	U	1	U
C4886	B1F636	8/19/2005	150	1	U	1	U	1.51	
C4886	B1F635	8/19/2005	150	1	U	1	U	1	U
C4890	B1F642	6/27/2005	15	1	U	1.71		1.52	
C4890	B1F641	6/27/2005	15	1	U	1.63		1.43	
C4890	B1F643	6/27/2005	25	1	U	1.65		2.03	
C4890	B1F644	6/27/2005	25	1	U	1.73		2.03	
C4890	B1F646	6/27/2005	50	1	U	2.97		5.5	
C4890	B1F645	6/27/2005	50	1	U	3.11		5.52	
C4890	B1F647	7/12/2005	75	1	U	1.87		3.12	
C4890	B1F648	7/12/2005	100	1	U	1.06		1.72	
C4890	B1F649	7/12/2005	125	1	U	1.33		1.64	
C4890	B1F650	7/12/2005	150	1	U	1	U	1.26	
C4890	B1F651	7/12/2005	175	1	U	1.92		1	U

Table 3-10. Results of Enhanced Access Penetration System Active Soil Vapor Sampling. (4 Pages)

Sample Location	HEIS Number	Sample Date	Sample Depth	CCl ₄ (ppmv)	CCl ₄ Qualifier	TCM (ppmv)	TCM Qualifier	DCM (ppmv)	DCM Qualifier
C4890	B1F652	7/12/2005	200	1	U	1.69		1	U
C4890	B1F653	7/12/2005	215	1.89		2.74		3.67	
C4891	B1F654	7/13/2005	15	1	U	3.93		1	U
C4891	B1F655	7/13/2005	25	1	U	3.93		1	U
C4891	B1F656	7/14/2005	50	1	U	6.45		0.66	
C4891	B1F658	7/20/2005	75	1	U	2.94		3.76	
C4891	B1F657	7/20/2005	75	1	U	2.98		3.67	
C4891	B1F660	7/25/2005	100	1	U	1.31		2.14	
C4891	B1F659	7/25/2005	100	1	U	1.49		1.83	
C4891	B1F662	7/25/2005	125	1	U	4.39		4.91	
C4891	B1F661	7/25/2005	125	1	U	4.39		4.72	
C4891	B1F663	7/25/2005	150	1	U	6.16		3.86	
C4891	B1F664	7/25/2005	150	1	U	6.17		3.91	

CCl₄ = carbon tetrachloride.

DCM = methylene chloride.

NT = non-tested.

TCM = chloroform.

U = analyzed for but not detected. Value reported is the reporting limit.

Table 3-11 Soil Vapor Sampling Results at the 216-Z-7 Borehole (C4183). (2 Pages)

Date	Sample Depth Start (ft)	Sample Depth End (ft)	Sample Time	Carbon Tetrachloride (ppmv)	Chloroform (ppmv)	Methyl Ethyl Ketone (ppmv)	Methylene Chloride (ppmv)
3/1/2005	75.5	76	8:35	<1.0	2.52	2.90	<1.0
--	--	--	8:35	<1.0	2.70	2.70	<1.0
--	--	--	8:37	<1.0	2.45	<1.0	<1.0
--	--	--	8:37	<1.0	2.59	<1.0	<1.0
3/2/2005	--	--	--	--	--	--	--
3/3/2005	96.5	97	8:15	<1.0	2.27	2.13	<1.0
--	--	--	8:15	<1.0	2.11	2.11	<1.0
--	--	--	8:17	<1.0	1.99	2.02	<1.0
--	--	--	8:17	<1.0	1.98	2.03	<1.0
3/4/2005	117.5	118	14:18	3.18	2.64	2.20	4.02
--	--	--	14:18	3.05	2.56	2.13	3.9
--	--	--	14:20	3.31	2.79	2.37	4.00
--	--	--	14:20	3.34	2.75	2.43	3.95
3/7/2005	--	--	--	--	--	--	--
3/8/2005	149.4	150	14:12	<1.0	<1.0	1.31	1.87
--	--	--	14:12	<1.0	<1.0	1.29	1.73
--	--	--	14:16	<1.0	<1.0	1.39	2.04
--	--	--	14:16	<1.0	<1.0	1.54	2.32
3/9/2005	--	--	--	--	--	--	--
3/10/2005	--	--	--	--	--	--	--
3/14/2005	170	174.5	14:58	<1.0	<1.0	<1.0	<1.0
--	--	--	14:58	<1.0	<1.0	<1.0	<1.0
--	--	--	14:59	<1.0	<1.0	<1.0	<1.0
--	--	--	14:59	<1.0	<1.0	<1.0	<1.0
3/15/2005	--	--	--	--	--	--	--

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Table 3-11 Soil Vapor Sampling Results at the 216-Z-7 Borehole (C4183). (2 Pages)

Date	Sample Depth Start (ft)	Sample Depth End (ft)	Sample Time	Carbon Tetrachloride (ppmv)	Chloroform (ppmv)	Methyl Ethyl Ketone (ppmv)	Methylene Chloride (ppmv)
3/16/2005	--	--	--	--	--	--	--
3/17/2005	--	--	--	--	--	--	--
3/18/2005	195	198.5	8:56	3.28	1.12	<1.0	<1.0
--	--	--	8:56	3.32	<1.0	<1.0	<1.0
--	--	--	8:57	3.32	<1.0	<1.0	<1.0
--	--	--	8:57	3.25	<1.0	<1.0	<1.0
3/21/2005	--	--	--	--	--	--	--
3/22/2005	--	--	--	--	--	--	--
3/23/2005	Final Depth	--	--	--	--	--	--
3/24/2005	219	222	10:31	12.1	2.67	<1.0	1.51
--	--	--	10:31	12.2	2.04	<1.0	2.35
--	--	--	10:31	12.1	1.98	<1.0	3.57
--	--	--	10:31	12.2	1.88	<1.0	2.59
--	--	--	10:35	11.9	1.86	<1.0	2.37
--	--	--	10:35	12.0	1.46	<1.0	2.86
--	--	--	10:36	12.1	1.48	<1.0	2.63
--	--	--	10:36	11.8	1.55	<1.0	2.66

ppmv = parts per million by volume.

Modified from D&D-25461, 200-LW-1 and 200-LW-2 Operable Units - Borehole Summary for Boreholes in the 216-S-20, 216-T-28, and 216-Z-7 Cribs, Table 3-2.

Table 3-12. Field Screening Results for Active Soil Vapor Samples Within the PFP Protected Area. (3 Pages)

Location Identification	HEIS Number	Date	Sample Time	Analysis Time	Depth (ft bgs)	Innova 1312 Photoacoustic Multi-gas Analyzer, Serial Number 010-019		
						Carbon Tetrachloride (ppmv)		Chloroform (ppmv)
						"A"	"B"	
C3876	B15JT4	8/19/2003	9:55	11:52	14.0-14.5	-	<1.0	1.70
C3876	B15JT3	8/18/2003	14:25	16:45	23.7-25.0	-	<1.0	1.40
C3876	B15JT2	8/18/2003	14:02	16:40	33.2-34.2	-	<1.0	1.90
C3877	B15JV1	8/20/2003	10:48	11:32	15.0-15.6	-	<1.0	<1.0
C3877	B15JV0	8/20/2003	10:18	11:29	24.4-27.3	-	<1.0	<1.0
C3877	B15JT9	8/20/2003	9:45	11:25	43.6-44.2	-	<1.0	<1.0
C3878	B15JT1	8/18/2003	12:21	12:40	14-14.5	-	<1.0	1.10
C3878	B15JT0	8/18/2003	11:58	12:35	25.0-25.5	-	1.01	<1.0
C3878	B15JR9	8/18/2003	11:22	12:30	43.6	-	1.78	3.20
C3879	B15JT7	8/19/2003	12:33	12:40	13.1-13.8	-	<1.0	<1.0
C3879	B15JT6	8/19/2003	12:05	12:11	25.0-27.0	-	<1.0	<1.0
C3879	B15JT5	8/19/2003	11:40	11:55	40.3-41.1	-	<1.0	1.40
C4059	B15JV4	8/20/2003	14:05	14:16	15.5-17.6	-	<1.0	<1.0
C4059	B15JV3	8/20/2003	13:40	14:14	23.8-24.6	-	<1.0	<1.0
C4059	B15JV2	8/20/2003	13:10	14:11	41.7-42.8	-	<1.0	2.40
C4060	B15LN3	8/22/2003	13:20	13:43	13.5-14.0	-	<1.0	1.62
C4060	B15LN2	8/22/2003	12:55	13:41	25.0-25.5	-	<1.0	1.69
C4060	B15JT8	8/22/2003	11:35	13:38	35.0-35.5	-	<1.0	1.71

Table 3-12. Field Screening Results for Active Soil Vapor Samples Within the PFP Protected Area. (3 Pages)

Location Identification	HEIS Number	Date	Sample Time	Analysis Time	Depth (ft bgs)	Innova 1312 Photoacoustic Multi-gas Analyzer, Serial Number 010-019		
						Carbon Tetrachloride (ppmv)		Chloroform (ppmv)
						"A"	"B"	
C4061	B15LN9	8/25/2003	13:09	13:35	15.5-16.5	-	<1.0	<1.0
C4061	B15LN8	8/25/2003	12:49	13:34	24.0-25.0	-	<1.0	<1.0
C4061	B15LN7	8/25/2003	12:24	13:33	35.5-36.5	-	<1.0	2.48
C4062	B15LP2	8/26/2003	9:47	13:04	14.0-14.7	-	<1.0	<1.0
C4062	B15LP1	8/26/2003	9:29	13:03	24.0-25.0	-	<1.0	<1.0
C4062	B15LP0	8/26/2003	9:07	13:02	30.0-31.0	-	<1.0	<1.0
C4063	B15LP5	8/26/2003	11:33	13:07	13.5-15.3	-	1.41	<1.0
C4063	B15LP4	8/26/2003	11:10	13:06	22.8-23.3	-	2.32	<1.0
C4063	B15LP3	8/26/2003	10:36	13:05	41.4-42.2	-	4.24	<1.0
C4064	B15JV6	8/21/2003	10:18	11:07	14.0-14.5	-	<1.0	1.11
C4064	B15JV5	8/21/2003	9:45	11:04	27.3-28.5	-	<1.0	1.69
C4065	B15LN6	8/25/2003	10:17	13:32	15.0-16.0	-	<1.0	1.21
C4065	B15LN5	8/25/2003	9:57	13:31	22.2-23.2	-	<1.0	1.53
C4065	B15LN4	8/25/2003	9:20	13:30	43.0-44.0	-	1.22	1.76
C4066	B15LN1	8/21/2003	14:05	12:50	14.5-15.0	-	<1.0	<1.0
C4066	B15LN0	8/21/2003	13:40	12:47	24.5-25.5	-	<1.0	<1.0
C4066	B15JV7	8/21/2003	13:10	12:44	39.0-40.0	-	1.33	1.13
C4067	B15LT0	8/28/2003	14:02	14:07	15.5-17.5	-	<1.0	<1.0
C4067	B15LR9	8/28/2003	13:45	13:52	24.3-25.3	-	<1.0	<1.0

Table 3-12. Field Screening Results for Active Soil Vapor Samples Within the PFP Protected Area. (3 Pages)

Location Identification	HEIS Number	Date	Sample Time	Analysis Time	Depth (ft bgs)	Innova 1312 Photoacoustic Multi-gas Analyzer, Serial Number 010-019		
						Carbon Tetrachloride (ppmv)		Chloroform (ppmv)
						"A"	"B"	
C4067	B15LR8	8/28/2003	13:23	13:50	38.0-39.0	-	2.41	3.64
C4068	B15LP8	8/26/2003	13:10	13:55	14.3-14.8	-	<1.0	<1.0
C4068	B15LP7	8/26/2003	13:09	13:34	25.0-26.0	-	<1.0	<1.0
C4068	B15LP6	8/26/2003	13:18	13:08	31.0-32.0	-	<1.0	<1.0
C4136	B15LR4	8/27/2003	14:11	15:42	15.5-16.5	-	<1.0	<1.0
C4136	B15LR3	8/27/2003	13:47	15:40	23.5-25.0	-	<1.0	<1.0
C4136	B15LR2	8/27/2003	13:23	15:39	35.0-36.0	-	<1.0	<1.0
C4137	B15LR1	8/27/2003	10:47	11:02	14.0-14.5	-	<1.0	<1.0
C4137	B15LR0	8/27/2003	10:21	11:00	24.8-25.3	-	<1.0	<1.0
C4137	B15LP9	8/27/2003	10:58	9:55	37.3-38.3	-	<1.0	<1.0
C4138	B15LR7	8/28/2003	12:05	13:07	14.5-15.5	-	<1.0	<1.0
C4138	B15LR6	8/28/2003	11:47	13:05	22.0-25.0	-	<1.0	<1.0
C4138	B15LR5	8/28/2003	11:21	13:02	46.5-47.5	-	1.21	<1.0

HEIS = Hanford Environmental Information System database.

Innova 1312 multi-gas analyzer is a trademark of Innova AirTech Instruments A/S, Ballerup, Denmark.

From D&D-30838, 200-PW-1 Operable Unit Report on Step II Sampling and Analysis of the Dispersed Carbon Tetrachloride Vadose Zone Plume.

Table 3-13. Passive Soil Vapor Sample Results for Carbon Tetrachloride from the 218-W-3A Burial Ground.

Field Sample Point	Sample Number	Sample Installed	Sample Retrieved	CCl ₄ (ng/trap)	Lab Q
T9S-2	B1DDW5	6/30/05	7/5/05	25	U
T9S-3	B1DDW6	6/30/05	7/5/05	25	U
T9S-4	B1DDW7	6/30/05	7/5/05	25	U
T9S-5	B1DDW8	6/30/05	7/5/05	25	U
T9S-6	B1DDW9	6/30/05	7/5/05	25	U
T9S-7	B1DDX0	6/30/05	7/5/05	25	U
T9S-8	B1DDX1	6/30/05	7/5/05	25	U
T9S-9	B1DDX2	6/30/05	7/5/05	163.23	
T9S-9D	B1DDX3	6/30/05	7/5/05	81.42	
T9S-1	B1DDX4	6/30/05	7/5/05	25	U
T9S-10	B1DDX5	6/30/05	7/5/05	25	U
T06-2	B1DDX6	6/30/05	7/5/05	25	U
T06-3	B1DDX7	6/30/05	7/5/05	25	U
T06-4	B1DDX8	6/30/05	7/5/05	25	U
T06-5	B1DDX9	6/30/05	7/5/05	25	U
T06-6	B1DDY0	6/30/05	7/5/05	25	U
T06-7	B1DDY1	6/30/05	7/5/05	25	U
T06-8	B1DDY2	6/30/05	7/5/05	25	U
T06-9	B1DDY3	6/30/05	7/5/05	25.1	
T06-10	B1DDY4	6/30/05	7/5/05	110.5	
T06-10D	B1DDY5	6/30/05	7/5/05	231.08	
T06-11	B1DDY6	6/30/05	7/5/05	25	U
T06-12	B1DDY7	6/30/05	7/5/05	25	U
T06-1	B1DDY8	6/30/05	7/5/05	25	U

U = undetected, value is the laboratory detection limit.

From D&D-30838, 200-PW-1 Operable Unit Report on Step II Sampling and Analysis of the Dispersed Carbon Tetrachloride Vadose Zone Plume.

Table 3-14. Field Screening Results for the Vapor Samples Collected Through the Vent Risers in the 218-W-3A Burial Ground Trenches.

Sample Identifier	HEIS Number	Sample Date	Sample Time	CCl ₄ (ppmv)
T-3S-1	B1DVM2	8/25/05	1330	<0.05
T-3S-2	B1DVM3	8/25/05	1353	<0.05
T-3S-3	B1DVM4	8/25/05	1425	<0.05
T-9S-1	B1DVM5	8/25/05	1440	<0.05
T-05-1	B1DVL6	08/25/05	0950	<0.05
T-05-2	B1DVL7	08/25/05	1042	<0.05
T-05-2 duplicate	B1DVN5	08/25/05	1048	<0.05
T-05-3	B1DVL8	8/25/05	1115	<0.05
T-05-4	B1DVL9	8/25/05	1143	<0.05
T-05-5	B1DVM0	8/25/05	1208	<0.05
T-05-6	B1DVM1	8/25/05	1238	<0.05
T-05-6 duplicate	B1DVN3	8/25/05	1245	<0.05
T-08-1	B1DVM6	09/06/05	1005	<0.05
T-08-1 duplicate	B1DVN4	09/06/05	1012	<0.05
T-08-2	B1DVM7	09/06/05	1050	<0.05
T-08-3	B1DVM8	09/06/05	1120	36
T-08-4	B1DVM9	09/06/05	1220	7
T-08-5	B1DVN0	09/06/05	1320	5
T-08-6	B1DVN1	09/06/05	1345	<0.05
T-08-7	B1DVN2	09/06/05	1415	<0.05

Samples were analyzed using a MIRAN SapphIRe Ambient Air Analyzer, which identifies up to 5 compounds with the highest concentrations in the vapor sample.

MIRAN and the SapphIRe Ambient Air Analyzer are registered trademarks of Thermo Electron Corporation, Franklin, Massachusetts.

From D&D-30838, 200-PW-1 Operable Unit Report on Step II Sampling and Analysis of the Dispersed Carbon Tetrachloride Vadose Zone Plume.

Table 3-15. Results and Evaluation of Groundwater "Hot Spot" Soil Vapor and Groundwater Sampling. (2 Pages)

GW "Hot Spot" for CCl ₄	Associated Potential Release Site	Well	Sample Date	Carbon Tetrachloride						
				Soil Vapor Conc. (ppmv)	Soil Vapor Qualifier	GW Conc. (µg/L)	GW Qualifier	Calculated GW Conc. (µg/L) *	Vapor Source Impact to GW?	
1	299-W10-20	218-W-3A Burial Ground	299-W10-19	9/06/2005	1	U	na		6.41	a
			299-W10-20	9/19/2005	1	U	200		6.41	No
			299-W10-21	9/19/2005	1	U	350		6.41	No
2	T Tank Farm	T Tank Farm	299-W10-1	8/29/2005	1	U	330		6.41	No
				9/27/2005	10.3		na		66.03	a
			299-W10-4	9/26/2005	1	U	950		6.41	No
			299-W10-8	8/25/2005	1	U	320		6.41	No
				9/27/2005	14.9		na		95.51	a
			299-W10-23	9/19/2005	1	U	110		6.41	No
			299-W10-24	9/20/2005	1	U	54		6.41	No
			299-W11-28	9/27/2005	1	U	na		6.41	a
			299-W11-41	9/26/2005	1	U	99		6.41	No
			299-W11-42	9/30/2005	1	U	900		6.41	No
3	T Plant	218-W-8 Burial Ground, T Plant	299-W11-3	8/30/2005	2.92				18.72	Possible
				10/3/2005	1	U	na		6.41	a
				10/11/2005	1	U	210		6.41	No
			299-W11-7	9/27/2005	1	U	560		6.41	No
			299-W11-14	10/3/2005 ^d	1	U	240		6.41	-
299-W11-37	9/27/2005	1	U	200		6.41	No			
4	299-W11-10	T Plant	299-W11-10	8/30/2005	1	U	120		6.41	No
				9/27/2005	7.61		na		48.78	a
5	216-T-25 Trench	216-T-25 Trench, 218-W-1 and 218-W-2, Burial Grounds, TX-TY Tank Farm	299-W10-5	8/30/2005	7.1		86		45.51	No
				9/27/2005	1	U	na		6.41	a
			299-W15-40 ^e	6/22/2005	12.1		660		77.56	No
			299-W15-43 ^e	6/23/2005	15.4		340		98.72	No
299-W15-765 ^e	6/22/2005	56.7		1700		363.46	No			

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Table 3-15. Results and Evaluation of Groundwater "Hot Spot" Soil Vapor and Groundwater Sampling. (2 Pages)

GW "Hot Spot" for CCl ₄	Associated Potential Release Site	Well	Sample Date	Carbon Tetrachloride						
				Soil Vapor Conc. (ppmv)	Soil Vapor Qualifier	GW Conc. (µg/L)	GW Qualifier	Calculated GW Conc. (µg/L) ^c	Vapor Source Impact to GW?	
6	299-W15-15	218-W-4B and 218-W-4C Burial Grounds	299-W15-14	8/30/2005	1	U	1	U	6.41	Inconclusive ^b
				9/27/2005	1.74		na		11.15	a
			299-W15-15	9/26/2005	1	U	6.9		6.41	Possible
7	299-W15-16	218-W-4C Burial Grounds	299-W15-16	9/29/2005	1	U	na		6.41	a
			299-W15-17	9/29/2005	1.03		26		6.60	No
			299-W15-30	9/29/2005	1	U	720		6.41	No
			299-W15-31A	9/22/2005	2.4		850		15.38	No
8	West of S-SX Tank Farm	216-S-25 Crib, S-SX Tank Farm	299-W18-15	9/22/2005	1.65		58		10.58	No
			299-W23-4	10/3/2005 ^d	6.67		23		42.76	Yes
			299-W23-10	9/22/2005	1	U	44		6.41	No
			299-W23-15	9/22/2005	1	U	120		6.41	No

^a No groundwater analytical data available.

^b Not determined because soil-vapor and groundwater values are less than detection limit.

^c Calculated using Henry's Law equilibrium partitioning between soil vapor and groundwater (0.156 ppmv Vapor ~ 1 µg/L groundwater per DOE/RL-2001-01, *Plutonium/Organic-Rich Process Condensate/Process Waste Group Operable Unit RI/FS Work Plan, Includes: 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units*).

^d Groundwater samples from Wells 299-W11-14 and 299-W23-4 collected on 6/21/2006.

^e These three wells were sampled before they became extraction wells as part of the 200-ZP-1 Groundwater Operable Unit pump-and-treat system on July 27, 2005 (DOE/RL-2005-91, *Fiscal Year 2005 Annual Summary Report for 200-UP-1 and 200-ZP-1 Pump-and-Treat Operations*).

GW = groundwater.

µg/L = micrograms analyte per liter of water.

na = groundwater not sampled.

ppmv = parts per million volume.

U = undetected above instrument limit of detection.

Table 3-16. T Plant Passive Soil Vapor Sampling Results.

Field Sample Points	Sample Date		CCl ₄ (ng/trap)	Lab Q
	Installed	Retrieved		
1	5/25/05	6/1/05	25	U
2-DUP	5/25/05	6/1/05	25	U
3	5/25/05	6/1/05	25	U
30	5/25/05	6/1/05	25	U
4	5/25/05	6/1/05	25	U
5	5/25/05	6/1/05	25	U
6	5/25/05	6/1/05	25	U
7	5/25/05	6/1/05	25	U
8	5/25/05	6/1/05	25	U
9	5/25/05	6/1/05	25	U
10	5/25/05	6/1/05	25	U
11	5/25/05	6/1/05	25	U
12	5/25/05	6/1/05	25	U
13	5/25/05	6/1/05	25	U
14	5/25/05	6/1/05	25	U
15	5/25/05	6/1/05	25	U
16	5/25/05	6/1/05	25	U
17	5/25/05	6/1/05	25	U
18	5/25/05	6/1/05	25	U
19	5/25/05	6/1/05	25	U
2	5/25/05	6/1/05	25	U
20	5/25/05	6/1/05	25	U
21	5/25/05	6/1/05	25	U
22	5/25/05	6/1/05	25	U
23	5/25/05	6/1/05	25	U
24	5/25/05	6/1/05	25	U
25	5/25/05	6/1/05	25	U
26	5/25/05	6/1/05	25	U
27	5/25/05	6/1/05	25	U
28	5/25/05	6/1/05	25	U
28-DUP	5/25/05	6/1/05	25	U
29	5/25/05	6/1/05	25	U

U = undetected, value is the laboratory detection limit.

From D&D-30838, 200-PW-1 Operable Unit Report on Step II Sampling and Analysis of the Dispersed Carbon Tetrachloride Vadose Zone Plume.

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Table 3-17. Active Soil Vapor Sampling Results from Fiscal Year 2001 to Fiscal Year 2006 Well Drilling. (6 Pages)

Well	Sample Date	Sample Depth (ft)	HEIS Number	CT (ppmv)	Lab Q	CF (ppmv)	Lab Q	MC (ppmv)	Lab Q
299-W11-47	1/13/2006	90	B1JHB4	1	U	1	U	4.34	
	1/13/2006	90	B1JHB3	1	U	1	U	4.35	
	1/13/2006	90	B1JHB5	1	U	1	U	4.54	
	1/13/2006	90	B1JHB6	1	U	2.1		1.3	
	1/18/2006	133	B1JHB7	2.49		1	U	9.9	
	1/18/2006	133	B1JHB8	2.49		1	U	9.84	
	1/18/2006	133	B1JHB9	2.49		1	U	9.82	
	1/18/2006	133	B1JHC0	2.49		2.1		9.97	
	2/8/2006	235	B1JHC1	1	U	5.13		17.4	
	2/8/2006	235	B1JHC2	1	U	4.91		17.9	
W15-224	2/9/2006	116	B1JN36	1	U	1	U	1	U
	2/9/2006	116	B1JN37	1	U	1	U	1	U
	2/14/2006	144.7-146.7	B1JN38	2.41		1	U	1.58	
	2/14/2006	144.7-146.7	B1JN39	2.33		1	U	1.23	
	2/15/2006	228-230	B1JN40	26.5		1	U	1.14	
	2/15/2006	228-230	B1JN41	26.6		1	U	1.21	
299-W15-42	11/28/2001	30.5	B13F38	1	U				
	11/30/2001	62.5	B13F39	8.6					
	12/4/2001	81.7	B13F40	48.9					
	12/17/2001	102	B13F41	1.56					
	12/19/2001	118.9	B13F42	10.9					
	12/20/2001	125.5	B13F43	5.9					
	1/3/2002	134	B13F44	20					
	1/3/2002	138.7	B13F45	1	U				
	1/4/2002	161.2	B13F46	1	U				
	1/8/2002	182.1	B13F47	3.61					
	1/14/2002	190.5	B13F48	24.7					
	1/15/2002	201.5	B13Y00	1	U				
	1/17/2002	222.5	B13Y01	13					
299-W15-43	6/23/05	228.5	B1HL62	15.2					
	6/23/05	228.5	B1HL63	15.4					
299-W15-49	11/12/2004	130	B1C7R3	1.3					

Table 3-17. Active Soil Vapor Sampling Results from Fiscal Year 2001 to Fiscal Year 2006 Well Drilling. (6 Pages)

Well	Sample Date	Sample Depth (ft)	HEIS Number	CT (ppmv)	Lab Q	CF (ppmv)	Lab Q	MC (ppmv)	Lab Q
	11/12/2004	130	B1C7R2	1.35					
	11/16/2004	167.8	B1C7R4	5.17					
	11/16/2004	167.8	B1C7R5	1	U				
	11/16/2004	167.8	B1C7R6	1	U				
	11/16/2004	167.8	B1C7R8	1	U				
	11/16/2004	167.8	B1C7R7	1	U				
	11/23/2004	230	B1C7R9	4.13					
	11/23/2004	230	B1C7T0	3.54					
	11/23/2004	230	B1C7T1	3.18					
	11/23/2004	230	B1C7T2	2.81					
	11/23/2004	230	B1C7T3	2.86					
299-W15-50	1/10/2005	109	B1C3H9	1	U				
	1/10/2005	109	B1C3J0	1	U				
	1/10/2005		B1C3J1	1	U				
	1/10/2005	111	B1C3J2	1	U				
	1/10/2005	111	B1C3J4	1	U				
	1/10/2005	111	B1C3J3	1	U				
	1/17/2005	210	B1C3J5	1	U				
	1/17/2005	210	B1C3J6	1	U				
1/17/2005	210	B1C3J7	1	U					
299-W15-84	8/26/2002	180	B15CM4	5.48					
	8/26/2002	180	B15CL9	5.77					
	10/4/2002	180	B15JL2	13.1					
	10/30/2002	180	B15WB6	2.82					
	11/27/2002	180	B163D7	7.22					
	12/31/2002	180	B165D8	10.6					
	1/30/2003	180	B165J1	13					
	2/21/2003	180	B165L5	10.9					
	3/20/2003	180	B165R6	18.8					
	5/1/2003	180	B165V9	8.26					
	5/22/2003	180	B16602	20.5					
	5/22/2003	180	B165Y5	25.9					
	7/1/2003	180	B16621	17.9					

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Table 3-17. Active Soil Vapor Sampling Results from Fiscal Year 2001 to Fiscal Year 2006 Well Drilling. (6 Pages)

Well	Sample Date	Sample Depth (ft)	HEIS Number	CT (ppmv)	Lab Q	CF (ppmv)	Lab Q	MC (ppmv)	Lab Q
	8/5/2003	180	B16647	21					
	8/26/2003	180	B16671	23.8					
	10/31/2003	180	B17X61	4.72					
	12/4/2003	180	B184K5	4.92					
	12/22/2003	180	B188J9	4.87					
	1/20/2004	180	B18D00	10.7					
	2/19/2004	180	B18K26	18.5					
	3/17/2004	180	B18P60	1	U				
299-W15-84	3/24/2004	180	B18V35	19.5					
	4/29/2004	180	B19320	15.6					
	6/3/2004	180	B199V1	16.4					
	6/24/2004	180	B19LN2	20.9					
	7/15/2004	180	B19TL3	18.1					
	8/26/2004	180	B1B3H5	17.7					
	10/7/2004	180	B1BFJ4	10.7					
	11/17/2004	180	B1CHK1	22					
	12/28/2004	180	B1C2X5	18					
	1/19/2005	180	B1C7H1	22					
	2/24/2005	180	B1CDX4	16.1					
	3/10/2005	180	B1CKB8	23					
	5/26/2006	180	B1J876	14					
299-W15-94	9/20/2005	127	B1FRW6	1	U				
	9/20/2005	127	B1FRW5	1	U				
	9/20/2005	169	B1FRW7	1	U				
	9/20/2005	169	B1FRW8	1	U				
	9/22/2005	235	B1FRW9	1	U				
	9/22/2005	235	B1FRX0	1	U				
299-W15-95	3/20/2001	82	B15D91	42.8					
	1/9/2002	144	B15NL7	28.3					
	2/4/2002	144	B15NP2	31.8					
	2/26/2002	144	B15NT7	29					
	7/30/2002	144	B15J82	13.3					
	8/26/2002	159	B15CM1	1	U				

Table 3-17. Active Soil Vapor Sampling Results from Fiscal Year 2001 to Fiscal Year 2006 Well Drilling. (6 Pages)

Well	Sample Date	Sample Depth (ft)	HEIS Number	CT (ppmv)	Lab Q	CF (ppmv)	Lab Q	MC (ppmv)	Lab Q
	10/4/2002	144	B15JL4	16.1					
	10/30/2002	144	B15WB8	18.5					
	11/27/2002	144	B163D9	9.68					
	12/31/2002	144	B165F0	9.83					
	1/30/2003	144	B165J3	12.6					
	2/21/2003	144	B165L7	11.9					
	3/20/2003	144	B165R8	21.7					
	5/1/2003	144	B165W2	17.2					
	5/22/2003	144	B165Y8	18.8					
	7/1/2003	144	B16624	25.1					
	8/5/2003	144	B16649	13.7					
	8/26/2003	144	B16676	10.9					
	8/26/2003	144	B16673	10.9					
	10/31/2003	144	B17X63	19.2					
	12/4/2003	144	B184K7	20.3					
	2/19/2004	144	B18K28	40.3					
	3/16/2004	144	B18P62	23					
	3/16/2004	144	B18P69	23					
	4/29/2004	144	B19318	35					
	6/3/2004	144	B199T9	22					
	6/24/2004	144	B19LN0	28.1					
	7/23/2004	144	B19YB0	18.6					
	8/26/2004	144	B1B3H3	22.7					
	10/7/2004	144	B1BFJ2	18.5					
	2/24/2005	144	B1CDX2	26.7					
	3/18/2005	144	B1CKB6	24.8					
	8/4/2005	144	B1DM96	2.37					
	8/19/2005	144	B1DPK7	15.9					
	9/26/2005	144	B1F3N6	15.8					
	10/25/2005	144	B1FB04	15.8					
	11/28/2005	144	B1H2M9	16.7					
	12/20/2005	144	B1H9V1	19					
	1/26/2006	144	B1HBF9	19.9					

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Table 3-17. Active Soil Vapor Sampling Results from Fiscal Year 2001 to Fiscal Year 2006 Well Drilling. (6 Pages)

Well	Sample Date	Sample Depth (ft)	HEIS Number	CT (ppmv)	Lab Q	CF (ppmv)	Lab Q	MC (ppmv)	Lab Q
	2/23/2006	144	B1HRD1	22.6					
	5/26/2006	144	B1J877	17.8					
299-W15-764	10/12/2001	60	B12XH6	1	U				
	10/15/2001	80	B12XH7	17.8					
	10/16/2001	100	B12XH8	1	U				
	10/18/2001	120	B12XH9	1	U				
	10/18/2001	125	B12XJ0	1	U				
299-W18-16	11/1/2004	122	B1C7P1	86.9					
	11/1/2004	122	B1C7N8	70.4					
	11/1/2004	122	B1C7N7	69.8					
	11/1/2004	122	B1C7P0	73.6					
	11/1/2004	122	B1C7N9	73.5					
	11/3/2004	144	B1C7P2	2.6					
	11/3/2004	144	B1C7P3	8.5					
	11/3/2004	144	B1C7P4	14.5					
	11/3/2004	144	B1C7P5	19.9					
	11/3/2004	144	B1C7P6	19.8					
	11/15/2004	229.5	B1C7P7	21.8					
	11/15/2004	229.5	B1C7P8	24.7					
	11/15/2004	229.5	B1C7P9	24.7					
	11/15/2004	229.5	B1C7R1	28.4					
	11/15/2004	229.5	B1C7R0	26.9					
C4183	3/1/2005	74	B1CKM9	1	U				
	3/1/2005	74	B1CKN0	1	U				
	3/1/2005	74	B1CKN1	1	U				
	3/1/2005	74	B1CKN2	1	U				
	3/3/2005	96.5	B1CKN3	1	U				
	3/3/2005	96.5	B1CKN4	1	U				
	3/3/2005	96.5	B1CKN5	1	U				
	3/3/2005	96.5	B1CKN6	1	U				
	3/4/2005	117.5	B1CKN7	3.18					
	3/4/2005	117.5	B1CKN8	3.05					
	3/4/2005	117.5	B1CKN9	3.31					

Table 3-17. Active Soil Vapor Sampling Results from Fiscal Year 2001 to Fiscal Year 2006 Well Drilling. (6 Pages)

Well	Sample Date	Sample Depth (ft)	HEIS Number	CT (ppmv)	Lab Q	CF (ppmv)	Lab Q	MC (ppmv)	Lab Q
	3/4/2005	117.5	B1CKP0	3.34					
	3/8/2005	149.4	B1CKP1	1	U				
	3/8/2005	149.4	B1CKP2	1	U				
	3/8/2005	149.4	B1CKP3	1	U				
	3/8/2005	149.4	B1CKP4	1	U				
	3/14/2005	174.5	B1CKP5	1	U				
	3/14/2005	174.5	B1CKP6	1	U				
	3/14/2005	174.5	B1CKP7	1	U				
	3/14/2005	174.5	B1CKP8	1	U				
	3/18/2005	198.5	B1CKP9	3.28					
	3/18/2005	198.5	B1CKR0	3.32					
	3/18/2005	198.5	B1CKR1	3.32					
	3/18/2005	198.5	B1CKR2	3.25					
	3/24/2005	222	B1CPR0	12.1					
	3/24/2005	222	B1CPR3	12.2					
	3/24/2005	222	B1CPR2	12.1					
	3/24/2005	222	B1CPR1	12.2					
	3/24/2005	222	B1CPR4	11.9					
	3/24/2005	222	B1CPR5	12					
	3/24/2005	222	B1CPR6	12.1					
	3/24/2005	222	B1CPR7	11.8					
C4738	2/7/05	128	B11C7T4	1	U				
	2/7/05	128	B1C7T5	1	U				

CF = chloroform.

CT = carbon tetrachloride.

NA = not analyzed.

U = analyzed for but not detected. Value provided is estimated sample quantitation limit corrected for dilution and percent moisture.

From D&D-30838, 200-PW-1 Operable Unit Report on Step II Sampling and Analysis of the Dispersed Carbon Tetrachloride Vadose Zone Plume.

Table 3-18. Results of the Active Soil Vapor Sampling from the Enhanced Access Penetration System Demonstration Boreholes in 2003.

Well ID	Depth (ft)	CCl ₄ (ppmv) ^a	Date
C4241	20.5	0.85	9/26/2003
C4241	24	1.5	9/26/2003
C4241	27	1.75	9/26/2003
C4241	30	2.5	9/26/2003
C4241	33	3	9/26/2003
C4241	37	3.15	9/26/2003
C4241	40.5	4	9/26/2003
C4241	44	4.5	9/26/2003
C4241	47	2.75	9/26/2003
C4241	162	8.2	10/2/2003
C4242	4	0.4	10/2/2003
C4242	7	0.9	10/2/2003
C4242	12.5	1.1	10/2/2003
C4242	20	1.2	10/2/2003
C4242	23	2	10/2/2003
C4242	26.5	2.4	10/2/2003
C4242	29.5	5.4	10/2/2003
C4242	33	5.1	10/2/2003
C4242	36	5.3	10/2/2003
C4242	39	6.7	10/2/2003
C4242	42.5	4.9	10/2/2003
C4242	45	8.9	10/2/2003
C4242	49	3.4	10/2/2003
C4242	52.49	12.6	10/2/2003
C4242	53.7	5.7	10/2/2003
C4242	148	12.9	10/2/2003
C4243	137.79	12.4	10/9/2003
C4244	26	6.2	10/17/2003
C4244	37	12.6	10/17/2003

^a Soil-vapor concentrations are estimated from plots in Applied Research Associates, Inc., 2004, *Enhanced Access Penetration System (EAPS) Draft Final Technical Report*.

Table 3-19. Results of Active Soil Vapor Sampling during the Fiscal Year 1992-Fiscal Year 1993 Well Drilling Around the Release Sites. (3 Pages)

Sample Location	Sample Date	Sample Depth	CCl ₄ (ppmv)	TCM (ppmv)
299-W18-96	2/11/1993	86.7	8.1	
299-W18-96	2/12/1993	101.1	8.31	
299-W18-96	2/17/1993	121.8	98.09	
299-W18-96	2/25/1993	148.15		
299-W15-216	5/19/1992	42	39.06	
299-W15-216	5/19/1992	48	52.74	
299-W15-216	6/1/1992	101	33.54	
299-W15-216	6/9/1992	127	41.85	
299-W15-217	6/9/1992	21.7	26.2	
299-W15-217	6/9/1992	21.7	22.8	
299-W15-217	6/9/1992	21.7	30.7	
299-W15-217	6/11/1992	40	344.7	
299-W15-217	6/11/1992	40	491	
299-W15-217	6/16/1992	51.8	3207	
299-W15-217	6/17/1992	54.1	2811.7	
299-W15-217	6/23/1992	81	7125.2	
299-W15-217	6/23/1992	81	6766.9	
299-W15-217	6/29/1992	103	78.8	
299-W15-217	6/29/1992	103	75.2	
299-W15-217	6/30/1992	116.1	156	
299-W15-218	2/11/1993	59.9	45.39	
299-W15-218	2/16/1993	92	102.85	
299-W15-218	2/23/1993	111.8	16660	18.7
299-W15-218	2/23/1993	111.8	20910	96.6
299-W15-218	3/8/1993	126.6	29.75	
299-W15-218	3/10/1993	139.5	10.2	7.905
299-W15-218	3/11/1993	158.9	155.04	
299-W15-218	3/15/1993	178.5	778.6	
299-W15-218	3/16/1993	189.7	10380	0.68
299-W15-220	6/9/1993	50.5	853.66	
299-W15-220	6/11/1993	70		
299-W15-220	6/25/1993	90	1511.6	11.09

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Table 3-19. Results of Active Soil Vapor Sampling during the Fiscal Year 1992-Fiscal Year 1993 Well Drilling Around the Release Sites. (3 Pages)

Sample Location	Sample Date	Sample Depth	CCl ₄ (ppmv)	TCM (ppmv)
299-W15-220	6/24/1993	115	633.02	0.99
299-W15-220	6/30/1993	142	149	0.97
299-W15-220	6/30/1993	142	167.2	0.45
299-W15-220	7/13/1993	160	108.356	1.305
299-W15-220	7/16/1993	182	50.16	1.435
299-W15-220	7/16/1993	182	49.368	1.551
299-W15-223	9/20/1993	85 ¹	27.673	
299-W15-223	9/21/1993	98 ¹	10.597	
299-W15-223	9/22/1993	104 ¹	36.774	
299-W15-223	9/23/1993	110 ¹	11.138	
299-W15-223	9/23/1993	119.9 ¹	116.654	
299-W18-246	3/27/1992	57.75	46.86	
299-W18-246	4/6/1992	85	20.8	
299-W18-246	4/10/1992	107	14.5	
299-W18-246	5/2/1992	146	121	
299-W18-246	4/21/1992	152	287.7	
299-W18-246	4/30/1992	194	20.85	
299-W18-246	4/30/1992	196	14.52	
299-W18-247	3/27/1992	167	62	
299-W18-247	3/30/1992	179.8	50	
299-W18-248	5/4/1992	20	22.3	
299-W18-248	5/6/1992	40	20.4	
299-W18-248	5/6/1992	40	23.3	
299-W18-248	5/6/1992	40	21.7	
299-W18-248	5/7/1992	59.4	207.9	
299-W18-248	5/12/1992	61.4	209.7	
299-W18-248	5/15/1992	80	9.9	
299-W18-248	5/15/1992	80	15.8	
299-W18-248	5/18/1992	86.9	247.5	
299-W18-248	5/18/1992	88.9	207	
299-W18-248	5/21/1992	120	277.5	
299-W18-248	5/26/1992	141	1300	
299-W18-249	7/7/1992	20	0.7	

Table 3-19. Results of Active Soil Vapor Sampling during the Fiscal Year 1992-Fiscal Year 1993 Well Drilling Around the Release Sites. (3 Pages)

Sample Location	Sample Date	Sample Depth	CCl ₄ (ppmv)	TCM (ppmv)
299-W18-249	7/9/1992	42	84.7	
299-W18-249	7/13/1992	65	48.3	
299-W18-249	7/14/1992	84	5.6	
299-W18-252	5/7/1993	48.86	1.73	
299-W18-252	5/11/1993	64.6		
299-W18-252	5/13/2006	85.68	16.32	
299-W18-252	5/14/2003	104.42		
299-W18-252	5/18/1993	123.2	5.251	
299-W18-252	5/20/1993	138	36.41	0.177
299-W18-252	5/26/1993	159.4	1419.61	
299-W18-252	6/1/1993	185.8	8.918	
299-W18-252	6/4/1993	202.24	169.708	0.511

¹ 299-W15-223 is a slant well and the sample depths are measured down hole.
 CCl₄ = carbon tetrachloride.
 TCM = chloroform.

Table 3-20. Summary of Highest Carbon Tetrachloride Concentrations in Soil Samples from the Fiscal Year 1992- Fiscal Year 1993 and 2001 Well Drilling Around the Release Sites.

Well	Sample Date	Highest CCl ₄ (µg/kg)	Sample Depth (ft bgs)
216-Z-9 Trench Wells			
299-W15-84	6/11/2001	9	119.5
299-W15-95	5/21/2001	5	102.5
299-W15-216	5/20/1992	67	49.1
299-W15-217	6/29/1992	37,817	114
299-W15-218	2/17/1993	15,794	110
299-W15-219	5/5/1993	11,688	114.5
299-W15-220	6/15/1993	1,132	90.5
216-Z-1A Tile Field Wells			
299-W18-174	4/7/1993	6,561	127.1
299-W18-246	5/7/1992	1,009	219
299-W18-248	5/26/1992	1,093	135
299-W18-252	5/19/1993	519	126.5
216-Z-18 Crib Wells			
299-W18-96	2/25/1993	861	143.8
299-W18-247	3/19/1992	717	135.4
299-W18-249	7/21/1992	1,755	146.2

See Appendix C for additional analytical results from these wells.

Table 3-21. Active Soil Vapor Results for the 1991 Investigation Around the 216-Z-1A/216-Z-18 Area.

Point ID	Sample Date	Carbon Tetrachloride (ppmv)
Z12S-1	3/14/1991	3.901
Z18E-1	3/14/1991	1.902
Z18E-2	3/14/1991	2.6
Z18E-3	3/14/1991	2.7
Z18N-1	3/14/1991	3.519
Z18N-10	3/14/1991	5.883
Z18N-11	3/14/1991	6.082
Z18N-12	3/14/1991	2.68
Z18N-2	3/14/1991	2.661
Z18N-3	3/14/1991	1.716
Z18N-4	3/14/1991	3.065
Z18N-5	3/14/1991	1.679
Z18N-6	3/14/1991	1.492
Z18N-7	3/14/1991	7.46
Z18N-8	3/14/1991	14.95
Z18N-9	3/14/1991	7.319
Z18W-1	3/14/1991	4.633
Z18W-2	3/14/1991	3.973
Z18W-3	3/14/1991	6.05
Z18W-4	3/14/1991	6.529
Z18W-5	3/14/1991	5.093

Table 3-22. Background Values for the 200-PW-3 Operable Unit Radiological Contaminants of Potential Concern.

Radiological Contaminants of Potential Concern	Background Concentration (pCi/g)
Americium-241	NA
Carbon-14	NA
Cesium-137	1.05
Cobalt-60	0.00842
Europium-152	NA
Europium-154	0.0334
Europium-155	0.0539
Hydrogen-3 (tritium)	NA
Iodine-129	NA
Plutonium-238	0.00378
Plutonium-239/240	0.0248
Strontium-90	0.178
Technetium-99	NA
Uranium-233/234	1.10
Uranium-235	0.109
Uranium-238	1.06

NA = no reference source available.

Values from DOE/RL-96-12, Rev. 0, *Hanford Site Background: Part 2, Soil Background for Radionuclides*, Table 5-1, 90th percentile.

Table 3-23. Background Values for the 200-PW-3 Operable Unit Nonradiological Contaminants of Potential Concern.

Nonradiological Contaminants of Potential Concern	Background Concentration (mg/kg)
<i>Nonradiological Constituents – Metals</i>	
Arsenic	6.47
Barium	132
Cadmium	--
Chromium (III)	18.5
Chromium (VI)	NA
Lead	10.2
Mercury	0.33
Selenium	--
Silver	0.73
<i>Nonradiological Constituents – General Inorganics, Volatile Organics, Semivolatile Organics</i>	
Nitrate	52.0
Ammonia	9.23
Hexone	NA
Tributyl phosphate	NA
Normal paraffin hydrocarbon	NA
Volatile organic compounds	NA
Semivolatile organic compounds	NA
Polychlorinated biphenyls (PCB)	NA

NA = no reference source available.

-- = not enough data above the reporting limit to provide for a distribution fit (DOE/RL-92-24)

Values from DOE/RL-92-24, Rev. 3, *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes*, Table 6-9.a, 90th percentile.

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4.0 CONCLUSIONS AND PATH FORWARD

The Plutonium/Organic-Rich OU Group will be remediated under the CERCLA remedial action process. Compliance with regulatory requirements will be documented through completion of the CERCLA process as described in the Implementation Plan (DOE/RL-98-28). Tasks to complete the CERCLA remedial action process include the completion of the FS, issuing a Proposed Plan to the public and the approval of a Record of Decision (ROD). In addition, documentation will be prepared to close out the soil vapor extraction interim action initiated in the 200-PW-1 OU in 1992.

4.1 CONCLUSIONS

The purpose of this RI report was the following.

1. Report the results of the RI work as it is described in the Work Plan (DOE/RL-2001-01).
2. Determine if sufficient data have been collected to support risk assessment and remedial decision making.
3. Determine the need to proceed with an FS.

These purposes were met for all four of the representative waste sites evaluated and for the dispersed carbon tetrachloride vadose-zone plume (D&D-30565). The data collected were of sufficient quantity and quality to proceed to the FS to support risk assessment activities and evaluation of remedial alternatives and identify preferred remedial actions. Additionally, this FS will provide the baseline risk assessment that was deferred.

One of the representative waste sites, the 241-Z-361 Settling Tank, contains sludge that will require remediation under CERCLA. Both DOE and EPA have determined that a non-time critical removal action under CERCLA is appropriate, and an engineering evaluation / cost analysis was prepared and recommended a preferred approach for this action (DOE/RL-2003-52).

A variety of field investigation activities and analyses were in progress during the preparation of this RI report. The results of these activities and analyses will be evaluated and presented in the FS report evaluation of the contaminant distribution models. These items are mentioned throughout the RI report in their respective sections but also are summarized below.

- Numerical modeling of carbon tetrachloride migration through the vadose zone around the release sites using Subsurface Transport over Multiple Phases (STOMP) (PNNL-12028) will be expanded in fiscal year 2007 to include all three primary carbon tetrachloride sites in a comprehensive model.
- Soil-vapor sampling is being conducted in new groundwater monitoring wells being drilled in the 200 West Area.

- HHR investigations are collecting soil samples in the vadose zone down to the CCU around the 216-Z-9 Trench, 216-Z-1A Tile Field, and the 216-Z-18 Crib to determine the presence and extent of carbon tetrachloride DNAPL.
- Borehole geophysical logging continues in wells around the 216-Z-9 Trench and the 216-Z-1A Tile Field.
- Passive soil-vapor surveys were conducted at selected trenches within the 200 West Area burial grounds as part of the 200-SW-2 OU investigation.
- Soil-vapor extraction and associated soil-vapor sampling is continuing.
- Prompt evaporation measurements and evaluation of the remaining carbon tetrachloride in the vadose zone at the 216-Z-9 Trench are needed.
- Soil-vapor sampling of the shallow vadose zone is needed for the Central Plateau ecological risk assessment.

The significant RI findings for each representative waste site and for the dispersed carbon tetrachloride vadose-zone plume are summarized below.

216-Z-9 Trench

- Approximately 58 kg of plutonium were removed from the 216-Z-9 Trench as part of trench floor mining activities completed from 1976 to 1978. An estimated 48 kg of plutonium remains in the trench.
- Radioactive contamination was identified in several boreholes using geophysical logging methods. The contamination was detected to a maximum depth of 59.4 m (195 ft) bgs.
- Radioactive contamination in soil samples was detected to a maximum depth of 37.2 m (122 ft) bgs.
- Soil-vapor samples collected from boreholes drilled in the vicinity of the trench revealed carbon tetrachloride and other organic vapors at concentrations up to 20,910 ppmv.
- Soil samples from boreholes near the 216-Z-9 Trench revealed carbon tetrachloride in soil up to 380 mg/kg. This same soil sample (from 19.4 to 20.1 m or 63.5 to 66 ft bgs) contained carbon tetrachloride DNAPL, based on both field screening and soil-equilibrium evaluations. Maximum concentrations of COPCs detected in soil samples are summarized in Section 3.2.1.3.
- An SVE system has been operated near the 216-Z-9 Trench as an interim remedial action. Between April 1991 and October 2005, 54,183 kg of carbon tetrachloride was removed by the SVE system.
- In general, the highest concentrations of COPCs detected in the vadose-zone soils have been in fine-grained layers (i.e., silts and the CCU).

- Geophysical methods were used to map and contour the surface of key geologic layers beneath the trench. The subsurface contours of these layers is being used to guide the HHR soil-sampling investigation of the CCU for carbon tetrachloride DNAPL.

216-Z-1A Tile Field

- The highest concentrations of radionuclides in sediments are located immediately beneath the tile field, below the distribution pipe.
- The maximum vertical extent of radiological contamination detected in soil, as detected by borehole geophysical logging, is 37 m (121 ft).
- The maximum vertical extent of radiological contamination detected in soil samples from the tile field area was 46.8 m (153.5 ft).
- Soil samples from the tile field area revealed a maximum carbon tetrachloride concentration of 6.561 mg/kg. Maximum concentrations of other COPCs are summarized in Section 3.2.2.3.
- An SVE system has been operated near the tile field. Between April 1991 and October 2005, 24,528 kg of carbon tetrachloride was removed by the SVE system.
- Geophysical methods were used to map and contour the surface of key geologic layers beneath the tile field. The subsurface contours of these layers are being used to guide the HHR soil-sampling investigation of the CCU for carbon tetrachloride DNAPL.

241-Z-361 Settling Tank

- The settling tank currently contains approximately 75 m³ of sludge. The sludge is contaminated with radionuclides, metals, organics, and [polychlorinated biphenyls].
- Soils beneath the tank were scanned for radiological contamination in 1999 during installation of piers to support the tank. No radiological contamination was detected.
- The lack of detected radiological contamination on the piers installed beneath the depth of the tank bottom, and the apparent stability in the tank sludge level since 1975, suggests that there has been no leak of tank contents to the soil column.

Dispersed Carbon Tetrachloride Vadose-Zone Plume

- The highest carbon tetrachloride concentrations in the shallow, intermediate, and deep vadose zone generally are located within about 75 to 152 m (246 to 500 ft) of the release sites.
- The carbon tetrachloride concentrations in the vadose zone around the release sites are being reduced by the SVE system and are significantly less than the initial concentrations measured in 1992-1993.

- Outside of the area around the release sites, carbon tetrachloride vapor concentrations up to about 10 to 12 ppmv were found at various locations in the vadose zone, but these concentrations are not considered to have the potential for significant current or future groundwater impacts.
- The soil-vapor and shallow-groundwater sampling at wells within the eight carbon tetrachloride groundwater “hot spot” areas indicated that the deep vadose-zone soil-vapor concentrations are not significant sources of groundwater contamination in these areas.
- An area of high passive soil-vapor concentration was found northwest of the 216-Z-9 Trench near the entrance to the PFP. The active soil-vapor investigation of the pipelines near this area, and several CPT investigations, did not identify any potential release areas in the shallow vadose zone. CPT push location P10A had the highest active soil-vapor carbon tetrachloride concentration of 119 ppmv at 31.1 m (102.1 ft), above the top of the CCU. This area may be associated with contamination from the 216-Z-9 Trench that moved away from the trench area on the top of the CCU, and is outside the capture zone of the SVE system.
- Carbon tetrachloride DNAPL was found at only one sample depth in well 299-W15-46 in the shallow vadose zone, adjacent to the south side of the 216-Z-9 Trench.

216-A-8 Crib

- The highest radiological contamination associated with the crib was detected within 18 m (60 ft) of the ground surface.
- The maximum extent of radiologic contamination detected near the crib, by geophysical logging techniques, was 76.5 m (251 ft) below ground surface. However, the source of the contamination at this depth is not known.
- Radioactive COPCs for the 200-PW-3 OU were detected in the vadose zone beneath the 216-A-8 Crib in Borehole C4545 to total depth (80 m [264.5 ft] bgs). A summary of the maximum concentrations of COPCs detected near the crib is presented in Section 3.2.5.3.

Impacts to Groundwater

- Two of the representative waste sites, the 216-Z-9 Trench and 216-A-8 Crib, have discharged effluent volumes greater than their soil column pore volume, which indicates that the volume of effluent released was sufficient to reach the unconfined aquifer during operation of these waste sites. However, based on currently available site data, including soil moisture content measurements, these waste sites are not considered to be significant current sources of groundwater contamination.
- All available information indicates that the 241-Z-361 Settling Tank has not leaked, so this site is not considered to be a past or current source of groundwater contamination.
- The 216-Z-1A Tile Field has not been considered to be a past source of groundwater contamination, because the effluent volume discharged at this site was much less than the

soil-column pore volume. However, based on the dispersed carbon tetrachloride vadose-zone plume data presented in Section 3.2.4.9, there are significant concentrations of carbon tetrachloride in the vadose zone adjacent to this site, so it is likely that this site was a past source of groundwater contamination, but it is not a significant current source.

4.2 PATH FORWARD

4.2.1 Feasibility Study

The FS will follow EPA/540/G-89/004, *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA, Interim Final*, OSWER 9355.3-01, and the strategy in the Implementation Plan (DOE/RL-98-28). Although some refinement is expected during the FS, Appendix D of the Implementation Plan fulfills many of the requirements for the screening phase (Steps 1 through 6) of the FS process. The potential ARARs, preliminary remedial action objectives, preliminary remediation goals, general response actions, and the screening-level analysis of alternatives are identified in the Implementation Plan. The information is not repeated here but is incorporated by this reference into this RI report. Potential ARARs will be fully developed in the FS. The FS also will identify any applicable treatability studies that are needed.

As a result of the work completed in the Implementation Plan (DOE/RL-98-28), the FS report will focus on the final phase of the FS, which consists of refining and analyzing in detail a limited number of alternatives identified in the screening phase. General response actions considered applicable to the Plutonium/Organic-Rich Group OU are as follows:

- No action
- Institutional controls and monitored natural attenuation
- Engineered surface barriers
- Excavation and disposal with or without ex situ treatment
- In situ grouting or stabilization
- In situ vitrification.

An initial activity of the FS will be the detailed evaluation of available information for the analogous waste sites in the OU. Data will be compiled to evaluate the applicability of the representative waste sites to the analogous waste sites, based on the contaminant distribution models developed in this RI report. Waste sites that are determined not to be analogous to the representative waste sites will be evaluated against representative waste sites from other OUs. Based on the specific characteristics, such a waste site may be reassigned to a more appropriate OU or may be maintained in the current OU with a requirement for confirmatory sampling. Changes to the preferred alternative would be evaluated, as needed, based on confirmatory data. The waste sites that are determined to be analogous to one or more of the representative waste sites will be evaluated for appropriate remedial measures through the FS process. Additional data needs may be identified during the FS process and during the DQO to support the confirmatory sampling for these analogous waste sites.

The baseline risk assessment was deferred to the FS. To support evaluation of the CERCLA criteria in the FS, additional risk-assessment activities also will be conducted to evaluate the

potential risks to inadvertent intruders. The inadvertent intruder scenario focuses on someone 150 years in the future who engages in an activity that results in contact with wastes that have been left in place. This could include a construction trench worker, a well driller, or a rural resident. The latter is considered the worst case scenario and, therefore, will be analyzed in the greatest detail.

4.2.2 Ecological Evaluations

Ecological evaluations will be conducted as part of the FS.

4.2.3 Proposed Plan

The decision-making process for the waste sites in the Plutonium/Organic-Rich Group OU will be based on the use of a proposed plan and a ROD. As part of the RI/FS process, a number of options for developing proposed plans and RODs are being evaluated. Remedial decisions may proceed on an OU-by-OU basis, but alternate site groupings may be considered for waste sites in the Central Plateau. Several alternatives currently are under consideration, some of which may be used for the waste sites addressed in this RI report.

Three alternatives to the OU-by-OU remediation approach have been identified to provide flexibility in the decision-making process, facilitate early action, and remediate and close specific areas or zones. Examples of these alternatives are as follows.

4.2.3.1 High-Risk Waste Sites Identified for Early Action

The first alternative accelerates the start of remedial actions and closure of waste sites that present an ongoing or expected future threat to groundwater. Some high-risk sites already have been identified for early actions in the BC Cribs and Trenches Area, U Plant Area, PUREX Plant, and PFP. Four waste sites (the 216-B-53A, 216-B-53B, 216-B-54, and 216-B-58 Trenches) in the 200-LW-1 OU have been transferred to the 200-TW-1 OU.

4.2.3.2 Regional Site Closure

Under the second alternative, waste-site remedial decision-making may be realigned under a regional closure strategy that aligns waste sites into groups defined by geographical zones, like the U Plant Area.

4.2.3.3 Waste Site Grouping by Characteristics or Hazards

The third alternative for remedial decision-making strategies is based on a specific characteristic or hazard that mandates additional requirements, such as supplemental ARARs, or more robust remedial alternatives. For example, other OUs contain a number of waste sites that are suspected of containing concentrations of transuranic radionuclides in excess of the 100 nCi/g concentration limit for designation as transuranic waste. Waste sites containing concentrations of transuranic radionuclides above 100 nCi/g may require selective removal actions or more

protective barrier designs to prevent intrusion based on this particular hazard. Grouping waste sites with other similarly contaminated soil sites in other OUs could streamline the decision-making process and tailor the requirements and alternatives to these specific hazards.

Following the completion of the FS, a proposed plan will be prepared that identifies the preferred remedial alternative for this OU Group. In addition to identifying the preferred alternative, the proposed plan will serve the following purposes.

- Provide a summary of the completed RI/FS.
- Provide criteria by which analogous waste sites within the Group OU that were not previously characterized will be evaluated after the ROD is issued, to confirm that the contaminant distribution model for the site is consistent with the preferred alternative. Contingencies to move a waste site to a more appropriate waste group also will be developed.
- Identify performance standards and ARARs that are applicable to the OU.

After the public review process is complete, the EPA (as the lead regulatory agency), in concert with the DOE and Ecology, will make a final decision on the remedial action to be taken, which is documented in a ROD. If alternate decision-making strategies are employed, lead agency realignments may be considered in consultations between the EPA and Ecology.

Because the 200 Areas are composed of CERCLA past-practice, RCRA past-practice, and treatment, storage, and disposal sites, the Tri-Parties have committed that the cleanup strategies will be integrated to the maximum extent possible. This is consistent with specific recommendations for integration in the Tri-Party Agreement (Ecology et al., 1989, as amended) and Section 2.4 of the Implementation Plan (DOE/RL-98-28).

4.3 POST-RECORD OF DECISION ACTIVITIES AND ANALOGOUS SITE APPROACH

The ROD for this Group OU will cover all of the waste sites in the Group OU, not just the four representative waste sites and the dispersed carbon tetrachloride vadose-zone plume characterized under the RI. This analogous site approach is described in more detail in the Implementation Plan (DOE/RL-98-28). The basic approach is that the representative waste sites contain types, concentrations, and distributions of contaminants similar to those at the other sites in the Group OU, because the waste sites are grouped on the basis of similar site histories and processes. The waste sites, therefore, share similar risks and a similar need for remedial action. The data collected for the representative waste sites will be considered to be analogous to the remaining sites (Section 1.3.5).

After the ROD has been issued, a remedial design report and remedial action work plan will be prepared to detail the scope of the remedial action. As part of this activity, DQOs will be established and SAPs will be prepared to direct confirmatory and/or remedial design and verification sampling and analysis activities. Before remediation is started, confirmation and/or remedial design sampling will be performed to ensure that sufficient characterization data are

available to confirm that the selected remedy is appropriate for the waste sites covered by the ROD, to collect data necessary for the remedial design, and to support delisting the 200 Areas from the National Priorities List (CERCLA) site (40 CFR 300, "National Oil and Hazardous Substances Pollution Contingency Plan," Appendix B, "National Priorities List"). Verification sampling will be performed after the remedial action is complete to determine if ROD requirements have been met and if the remedy was protective of human health and the environment. Additional guidance for confirmatory and verification sampling is provided in Section 6.2 of DOE/RL-98-28.

The remedial design report/remedial action work plan will include an integrated schedule of remediation activities for waste sites and releases covered by the ROD or RODs. The available options for remedy implementation throughout the 200 Areas will be explored during the course of the RI/FS process and may be reflected in the remedial action work plan. Following the completion of the remediation activity, closeout activities will be performed as discussed in Section 2.4 of DOE/RL-98-28.

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APPENDIX A

FREQUENCY OF DETECTION AND DATA SUMMARY TABLES

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Table A-1. Summary Table for All Constituents in Shallow Zone Soil Samples

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-46 (C3426)															
2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	93-76-5	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	93-72-1	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-D(2,4-Dichlorophenoxyacetic acid)	94-75-7	GENORG	µg/kg	1	0	0	33	33			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid)	94-82-6	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Aldrin	309-00-2	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Alpha-BHC	319-84-6	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Alpha-Chlordane	5103-71-9	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Dalapon	75-99-0	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Delta-BHC	319-86-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Dicamba	1918-00-9	GENORG	µg/kg	1	0	0	67	67			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dichloroprop	120-36-5	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dieldrin	60-57-1	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Dinoseb(2-secButyl-4,6-dinitrophenol)	88-85-7	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Endosulfan I	959-98-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Endosulfan II	33213-65-9	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Endosulfan sulfate	1031-07-8	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Endrin	72-20-8	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Endrin aldehyde	7421-93-4	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Endrin ketone	53494-70-5	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Gamma-BHC (Lindane)	58-89-9	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Gamma-Chlordane	5103-74-2	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Heptachlor	76-44-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Heptachlor epoxide	1024-57-3	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Methoxychlor	72-43-5	GENORG	µg/kg	1	0	0	17	17			8081_PEST_GC	8081_PEST_GC			
Toxaphene	8001-35-2	GENORG	µg/kg	1	0	0	170	170			8081_PEST_GC	8081_PEST_GC			

Table A-2. Summary Table for Non-RAD Constituents in Shallow Zone Soil Samples

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-46 (C3426)															
2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	93-76-5	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	93-72-1	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-D(2,4-Dichlorophenoxyacetic acid)	94-75-7	GENORG	µg/kg	1	0	0	33	33			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid)	94-82-6	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Aldrin	309-00-2	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Alpha-BHC	319-84-6	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Alpha-Chlordane	5103-71-9	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Dalapon	75-99-0	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Delta-BHC	319-86-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Dicamba	1918-00-9	GENORG	µg/kg	1	0	0	67	67			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dichloroprop	120-36-5	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dieldrin	60-57-1	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Dinoseb(2-secButyl-4,6-dinitrophenol)	88-85-7	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Endosulfan I	959-98-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Endosulfan II	33213-65-9	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Endosulfan sulfate	1031-07-8	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Endrin	72-20-8	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Endrin aldehyde	7421-93-4	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Endrin ketone	53494-70-5	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Gamma-BHC (Lindane)	58-89-9	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Gamma-Chlordane	5103-74-2	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Heptachlor	76-44-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Heptachlor epoxide	1024-57-3	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Methoxychlor	72-43-5	GENORG	µg/kg	1	0	0	17	17			8081_PEST_GC	8081_PEST_GC			
Toxaphene	8001-35-2	GENORG	µg/kg	1	0	0	170	170			8081_PEST_GC	8081_PEST_GC			

Table A-3. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-46 (C3426)															
2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	93-76-5	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	93-72-1	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-D(2,4-Dichlorophenoxyacetic acid)	94-75-7	GENORG	µg/kg	1	0	0	33	33			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid)	94-82-6	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Aldrin	309-00-2	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Alpha-BHC	319-84-6	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Alpha-Chlordane	5103-71-9	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Aroclor-1016	12674-11-2	GENORG	µg/kg	8	0	0	15	160			8082_PCB_GC	8082_PCB_GC			
Aroclor-1221	11104-28-2	GENORG	µg/kg	8	0	0	12	110			8082_PCB_GC	8082_PCB_GC			
Aroclor-1232	11141-16-5	GENORG	µg/kg	8	0	0	15	890			8082_PCB_GC	8082_PCB_GC			
Aroclor-1242	53469-21-9	GENORG	µg/kg	8	0	0	15	160			8082_PCB_GC	8082_PCB_GC			
Aroclor-1248	12672-29-6	GENORG	µg/kg	8	2	25	13	56	150	1600	8082_PCB_GC	8082_PCB_GC	63.5	66	B17TM6
Aroclor-1254	11097-69-1	GENORG	µg/kg	8	0	0	7.4	56			8082_PCB_GC	8082_PCB_GC			
Aroclor-1260	11096-82-5	GENORG	µg/kg	8	0	0	15	220			8082_PCB_GC	8082_PCB_GC			
Aroclor-1262	37324-23-5	GENORG	µg/kg	3	0	0	49	56			8082_PCB_GC	8082_PCB_GC			
Aroclor-1268	11100-14-4	GENORG	µg/kg	3	0	0	49	56			8082_PCB_GC	8082_PCB_GC			
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Calcium Carbonate	471-34-1	GENORG	%	6	3	50	0	0	1	6	D4373_GASGEN	D4373_GASGEN	117	119.5	B17T82
Carbon Dioxide	124-38-9	GENORG	%(vol)	5	5	100			0	1.3	VOA_GC_FLD	VOA_GC_FLD	90	92.5	B17XB6
Dalapon	75-99-0	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Delta-BHC	319-86-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Dicamba	1918-00-9	GENORG	µg/kg	1	0	0	67	67			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dichloroprop	120-36-5	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dieldrin	60-57-1	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Dinoseb(2-secButyl-4,6-dinitrophenol)	88-85-7	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Endosulfan I	959-98-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Endosulfan II	33213-65-9	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Endosulfan sulfate	1031-07-8	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Endrin	72-20-8	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			

Table A-3. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-46 (C3426)															
Endrin aldehyde	7421-93-4	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Endrin ketone	53494-70-5	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Gamma-BHC (Lindane)	58-89-9	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Gamma-Chlordane	5103-74-2	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Heptachlor	76-44-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Heptachlor epoxide	1024-57-3	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Methane	74-82-8	GENORG	%(vol)	45	5	11	0	0	0	0.1	GAS_IR_FLD	GAS_IR_FLD	65	66	B17RN3
Methoxychlor	72-43-5	GENORG	µg/kg	1	0	0	17	17			8081_PEST_GC	8081_PEST_GC			
Oil and grease	OIL/GREASE	GENORG	µg/kg	9	3	33	133000	720000	107000	2400000	9070_OILGREASE	9070_OILGREASE	63.5	66	B17TM6-B
Oxygen	7782-44-7	GENORG	%(vol)	22	22	100			14.2	19	GAS_IR_FLD	GAS_IR_FLD	49.5	50	B17RM7
Total Inorganic Carbon	TINC	GENORG	µg/kg	8	5	62	4700	60300	23800	5440000	9060_TOC	415.1_TOC	119.5	122	B17N65
Total organic carbon	TOC	GENORG	µg/kg	8	6	75	39500	97900	76500	2600000	9060_TOC	415.1_TOC	119.5	122	B17N65
Total petroleum hydrocarbons diesel range	TPHDIESEL	GENORG	µg/kg	9	0	0	20.9	13600			WTPH_DIESEL	WTPH_DIESEL			
Total petroleum hydrocarbons kerosene range	TPHKEROSENE	GENORG	µg/kg	9	0	0	20.9	13600			WTPH_DIESEL	WTPH_DIESEL			
Toxaphene	8001-35-2	GENORG	µg/kg	1	0	0	170	170			8081_PEST_GC	8081_PEST_GC			
Aluminum	7429-90-5	METAL	µg/kg	9	9	100			4970000	13100000	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N63
Antimony	7440-36-0	METAL	µg/kg	12	4	33	250	9320	828	4630	6010_METALS_ICP	6010_METALS_ICP	63.5	66	B17TM6
Arsenic	7440-38-2	METAL	µg/kg	12	8	67	1200	10300	1620	11000	6010_METALS_ICP	6010_METALS_ICP	47.5	50	B17N46
Barium	7440-39-3	METAL	µg/kg	12	12	100			36000	112000	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N65
Beryllium	7440-41-7	METAL	µg/kg	12	10	83	270	1430	280	640	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N65
Bismuth	7440-69-9	METAL	µg/kg	12	0	0	240	10400			6010_METALS_ICP	6010_METALS_ICP			
Cadmium	7440-43-9	METAL	µg/kg	12	8	67	70	75	1270	40200	6010_METALS_ICP	6010_METALS_ICP	90	92.5	B17N52
Calcium	7440-70-2	METAL	µg/kg	9	9	100			2310000	32900000	6010_METALS_ICP	6010_METALS_ICP	117	119.5	B17N60
Chromium	7440-47-3	METAL	µg/kg	12	12	100			12200	162000	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N63
Chromium	7440-47-3	METAL	ug/L	2	1	50	8.8	8.8	8.66	8.66	TCLP_200.8_MET_ICP	TCLP_200.8_MET_ICP	119.5	122	B17N63
Cobalt	7440-48-4	METAL	µg/kg	9	9	100			5800	20600	6010_METALS_ICP	6010_METALS_ICP	117	119.5	B17N60
Copper	7440-50-8	METAL	µg/kg	12	12	100			7000	26300	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N65
Hexavalent Chromium	18540-29-9	METAL	µg/kg	8	1	12	210	400	750	750	7196_CR6	7196_CR6	63.5	66	B17TM6-B
Iron	7439-89-6	METAL	µg/kg	9	9	100			12600000	49400000	6010_METALS_ICP	6010_METALS_ICP	117	119.5	B17N60
Lead	7439-92-1	METAL	µg/kg	12	8	67	63	63	3800	620000	6010_METALS_ICP	6010_METALS_ICP	115	117.5	B191Y7
Lithium	7439-93-2	METAL	µg/kg	12	12	100			5060	11900	6010_METALS_ICP	6010_METALS_ICP	115	117.5	B191Y7
Magnesium	7439-95-4	METAL	µg/kg	9	9	100			3120000	7130000	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N65
Manganese	7439-96-5	METAL	µg/kg	12	12	100			157000	2240000	6010_METALS_ICP	6010_METALS_ICP	184	186.5	B17N70
Mercury	7439-97-6	METAL	µg/kg	12	7	58	10	987	90	1020	7471_HG_CVAA	200.8_METALS_ICPMS	174	176.5	B17N67
Nickel	7440-02-0	METAL	µg/kg	12	12	100			8280	72900	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N63
Phosphorus	7723-14-0	METAL	µg/kg	12	12	100			464000	1470000	6010_METALS_ICP	6010_METALS_ICP	117	119.5	B17N60
Potassium	7440-09-7	METAL	µg/kg	9	9	100			89800	1730000	6010_METALS_ICP	6010_METALS_ICP	115	117.5	B191Y7
Selenium	7782-49-2	METAL	µg/kg	12	2	17	320	10500	1990	3760	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N63
Silver	7440-22-4	METAL	µg/kg	12	6	50	60	1110	958	2880	6010_METALS_ICP	6010_METALS_ICP	174	176.5	B17N67
Sodium	7440-23-5	METAL	µg/kg	9	9	100			145000	2660000	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N63
Strontium	7440-24-6	METAL	µg/kg	12	12	100			11700	87100	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N65
Uranium	7440-61-1	METAL	µg/kg	11	8	73	158	995	382	3140	200.8_METALS_ICPMS	UTOT_KPA	115	117.5	B191Y7
Vanadium	7440-62-2	METAL	µg/kg	9	9	100			23300	137000	6010_METALS_ICP	6010_METALS_ICP	117	119.5	B17N60

Table A-3. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-46 (C3426)															
Zinc	7440-66-6	METAL	µg/kg	12	12	100			31900	65800	6010_METALS_ICP	6010_METALS_ICP	117	119.5	B17N60
Bulk density - dry	BULKDENSITY-DRY	PHYSICAL	kg/m3	5	5	100			1430	2102	D2937_DENSITY	D2937_DENSITY	184	186.5	B17T84
Bulk density - wet	BULKDENSITY-WET	PHYSICAL	kg/m3	5	5	100			1608	2150	D2937_DENSITY	D2937_DENSITY	184	186.5	B17T84
Cation Exchange Capacity	CEC	PHYSICAL	mEQ/100g	6	6	100			2.8	25.6	9081_CATIONEXCH	9081_CATIONEXCH	226.5	229	B17NL7
Hydraulic Conductivity	HYDCON	PHYSICAL	cm/s	5	5	100			0.00000034	0.000029	D5084_HYDRCON	D5084_HYDRCON	224	226.5	B17NL4
Percent moisture (dry sample)	%MOISTURE-D	PHYSICAL	%	6	6	100			2.9	23.6	D2216_%MOIS	D2216_%MOIS	115	117.5	B191Y6
Percent moisture (wet sample)	%MOISTURE	PHYSICAL	%	6	6	100			2.8	19.1	D2216_%MOIS	D2216_%MOIS	115	117.5	B191Y6
Percent passing 1.5 inch sieve	PAS1.5IN	PHYSICAL	%	6	6	100			100	100	D422_PARTCLSIZE	D422_PARTCLSIZE	90	92.5	B17N53
Percent passing 3 inch sieve	PAS3IN	PHYSICAL	%	6	6	100			100	100	D422_PARTCLSIZE	D422_PARTCLSIZE	90	92.5	B17N53
Percent passing 3/4 inch sieve	PAS3/4IN	PHYSICAL	%	6	6	100			81.8	100	D422_PARTCLSIZE	D422_PARTCLSIZE	90	92.5	B17N53
Percent passing 3/8 inch sieve	PAS3/8IN	PHYSICAL	%	6	6	100			50.8	100	D422_PARTCLSIZE	D422_PARTCLSIZE	90	92.5	B17N53
Percent passing No.10 sieve	PAS#10	PHYSICAL	%	6	6	100			30.7	100	D422_PARTCLSIZE	D422_PARTCLSIZE	115	117.5	B191Y6
Percent passing No.100 sieve	PAS#100	PHYSICAL	%	6	6	100			17.3	96.2	D422_PARTCLSIZE	D422_PARTCLSIZE	115	117.5	B191Y6
Percent passing No.140 sieve	PAS#140	PHYSICAL	%	6	6	100			15	90.8	D422_PARTCLSIZE	D422_PARTCLSIZE	115	117.5	B191Y6
Percent passing No.20 sieve	PAS#20	PHYSICAL	%	6	6	100			27.4	100	D422_PARTCLSIZE	D422_PARTCLSIZE	115	117.5	B191Y6
Percent passing No.200 sieve	PAS#200	PHYSICAL	%	6	6	100			12	75.5	D422_PARTCLSIZE	D422_PARTCLSIZE	115	117.5	B191Y6
Percent passing No.4 sieve	PAS#4	PHYSICAL	%	6	6	100			36.8	100	D422_PARTCLSIZE	D422_PARTCLSIZE	90	92.5	B17N53
Percent passing No.40 sieve	PAS#40	PHYSICAL	%	6	6	100			25.2	100	D422_PARTCLSIZE	D422_PARTCLSIZE	115	117.5	B191Y6
Percent passing No.60 sieve	PAS#60	PHYSICAL	%	6	6	100			22.4	99.1	D422_PARTCLSIZE	D422_PARTCLSIZE	115	117.5	B191Y6
Percent Solids	%SOLIDS	PHYSICAL	%	5	5	100			80.9	97.2	%SOLIDS	%SOLIDS	184	186.5	B17T84
pH Measurement	PH	PHYSICAL	pH	10	10	100			3.86	9.379	9045_PH	150.1_PH	184	186.5	B17N70
Specific Gravity	SPECGVTY	PHYSICAL	unitless	5	5	100			2.7201	2.8383	D854_PARTLDEN	D854_PARTLDEN	119.5	122	B17RM3
Americium-241	14596-10-2	RAD	pCi/g	10	8	80	0.009	0.017	0.038	309000	AMCMISO_IE_PREC_AEA	AMCMISO_EIE_PLT_AEA	109.5	112	B18XR8
Antimony-125	14234-35-6	RAD	pCi/g	12	0	0	-0.057	792			GAMMA_GS	GAMMA_GS			
Carbon-14	14762-75-5	RAD	pCi/g	4	0	0	-13.7	65.9			C14_COX_LSC	C14_COX_LSC			
Cesium-134	13967-70-9	RAD	pCi/g	12	0	0	0.017	298			GAMMA_GS	GAMMA_GS			
Cesium-137	10045-97-3	RAD	pCi/g	14	3	21	-0.045	766	0.047	1.04	GAMMA_GS	GAMMA_GS	109.5	112	B17N57
Cobalt-60	10198-40-0	RAD	pCi/g	14	0	0	-0.025	383			GAMMA_GS	GAMMA_GS			
Europium-152	14683-23-9	RAD	pCi/g	14	1	7	-0.182	701	20.7	20.7	GAMMA_GS	GAMMA_GS	109.5	112	B18XR8
Europium-154	15585-10-1	RAD	pCi/g	14	1	7	-0.027	1020	44	44	GAMMA_GS	GAMMA_GS	109.5	112	B18XR8
Europium-155	14391-16-3	RAD	pCi/g	14	3	21	-0.048	788	0.057	20.6	GAMMA_GS	GAMMA_GS	109.5	112	B18XR8

Table A-3. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-46 (C3426)															
Gross alpha	12587-46-1	RAD	pCi/g	11	11	100			1.8	296000	ALPHA_GPC	ALPHA_GPC	109.5	112	B18XR8
Gross beta	12587-47-2	RAD	pCi/g	11	11	100			0.63	54800	BETA_GPC	BETA_GPC	109.5	112	B18XR8
Iodine-129	15046-84-1	RAD	pCi/g	4	0	0	-27.5	-0.393			I129_SEP_LEPS_GS	I129_SEP_LEPS_GS			
Neptunium-237	13994-20-2	RAD	pCi/g	11	4	36	-0.003	504	0.005	28.9	NP237_IE_PRECIP_AEA	NP237_LLE_PLATE_AEA	109.5	112	B18XR8
Nickel-63	13981-37-8	RAD	pCi/g	4	1	25	308	1540	2360	2360	NI63_LSC	NI63_LSC	115	117.5	B191Y7
Plutonium-238	13981-16-3	RAD	pCi/g	12	3	25	-0.004	19200	1.6	657	PUISO_IE_PRECIP_AEA	PUISO_PLATE_AEA	109.5	112	B18XR8
Plutonium-239/240	PU-239/240	RAD	pCi/g	12	9	75	0.002	0.006	0.03	115000	PUISO_IE_PRECIP_AEA	PUISO_PLATE_AEA	63.5	66	B17TM6
Potassium-40	13966-00-2	RAD	pCi/g	5	3	60	230	300	15.8	21.6	GAMMA_GS	GAMMA_GS	115	117.5	B191Y7
Protactinium-231	14331-85-2	RAD	pCi/g	4	1	25	0	7.4	12.9	12.9	PA231_IE_PLATE_AEA	PA231_IE_PLATE_AEA	63.5	66	B17TM6-A
Radium-226	13982-63-3	RAD	pCi/g	5	1	20	0.778	43	0.736	0.736	GAMMA_GS	GAMMA_GS	115	117.5	B191Y7
Radium-228	15262-20-1	RAD	pCi/g	5	1	20	2.4	66	2.79	2.79	GAMMA_GS	GAMMA_GS	109.5	112	B17N57
Selenium-79	15758-45-9	RAD	pCi/g	4	0	0	-69.1	-21.3			SE79_SEP_IE_LSC	SE79_SEP_IE_LSC			
Strontium-90	10098-97-2	RAD	pCi/g	3	2	67	7.86	7.86	0.741	13.4	SRISO_SEP_PRECIP_GPC	SRISO_SEP_PRECIP_GPC	63.5	66	B17TM6
Technetium-99	14133-76-7	RAD	pCi/g	4	1	25	-2.26	15.8	18	18	TC99_TR_SEP_GPC	TC99_TR_SEP_GPC	47.5	50	B17N46-A
Thorium-228	14274-82-9	RAD	pCi/g	2	0	0	1.06	2.05			THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA			
Thorium-230	14269-63-7	RAD	pCi/g	2	1	50	43	43	72	72	THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	115	117.5	B191Y7
Thorium-232	TH-232	RAD	pCi/g	5	3	60	-10.2	-5.29	0.322	0.698	RADISOTOPES_ICPMS	RADISOTOPES_ICPMS	109.5	112	B18XR8
Total beta radiostromtium	SR-RAD	RAD	pCi/g	2	0	0	-16.5	65.5			SRTOT_SEP_PRECIP_GPC	SRTOT_SEP_PRECIP_GPC			
Tritium	10028-17-8	RAD	pCi/g	6	0	0	-1.1	28.2			TRITIUM_COX_LSC	TRITIUM_COX_LSC			
Uranium-233/234	U-233/234	RAD	pCi/g	8	6	75	0	28.9	0.08	0.69	UIISO_IE_PRECIP_AEA	UIISO_IE_PRECIP_AEA	119.5	122	B17N63
Uranium-234	13966-29-5	RAD	pCi/g	3	3	100			0.422	11.8	RADISOTOPES_ICPMS	RADISOTOPES_ICPMS	47.5	50	B17N46
Uranium-235	15117-96-1	RAD	pCi/g	11	7	64	0	1.5	0.0147	0.13	RADISOTOPES_ICPMS	UIISO_IE_PRECIP_AEA	119.5	122	B17N63
Uranium-238	U-238	RAD	pCi/g	11	9	82	1.24	14.5	0.094	0.67	UIISO_IE_PRECIP_AEA	UIISO_IE_PRECIP_AEA	119.5	122	B17N63
1,2,4-Trichlorobenzene	120-82-1	SVOA	µg/kg	12	0	0	300	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,2,4-Trimethylbenzene	95-63-6	SVOA	µg/kg	6	0	0	120	140			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,2-Dichlorobenzene	95-50-1	SVOA	µg/kg	9	0	0	330	410			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,3-Dichlorobenzene	541-73-1	SVOA	µg/kg	9	0	0	330	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,4-Dichlorobenzene	106-46-7	SVOA	µg/kg	12	0	0	320	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4,5-Trichlorophenol	95-95-4	SVOA	µg/kg	9	0	0	75	940			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4,6-Trichlorophenol	88-06-2	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dichlorophenol	120-83-2	SVOA	µg/kg	9	0	0	82	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dimethylphenol	105-67-9	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dinitrophenol	51-28-5	SVOA	µg/kg	9	0	0	680	940			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dinitrotoluene	121-14-2	SVOA	µg/kg	12	0	0	68	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,6-Dinitrotoluene	606-20-2	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,6-di-tert-Butyl-p-benzoquinone	719-22-2	SVOA	µg/kg	2	2	100			4.5	6.2	1625_SVOA_GCMS	1625_SVOA_GCMS	117	119.5	B17N64
2-Chloronaphthalene	91-58-7	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			

Table A-3. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-46 (C3426)															
2-Chlorophenol	95-57-8	SVOA	µg/kg	12	0	0	150	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Methylnaphthalene	91-57-6	SVOA	µg/kg	9	0	0	180	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Methylphenol (cresol, o-)	95-48-7	SVOA	µg/kg	12	0	0	68	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Nitroaniline	88-74-4	SVOA	µg/kg	9	0	0	68	940			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Nitrophenol	88-75-5	SVOA	µg/kg	9	0	0	180	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
3,3'-Dichlorobenzidine	91-94-1	SVOA	µg/kg	9	0	0	82	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
3+4 Methylphenol (cresol, m+p)	65794-96-9	SVOA	µg/kg	9	0	0	120	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
3-Nitroaniline	99-09-2	SVOA	µg/kg	9	0	0	68	940			8270_SVOA_GCMS	8270_SVOA_GCMS			
4,6-Dinitro-2-methylphenol	534-52-1	SVOA	µg/kg	9	0	0	680	940			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Bromophenylphenyl ether	101-55-3	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chloro-3-methylphenol	59-50-7	SVOA	µg/kg	12	0	0	68	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chloroaniline	106-47-8	SVOA	µg/kg	9	0	0	96	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chlorophenylphenyl ether	7005-72-3	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Methylphenol (cresol, p-)	106-44-5	SVOA	µg/kg	4	0	0	330	960			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Nitroaniline	100-01-6	SVOA	µg/kg	9	0	0	250	940			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Nitrophenol	100-02-7	SVOA	µg/kg	12	0	0	660	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
Acenaphthene	83-32-9	SVOA	µg/kg	12	0	0	68	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
Acenaphthylene	208-96-8	SVOA	µg/kg	9	0	0	82	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Anthracene	120-12-7	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(a)anthracene	56-55-3	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(a)pyrene	50-32-8	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(b)fluoranthene	205-99-2	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(ghi)perylene	191-24-2	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(k)fluoranthene	207-08-9	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-chloro-1-methylethyl)ether	108-60-1	SVOA	µg/kg	9	0	0	260	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-Chloroethoxy)methane	111-91-1	SVOA	µg/kg	9	0	0	120	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-chloroethyl) ether	111-44-4	SVOA	µg/kg	9	0	0	250	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-ethylhexyl) phthalate	117-81-7	SVOA	µg/kg	9	0	0	330	630			8270_SVOA_GCMS	8270_SVOA_GCMS			
Butylbenzylphthalate	85-68-7	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Carbazole	86-74-8	SVOA	µg/kg	9	0	0	82	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Chrysene	218-01-9	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Cyclohexanone	108-94-1	SVOA	µg/kg	6	0	0	340	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Dibenz[a,h]anthracene	53-70-3	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Dibenzofuran	132-64-9	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Diethylphthalate	84-66-2	SVOA	µg/kg	9	2	22	190	380	220	230	8270_SVOA_GCMS	8270_SVOA_GCMS	224	226.5	B17N73
Dimethyl phthalate	131-11-3	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Di-n-butylphthalate	84-74-2	SVOA	µg/kg	9	3	33	89	380	94	220	8270_SVOA_GCMS	8270_SVOA_GCMS	224	226.5	B17N73
Di-n-octylphthalate	117-84-0	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Fluoranthene	206-44-0	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Fluorene	86-73-7	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorobenzene	118-74-1	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorobutadiene	87-68-3	SVOA	µg/kg	9	0	0	330	410			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorocyclopentadiene	77-47-4	SVOA	µg/kg	9	0	0	320	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachloroethane	67-72-1	SVOA	µg/kg	9	0	0	330	530			8270_SVOA_GCMS	8270_SVOA_GCMS			
Indeno(1,2,3-cd)pyrene	193-39-5	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			

Table A-3. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-46 (C3426)															
Isophorone	78-59-1	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Naphthalene	91-20-3	SVOA	µg/kg	9	0	0	290	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Nitrobenzene	98-95-3	SVOA	µg/kg	9	0	0	270	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
n-Nitrosodi-n-dipropylamine	621-64-7	SVOA	µg/kg	12	0	0	68	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
n-Nitrosodiphenylamine	86-30-6	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Pentachlorophenol	87-86-5	SVOA	µg/kg	12	0	0	310	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
Phenanthrene	85-01-8	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Phenol	108-95-2	SVOA	µg/kg	12	0	0	100	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
Phenyl sulfone	127-63-9	SVOA	µg/kg	1	1	100			240	240	8270_SVOA_GCMS	8270_SVOA_GCMS	226.5	229	B17NL5
Pyrene	129-00-0	SVOA	µg/kg	12	0	0	68	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
Tributyl phosphate	126-73-8	SVOA	µg/kg	12	3	25	68	960	35000	2100000	8270_SVOA_GCMS	8270_SVOA_GCMS	63.5	66	B17TM6
1,1,1-Trichloroethane	71-55-6	VOA	µg/kg	19	0	0	0.59	140			8260_VOA_GCMS	8260_VOA_GCMS			
1,1,2,2-Tetrachloroethane	79-34-5	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
1,1,2-Trichloroethane	79-00-5	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
1,1-Dichloroethane	75-34-3	VOA	µg/kg	19	0	0	0.67	300			8260_VOA_GCMS	8260_VOA_GCMS			
1,1-Dichloroethene	75-35-4	VOA	µg/kg	19	1	5	0.64	150	1.1	1.1	8260_VOA_GCMS	8260_VOA_GCMS	115	117.5	B191Y4
1,2-Dibromo-3-chloropropane	96-12-8	VOA	µg/kg	1	1	100			588	588	8260_VOA_GCMS	8260_VOA_GCMS	115	117.5	B191Y4
1,2-Dichloroethane	107-06-2	VOA	µg/kg	19	0	0	0.64	150			8260_VOA_GCMS	8260_VOA_GCMS			
1,2-Dichloroethene (Total)	540-59-0	VOA	µg/kg	19	0	0	1.2	270			8260_VOA_GCMS	8260_VOA_GCMS			
1,2-Dichloropropane	78-87-5	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
1-Butanol	71-36-3	VOA	µg/kg	11	5	45	38	43	76.174	1500	8260_VOA_GCMS	8260_VOA_GCMS	109.5	112	B18XW3
2-Butanone	78-93-3	VOA	PPM(V/V)	34	18	53	1	1.28	1.05	3.25	VOA_B&K_FLD	VOA_B&K_FLD	110	112	B17XB9
2-Butanone	78-93-3	VOA	µg/kg	19	6	32	1.9	160	22	80	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64-A
2-Ethyl-1-hexanol	104-76-7	VOA	µg/kg	2	2	100			8.5	24	8260_VOA_GCMS	8260_VOA_GCMS	109.5	112	B18XW3
2-Hexanone	591-78-6	VOA	µg/kg	13	4	31	1.9	11	1.3	7.6	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64-A
2-Methyl-2-Propanol	75-65-0	VOA	µg/kg	1	1	100			4.3	4.3	8260_VOA_GCMS	8260_VOA_GCMS	90	92.5	B17N61
2-Pentanone	107-87-9	VOA	µg/kg	2	2	100			6	6.6	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64
2-Pentanone, 4-Methyl	108-10-1	VOA	µg/kg	19	1	5	0.62	140	1.2	1.2	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64
2-Propanol	67-63-0	VOA	µg/kg	1	1	100			10	10	8260_VOA_GCMS	8260_VOA_GCMS	115	117.5	B191Y4
Acetone	67-64-1	VOA	µg/kg	19	10	53	1.9	180	9	660	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N68
Acetonitrile	75-05-8	VOA	µg/kg	9	0	0	3.8	22			8260_VOA_GCMS	8260_VOA_GCMS			
Benzene	71-43-2	VOA	µg/kg	19	1	5	0.56	130	0.97	0.97	8260_VOA_GCMS	8260_VOA_GCMS	115	117.5	B191Y4
Benzoic acid, 2-[[trimethylsilyloxy]-trimethylsilyl ester	3789-85-3	VOA	µg/kg	1	1	100			6.3	6.3	8260_VOA_GCMS	8260_VOA_GCMS	115	117.5	B191Y4
Bromodichloromethane	75-27-4	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
Bromoform	75-25-2	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
Bromomethane	74-83-9	VOA	µg/kg	9	1	11	1.9	10	31	31	8260_VOA_GCMS	8260_VOA_GCMS	119.5	122	B18XT1
Butyraldehyde	123-72-8	VOA	µg/kg	1	1	100			18	18	8260_VOA_GCMS	8260_VOA_GCMS	109.5	112	B18XW3
Carbon Dioxide	124-38-9	VOA	%(vol)	40	20	50	0	0	0	3.2	VOA_GC_FLD	VOA_GC_FLD	66	67	B17X90
Carbon disulfide	75-15-0	VOA	µg/kg	10	1	10	1.9	11	11	11	8260_VOA_GCMS	8260_VOA_GCMS	115	117.5	B18XT1
Carbon tetrachloride	56-23-5	VOA	PPM(V/V)	65	56	86	1	25.6	1.01	9700	VOA_B&K_FLD	VOA_B&K_FLD	110	112	B17XB9
Carbon tetrachloride	56-23-5	VOA	µg/kg	19	7	37	1.9	240	14	380000	8260_VOA_GCMS	8260_VOA_GCMS	63.5	66	B17TM6
Chlorobenzene	108-90-7	VOA	µg/kg	19	1	5	0.64	150	0.98	0.98	8260_VOA_GCMS	8260_VOA_GCMS	115	117.5	B191Y4
Chloroethane	75-00-3	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			

Table A-3. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-46 (C3426)															
Chloroform	67-66-3	VOA	PPM(V/V)	65	45	69	1	1.26	1.06	130	VOA_B&K_FLD	VOA_B&K_FLD	66	67	B17X92
Chloroform	67-66-3	VOA	µg/kg	19	6	32	0.78	140	0.96	4900	8260_VOA_GCMS	8260_VOA_GCMS	63.5	66	B17TM6
Chloromethane	74-87-3	VOA	µg/kg	19	1	5	1.4	620	110	110	8260_VOA_GCMS	8260_VOA_GCMS	119.5	122	B18XT1
cis-1,2-Dichloroethylene	156-59-2	VOA	µg/kg	7	0	0	1.9	5			8260_VOA_GCMS	8260_VOA_GCMS			
cis-1,3-Dichloropropene	10061-01-5	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
Dibromochloromethane	124-48-1	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
Ethylbenzene	100-41-4	VOA	µg/kg	19	0	0	0.82	190			8260_VOA_GCMS	8260_VOA_GCMS			
Hexachloroethane	67-72-1	VOA	µg/kg	2	2	100			5.2	15	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64-A
Hexanal	66-25-1	VOA	µg/kg	1	1	100			13	13	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64-A
Hexane	110-54-3	VOA	µg/kg	9	1	11	1.9	11	2	2	8260_VOA_GCMS	8260_VOA_GCMS	90	92.5	B17N52
Methylene chloride	75-09-2	VOA	PPM(V/V)	34	33	97	1.08	1.08	1.04	37	VOA_B&K_FLD	VOA_B&K_FLD	110	112	B17XC3
Methylene chloride	75-09-2	VOA	µg/kg	19	2	11	1.1	250	12	20	8260_VOA_GCMS	8260_VOA_GCMS	119.5	122	B18XT1
n-Butylbenzene	104-51-8	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
Nitromethane	75-52-5	VOA	µg/kg	1	1	100			5.5	5.5	8260_VOA_GCMS	8260_VOA_GCMS	109.5	112	B18XW3
n-Valeraldehyde	110-62-3	VOA	µg/kg	1	1	100			8.9	8.9	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64-A
Styrene	100-42-5	VOA	µg/kg	10	2	20	1.9	11	2.9	3.4	8260_VOA_GCMS	8260_VOA_GCMS	184	186.5	B17N70
Tetrachloroethene	127-18-4	VOA	µg/kg	19	5	26	0.76	130	0.94	17000	8260_VOA_GCMS	8260_VOA_GCMS	63.5	66	B17TM6
Tetrahydrofuran	109-99-9	VOA	µg/kg	5	5	100			9.6	112	8260_VOA_GCMS	8260_VOA_GCMS	109.5	112	B18XW3
Toluene	108-88-3	VOA	µg/kg	19	2	11	0.54	130	0.97	1.3	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64
trans-1,2-Dichloroethylene	156-60-5	VOA	µg/kg	7	0	0	1.9	5			8260_VOA_GCMS	8260_VOA_GCMS			
trans-1,3-Dichloropropene	10061-02-6	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
Tribromoethylene	598-16-3	VOA	µg/kg	1	1	100			5.7	5.7	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64-A
Trichloroethene	79-01-6	VOA	µg/kg	19	1	5	0.72	170	1.1	1.1	8260_VOA_GCMS	8260_VOA_GCMS	115	117.5	B191Y4
Vinyl chloride	75-01-4	VOA	µg/kg	19	0	0	1.3	560			8260_VOA_GCMS	8260_VOA_GCMS			
Xylenes (total)	1330-20-7	VOA	µg/kg	19	0	0	1.3	310			8260_VOA_GCMS	8260_VOA_GCMS			
Ammonia	7664-41-7	WETCHEM	µg/kg	1	1	100			7050	7050	350.3_AMMONIA	350.3_AMMONIA	90	92.5	B17N52
Ammonium ion	14798-03-9	WETCHEM	µg/kg	9	7	78	22100	28600	923	192000	300.7_IC	300.7_IC	109.5	112	B18XR8
Chloride	16887-00-6	WETCHEM	µg/kg	12	12	100			3300	51400	300.0_ANIONS_IC	300.0_ANIONS_IC	63.5	66	B17TM6
Cyanide	57-12-5	WETCHEM	µg/kg	10	0	0	200	624			335.2_CYANIDE	9010_CYANIDE			
Fluoride	16984-48-8	WETCHEM	µg/kg	12	7	58	1150	24900	2400	7800	300.0_ANIONS_IC	300.0_ANIONS_IC	90	92.5	B17N52
Nitrate	14797-55-8	WETCHEM	µg/kg	12	12	100			28900	5910000	300.0_ANIONS_IC	300.0_ANIONS_IC	109.5	112	B18XR8
Nitrite	14797-65-0	WETCHEM	µg/kg	12	3	25	1420	224000	2060	12100	300.0_ANIONS_IC	300.0_ANIONS_IC	47.5	50	B17N46
Nitrogen in Nitrite and Nitrate	NO2+NO3-N	WETCHEM	µg/kg	8	8	100			7500	432000	353.2_NO3/NO2	353.2_NO3/NO2	119.5	122	B17N65
Phosphate	14265-44-2	WETCHEM	µg/kg	12	0	0	1200	249000			300.0_ANIONS_IC	300.0_ANIONS_IC			
Sulfate	14808-79-8	WETCHEM	µg/kg	12	9	75	1200	287000	8100	456000	300.0_ANIONS_IC	300.0_ANIONS_IC	63.5	66	B17TM6
Sulfide	18496-25-8	WETCHEM	µg/kg	9	1	11	10600	54800	69300	69300	9030_SULFIDE	9030_SULFIDE	174	176.5	B17N69
Water (Vapor)	7732-18-5	WETCHEM	PPM(V/V)	65	65	100			2290	16900	H2O_B&K_FLD	H2O_B&K_FLD	184	186.3	B1B7K0

Table A-4. Summary Table for RAD Only Constituents in Deep Zone Soil Samples

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-46 (C3426)															
Americium-241	14596-10-2	RAD	pCi/g	10	8	80	0.009	0.017	0.038	309000	AMCMISO_IE_PREC_AEA	AMCMISO_IE_PLT_AEA	109.5	112	B18XR8
Antimony-125	14234-35-6	RAD	pCi/g	12	0	0	-0.057	792			GAMMA_GS	GAMMA_GS			
Carbon-14	14762-75-5	RAD	pCi/g	4	0	0	-13.7	65.9			C14_COX_LSC	C14_COX_LSC			
Cesium-134	13967-70-9	RAD	pCi/g	12	0	0	-0.017	298			GAMMA_GS	GAMMA_GS			
Cesium-137	10045-97-3	RAD	pCi/g	14	3	21	-0.045	766	0.047	1.04	GAMMA_GS	GAMMA_GS	109.5	112	B17N57
Cobalt-60	10198-40-0	RAD	pCi/g	14	0	0	-0.025	383			GAMMA_GS	GAMMA_GS			
Europium-152	14683-23-9	RAD	pCi/g	14	1	7	-0.182	701	20.7	20.7	GAMMA_GS	GAMMA_GS	109.5	112	B18XR8
Europium-154	15585-10-1	RAD	pCi/g	14	1	7	-0.027	1020	44	44	GAMMA_GS	GAMMA_GS	109.5	112	B18XR8
Europium-155	14391-16-3	RAD	pCi/g	14	3	21	-0.048	788	0.057	20.6	GAMMA_GS	GAMMA_GS	109.5	112	B18XR8
Gross alpha	12587-46-1	RAD	pCi/g	11	11	100			1.8	296000	ALPHA_GPC	ALPHA_GPC	109.5	112	B18XR8
Gross beta	12587-47-2	RAD	pCi/g	11	11	100			0.63	54800	BETA_GPC	BETA_GPC	109.5	112	B18XR8
Iodine-129	15046-84-1	RAD	pCi/g	4	0	0	-27.5	-0.393			I129_SEP_LEPS_GS	I129_SEP_LEPS_GS			
Neptunium-237	13994-20-2	RAD	pCi/g	11	4	36	-0.003	504	0.005	28.9	NP237_IE_PRECIP_AEA	NP237_LLE_PLATE_AEA	109.5	112	B18XR8
Nickel-63	13981-37-8	RAD	pCi/g	4	1	25	308	1540	2360	2360	NI63_LSC	NI63_LSC	115	117.5	B191Y7
Plutonium-238	13981-16-3	RAD	pCi/g	12	3	25	-0.004	19200	1.6	657	PUISO_IE_PRECIP_AEA	PUISO_PLATE_AEA	109.5	112	B18XR8
Plutonium-239/240	PU-239/240	RAD	pCi/g	12	9	75	0.002	0.006	0.03	115000	PUISO_IE_PRECIP_AEA	PUISO_PLATE_AEA	63.5	66	B17TM6
Potassium-40	13966-00-2	RAD	pCi/g	5	3	60	230	300	15.8	21.6	GAMMA_GS	GAMMA_GS	115	117.5	B191Y7
Protactinium-231	14331-85-2	RAD	pCi/g	4	1	25	0	7.4	12.9	12.9	PA231_IE_PLATE_AEA	PA231_IE_PLATE_AEA	63.5	66	B17TM6-A
Radium-226	13982-63-3	RAD	pCi/g	5	1	20	0.778	43	0.736	0.736	GAMMA_GS	GAMMA_GS	115	117.5	B191Y7
Radium-228	15262-20-1	RAD	pCi/g	5	1	20	2.4	66	2.79	2.79	GAMMA_GS	GAMMA_GS	109.5	112	B17N57
Selenium-79	15758-45-9	RAD	pCi/g	4	0	0	-69.1	-21.3			SE79_SEP_IE_LSC	SE79_SEP_IE_LSC			
Strontium-90	10098-97-2	RAD	pCi/g	3	2	67	7.86	7.86	0.741	13.4	SRISO_SEP_PRECIP_GPC	SRISO_SEP_PRECIP_GPC	63.5	66	B17TM6
Technetium-99	14133-76-7	RAD	pCi/g	4	1	25	-2.26	15.8	18	18	TC99_TR_SEP_GPC	TC99_TR_SEP_GPC	47.5	50	B17N46-A
Thorium-228	14274-82-9	RAD	pCi/g	2	0	0	1.06	2.05			THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA			
Thorium-230	14269-63-7	RAD	pCi/g	2	1	50	43	43	72	72	THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	115	117.5	B191Y7
Thorium-232	TH-232	RAD	pCi/g	5	3	60	-10.2	-5.29	0.322	0.698	RADISOTOPES_ICPMS	RADISOTOPES_ICPMS	109.5	112	B18XR8
Total beta radiostrontium	SR-RAD	RAD	pCi/g	2	0	0	-16.5	65.5			SRTOT_SEP_PRECIP_GPC	SRTOT_SEP_PRECIP_GPC			
Tritium	10028-17-8	RAD	pCi/g	6	0	0	-1.1	28.2			TRITIUM_COX_LSC	TRITIUM_COX_LSC			
Uranium-233/234	U-233/234	RAD	pCi/g	8	6	75	0	28.9	0.08	0.69	UIISO_IE_PRECIP_AEA	UIISO_IE_PRECIP_AEA	119.5	122	B17N63
Uranium-234	13966-29-5	RAD	pCi/g	3	3	100			0.422	11.8	RADISOTOPES_ICPMS	RADISOTOPES_ICPMS	47.5	50	B17N46
Uranium-235	15117-96-1	RAD	pCi/g	11	7	64	0	1.5	0.0147	0.13	RADISOTOPES_ICPMS	UIISO_IE_PRECIP_AEA	119.5	122	B17N63
Uranium-238	U-238	RAD	pCi/g	11	9	82	1.24	14.5	0.094	0.67	UIISO_IE_PRECIP_AEA	UIISO_IE_PRECIP_AEA	119.5	122	B17N63

Table A-5. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (6 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-46 (C3426)															
2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	93-76-5	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	93-72-1	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-D(2,4-Dichlorophenoxyacetic acid)	94-75-7	GENORG	µg/kg	1	0	0	33	33			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid)	94-82-6	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Aldrin	309-00-2	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Alpha-BHC	319-84-6	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Alpha-Chlordane	5103-71-9	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Aroclor-1016	12674-11-2	GENORG	µg/kg	8	0	0	15	160			8082_PCB_GC	8082_PCB_GC			
Aroclor-1221	11104-28-2	GENORG	µg/kg	8	0	0	12	110			8082_PCB_GC	8082_PCB_GC			
Aroclor-1232	11141-16-5	GENORG	µg/kg	8	0	0	15	890			8082_PCB_GC	8082_PCB_GC			
Aroclor-1242	53469-21-9	GENORG	µg/kg	8	0	0	15	160			8082_PCB_GC	8082_PCB_GC			
Aroclor-1248	12672-29-6	GENORG	µg/kg	8	2	25	13	56	150	1600	8082_PCB_GC	8082_PCB_GC	63.5	66	B17TM6
Aroclor-1254	11097-69-1	GENORG	µg/kg	8	0	0	7.4	56			8082_PCB_GC	8082_PCB_GC			
Aroclor-1260	11096-82-5	GENORG	µg/kg	8	0	0	15	220			8082_PCB_GC	8082_PCB_GC			
Aroclor-1262	37324-23-5	GENORG	µg/kg	3	0	0	49	56			8082_PCB_GC	8082_PCB_GC			
Aroclor-1268	11100-14-4	GENORG	µg/kg	3	0	0	49	56			8082_PCB_GC	8082_PCB_GC			
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Calcium Carbonate	471-34-1	GENORG	%	6	3	50	0	0	1	6	D4373_GASGEN	D4373_GASGEN	117	119.5	B17T82
Carbon Dioxide	124-38-9	GENORG	%(vol)	5	5	100			0	1.3	VOA_GC_FLD	VOA_GC_FLD	90	92.5	B17XB6
Dalapon	75-99-0	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Delta-BHC	319-86-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Dicamba	1918-00-9	GENORG	µg/kg	1	0	0	67	67			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dichloroprop	120-36-5	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dieldrin	60-57-1	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Dinoseb(2-secButyl-4,6-dinitrophenol)	88-85-7	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Endosulfan I	959-98-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Endosulfan II	33213-65-9	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Endosulfan sulfate	1031-07-8	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Endrin	72-20-8	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			

Table A-5. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (6 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-46 (C3426)															
Endrin aldehyde	7421-93-4	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Endrin ketone	53494-70-5	GENORG	µg/kg	1	0	0	3.4	3.4			8081_PEST_GC	8081_PEST_GC			
Gamma-BHC (Lindane)	58-89-9	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Gamma-Chlordane	5103-74-2	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Heptachlor	76-44-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Heptachlor epoxide	1024-57-3	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Methane	74-82-8	GENORG	%(vol)	45	5	11	0	0	0	0.1	GAS_IR_FLD	GAS_IR_FLD	65	66	B17RN3
Methoxychlor	72-43-5	GENORG	µg/kg	1	0	0	17	17			8081_PEST_GC	8081_PEST_GC			
Oil and grease	OIL/GREASE	GENORG	µg/kg	9	3	33	133000	720000	107000	2400000	9070_OILGREASE	9070_OILGREASE	63.5	66	B17TM6-B
Oxygen	7782-44-7	GENORG	%(vol)	22	22	100			14.2	19	GAS_IR_FLD	GAS_IR_FLD	49.5	50	B17RM7
Total Inorganic Carbon	TINC	GENORG	µg/kg	8	5	62	4700	60300	23800	5440000	9060_TOC	415.1_TOC	119.5	122	B17N65
Total organic carbon	TOC	GENORG	µg/kg	8	6	75	39500	97900	76500	2600000	9060_TOC	415.1_TOC	119.5	122	B17N65
Total petroleum hydrocarbons diesel range	TPHDIESEL	GENORG	µg/kg	9	0	0	20.9	13600			WTPH_DIESEL	WTPH_DIESEL			
Total petroleum hydrocarbons kerosene range	TPHKEROSENE	GENORG	µg/kg	9	0	0	20.9	13600			WTPH_DIESEL	WTPH_DIESEL			
Toxaphene	8001-35-2	GENORG	µg/kg	1	0	0	170	170			8081_PEST_GC	8081_PEST_GC			
Aluminum	7429-90-5	METAL	µg/kg	9	9	100			4970000	13100000	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N63
Antimony	7440-36-0	METAL	µg/kg	12	4	33	250	9320	828	4630	6010_METALS_ICP	6010_METALS_ICP	63.5	66	B17TM6
Arsenic	7440-38-2	METAL	µg/kg	12	8	67	1200	10300	1620	11000	6010_METALS_ICP	6010_METALS_ICP	47.5	50	B17N46
Barium	7440-39-3	METAL	µg/kg	12	12	100			36000	112000	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N65
Beryllium	7440-41-7	METAL	µg/kg	12	10	83	270	1430	280	640	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N65
Bismuth	7440-69-9	METAL	µg/kg	12	0	0	240	10400			6010_METALS_ICP	6010_METALS_ICP			
Cadmium	7440-43-9	METAL	µg/kg	12	8	67	70	75	1270	40200	6010_METALS_ICP	6010_METALS_ICP	90	92.5	B17N52
Calcium	7440-70-2	METAL	µg/kg	9	9	100			2310000	32900000	6010_METALS_ICP	6010_METALS_ICP	117	119.5	B17N60
Chromium	7440-47-3	METAL	µg/L	2	1	50	8.8	8.8	8.66	8.66	TCLP_200.8_MET_ICP	TCLP_200.8_MET_ICP	119.5	122	B17N63
Chromium	7440-47-3	METAL	µg/kg	12	12	100			12200	162000	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N63
Cobalt	7440-48-4	METAL	µg/kg	9	9	100			5800	20600	6010_METALS_ICP	6010_METALS_ICP	117	119.5	B17N60
Copper	7440-50-8	METAL	µg/kg	12	12	100			7000	26300	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N65
Hexavalent Chromium	18540-29-9	METAL	µg/kg	8	1	12	210	400	750	750	7196_CR6	7196_CR6	63.5	66	B17TM6-B
Iron	7439-89-6	METAL	µg/kg	9	9	100			12600000	49400000	6010_METALS_ICP	6010_METALS_ICP	117	119.5	B17N60
Lead	7439-92-1	METAL	µg/kg	12	8	67	63	63	3800	620000	6010_METALS_ICP	6010_METALS_ICP	115	117.5	B191Y7
Lithium	7439-93-2	METAL	µg/kg	12	12	100			5060	11900	6010_METALS_ICP	6010_METALS_ICP	115	117.5	B191Y7
Magnesium	7439-95-4	METAL	µg/kg	9	9	100			3120000	7130000	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N65
Manganese	7439-96-5	METAL	µg/kg	12	12	100			157000	2240000	6010_METALS_ICP	6010_METALS_ICP	184	186.5	B17N70
Mercury	7439-97-6	METAL	µg/kg	12	7	58	10	987	90	1020	7471_HG_CVAA	200.8_METALS_ICPMS	174	176.5	B17N67
Nickel	7440-02-0	METAL	µg/kg	12	12	100			8280	72900	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N63
Phosphorus	7723-14-0	METAL	µg/kg	12	12	100			464000	1470000	6010_METALS_ICP	6010_METALS_ICP	117	119.5	B17N60
Potassium	7440-09-7	METAL	µg/kg	9	9	100			89800	1730000	6010_METALS_ICP	6010_METALS_ICP	115	117.5	B191Y7
Selenium	7782-49-2	METAL	µg/kg	12	2	17	320	10500	1990	3760	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N63
Silver	7440-22-4	METAL	µg/kg	12	6	50	60	1110	958	2880	6010_METALS_ICP	6010_METALS_ICP	174	176.5	B17N67
Sodium	7440-23-5	METAL	µg/kg	9	9	100			145000	2660000	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N63
Strontium	7440-24-6	METAL	µg/kg	12	12	100			11700	87100	6010_METALS_ICP	6010_METALS_ICP	119.5	122	B17N65
Uranium	7440-61-1	METAL	µg/kg	11	8	73	158	995	382	3140	200.8_METALS_ICPMS	UTOT_KPA	115	117.5	B191Y7
Vanadium	7440-62-2	METAL	µg/kg	9	9	100			23300	137000	6010_METALS_ICP	6010_METALS_ICP	117	119.5	B17N60

Table A-5. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (6 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-46 (C3426)															
Zinc	7440-66-6	METAL	µg/kg	12	12	100			31900	65800	6010_METALS_ICP	6010_METALS_ICP	117	119.5	B17N60
Bulk density - dry	BULKDENSITY-DRY	PHYSICAL	kg/m3	5	5	100			1430	2102	D2937_DENSITY	D2937_DENSITY	184	186.5	B17T84
Bulk density - wet	BULKDENSITY-WET	PHYSICAL	kg/m3	5	5	100			1608	2150	D2937_DENSITY	D2937_DENSITY	184	186.5	B17T84
Cation Exchange Capacity	CEC	PHYSICAL	mEQ/100g	6	6	100			2.8	25.6	9081_CATIONEXCH	9081_CATIONEXCH	226.5	229	B17NL7
Hydraulic Conductivity	HYDCON	PHYSICAL	cm/s	5	5	100			0.00000034	0.000029	D5084_HYDRCON	D5084_HYDRCON	224	226.5	B17NL4
Percent moisture (dry sample)	%MOISTURE-D	PHYSICAL	%	6	6	100			2.9	23.6	D2216_%MOIS	D2216_%MOIS	115	117.5	B191Y6
Percent moisture (wet sample)	%MOISTURE-E	PHYSICAL	%	6	6	100			2.8	19.1	D2216_%MOIS	D2216_%MOIS	115	117.5	B191Y6
Percent passing 1.5 inch sieve	PAS1.5IN	PHYSICAL	%	6	6	100			100	100	D422_PARTCLSIZE	D422_PARTCLSIZE	90	92.5	B17N53
Percent passing 3 inch sieve	PAS3IN	PHYSICAL	%	6	6	100			100	100	D422_PARTCLSIZE	D422_PARTCLSIZE	90	92.5	B17N53
Percent passing 3/4 inch sieve	PAS3/4IN	PHYSICAL	%	6	6	100			81.8	100	D422_PARTCLSIZE	D422_PARTCLSIZE	90	92.5	B17N53
Percent passing 3/8 inch sieve	PAS3/8IN	PHYSICAL	%	6	6	100			50.8	100	D422_PARTCLSIZE	D422_PARTCLSIZE	90	92.5	B17N53
Percent passing No.10 sieve	PAS#10	PHYSICAL	%	6	6	100			30.7	100	D422_PARTCLSIZE	D422_PARTCLSIZE	115	117.5	B191Y6
Percent passing No.100 sieve	PAS#100	PHYSICAL	%	6	6	100			17.3	96.2	D422_PARTCLSIZE	D422_PARTCLSIZE	115	117.5	B191Y6
Percent passing No.140 sieve	PAS#140	PHYSICAL	%	6	6	100			15	90.8	D422_PARTCLSIZE	D422_PARTCLSIZE	115	117.5	B191Y6
Percent passing No.20 sieve	PAS#20	PHYSICAL	%	6	6	100			27.4	100	D422_PARTCLSIZE	D422_PARTCLSIZE	115	117.5	B191Y6
Percent passing No.200 sieve	PAS#200	PHYSICAL	%	6	6	100			12	75.5	D422_PARTCLSIZE	D422_PARTCLSIZE	115	117.5	B191Y6
Percent passing No.4 sieve	PAS#4	PHYSICAL	%	6	6	100			36.8	100	D422_PARTCLSIZE	D422_PARTCLSIZE	90	92.5	B17N53
Percent passing No.40 sieve	PAS#40	PHYSICAL	%	6	6	100			25.2	100	D422_PARTCLSIZE	D422_PARTCLSIZE	115	117.5	B191Y6
Percent passing No.60 sieve	PAS#60	PHYSICAL	%	6	6	100			22.4	99.1	D422_PARTCLSIZE	D422_PARTCLSIZE	115	117.5	B191Y6
Percent Solids	%SOLIDS	PHYSICAL	%	5	5	100			80.9	97.2	%SOLIDS	%SOLIDS	184	186.5	B17T84
pH Measurement	PH	PHYSICAL	pH	10	10	100			3.86	9.379	9045_PH	150.1_PH	184	186.5	B17N70
Specific Gravity	SPECGVTY	PHYSICAL	unitless	5	5	100			2.7201	2.8383	D854_PARTLDEN	D854_PARTLDEN	119.5	122	B17RM3
1,2,4-Trichlorobenzene	120-82-1	SVOA	µg/kg	12	0	0	300	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,2,4-Trimethylbenzene	95-63-6	SVOA	µg/kg	6	0	0	120	140			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,2-Dichlorobenzene	95-50-1	SVOA	µg/kg	9	0	0	330	410			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,3-Dichlorobenzene	541-73-1	SVOA	µg/kg	9	0	0	330	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,4-Dichlorobenzene	106-46-7	SVOA	µg/kg	12	0	0	320	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4,5-Trichlorophenol	95-95-4	SVOA	µg/kg	9	0	0	75	940			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4,6-Trichlorophenol	88-06-2	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dichlorophenol	120-83-2	SVOA	µg/kg	9	0	0	82	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dimethylphenol	105-67-9	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dinitrophenol	51-28-5	SVOA	µg/kg	9	0	0	680	940			8270_SVOA_GCMS	8270_SVOA_GCMS			

Table A-5. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (6 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-46 (C3426)															
2,4-Dinitrotoluene	121-14-2	SVOA	µg/kg	12	0	0	68	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,6-Dinitrotoluene	606-20-2	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,6-di-tert-Butyl-p-benzoquinone	719-22-2	SVOA	µg/kg	2	2	100			4.5	6.2	1625_SVOA_GCMS	1625_SVOA_GCMS	117	119.5	B17N64
2-Chloronaphthalene	91-58-7	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Chlorophenol	95-57-8	SVOA	µg/kg	12	0	0	150	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Methylnaphthalene	91-57-6	SVOA	µg/kg	9	0	0	180	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Methylphenol (cresol, o-)	95-48-7	SVOA	µg/kg	12	0	0	68	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Nitroaniline	88-74-4	SVOA	µg/kg	9	0	0	68	940			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Nitrophenol	88-75-5	SVOA	µg/kg	9	0	0	180	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
3,3'-Dichlorobenzidine	91-94-1	SVOA	µg/kg	9	0	0	82	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
3+4 Methylphenol (cresol, m+p)	65794-96-9	SVOA	µg/kg	9	0	0	120	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
3-Nitroaniline	99-09-2	SVOA	µg/kg	9	0	0	68	940			8270_SVOA_GCMS	8270_SVOA_GCMS			
4,6-Dinitro-2-methylphenol	534-52-1	SVOA	µg/kg	9	0	0	680	940			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Bromophenylphenyl ether	101-55-3	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chloro-3-methylphenol	59-50-7	SVOA	µg/kg	12	0	0	68	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chloroaniline	106-47-8	SVOA	µg/kg	9	0	0	96	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chlorophenylphenyl ether	7005-72-3	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Methylphenol (cresol, p-)	106-44-5	SVOA	µg/kg	4	0	0	330	960			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Nitroaniline	100-01-6	SVOA	µg/kg	9	0	0	250	940			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Nitrophenol	100-02-7	SVOA	µg/kg	12	0	0	660	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
Acenaphthene	83-32-9	SVOA	µg/kg	12	0	0	68	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
Acenaphthylene	208-96-8	SVOA	µg/kg	9	0	0	82	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Anthracene	120-12-7	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(a)anthracene	56-55-3	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(a)pyrene	50-32-8	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(b)fluoranthene	205-99-2	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(ghi)perylene	191-24-2	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(k)fluoranthene	207-08-9	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-chloro-1-methylethyl)ether	108-60-1	SVOA	µg/kg	9	0	0	260	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-Chloroethoxy)methane	111-91-1	SVOA	µg/kg	9	0	0	120	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-chloroethyl) ether	111-44-4	SVOA	µg/kg	9	0	0	250	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-ethylhexyl) phthalate	117-81-7	SVOA	µg/kg	9	0	0	330	630			8270_SVOA_GCMS	8270_SVOA_GCMS			
Butylbenzylphthalate	85-68-7	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Carbazole	86-74-8	SVOA	µg/kg	9	0	0	82	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Chrysene	218-01-9	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Cyclohexanone	108-94-1	SVOA	µg/kg	6	0	0	340	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Dibenz[a,h]anthracene	53-70-3	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Dibenzofuran	132-64-9	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Diethylphthalate	84-66-2	SVOA	µg/kg	9	2	22	190	380	220	230	8270_SVOA_GCMS	8270_SVOA_GCMS	224	226.5	B17N73
Dimethyl phthalate	131-11-3	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Di-n-butylphthalate	84-74-2	SVOA	µg/kg	9	3	33	89	380	94	220	8270_SVOA_GCMS	8270_SVOA_GCMS	224	226.5	B17N73
Di-n-octylphthalate	117-84-0	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Fluoranthene	206-44-0	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Fluorene	86-73-7	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			

Table A-5. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (6 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-46 (C3426)															
Hexachlorobenzene	118-74-1	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorobutadiene	87-68-3	SVOA	µg/kg	9	0	0	330	410			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorocyclopentadiene	77-47-4	SVOA	µg/kg	9	0	0	320	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachloroethane	67-72-1	SVOA	µg/kg	9	0	0	330	530			8270_SVOA_GCMS	8270_SVOA_GCMS			
Indeno(1,2,3-cd)pyrene	193-39-5	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Isophorone	78-59-1	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Naphthalene	91-20-3	SVOA	µg/kg	9	0	0	290	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Nitrobenzene	98-95-3	SVOA	µg/kg	9	0	0	270	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
n-Nitrosodi-n-dipropylamine	621-64-7	SVOA	µg/kg	12	0	0	68	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
n-Nitrosodiphenylamine	86-30-6	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Pentachlorophenol	87-86-5	SVOA	µg/kg	12	0	0	310	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
Phenanthrene	85-01-8	SVOA	µg/kg	9	0	0	68	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Phenol	108-95-2	SVOA	µg/kg	12	0	0	100	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
Phenyl sulfone	127-63-9	SVOA	µg/kg	1	1	100			240	240	8270_SVOA_GCMS	8270_SVOA_GCMS	226.5	229	B17NL5
Pyrene	129-00-0	SVOA	µg/kg	12	0	0	68	160000			8270_SVOA_GCMS	8270_SVOA_GCMS			
Tributyl phosphate	126-73-8	SVOA	µg/kg	12	3	25	68	960	35000	2100000	8270_SVOA_GCMS	8270_SVOA_GCMS	63.5	66	B17TM6
1,1,1-Trichloroethane	71-55-6	VOA	µg/kg	19	0	0	0.59	140			8260_VOA_GCMS	8260_VOA_GCMS			
1,1,2,2-Tetrachloroethane	79-34-5	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
1,1,2-Trichloroethane	79-00-5	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
1,1-Dichloroethane	75-34-3	VOA	µg/kg	19	0	0	0.67	300			8260_VOA_GCMS	8260_VOA_GCMS			
1,1-Dichloroethene	75-35-4	VOA	µg/kg	19	1	5	0.64	150	1.1	1.1	8260_VOA_GCMS	8260_VOA_GCMS	115	117.5	B191Y4
1,2-Dibromo-3-chloropropane	96-12-8	VOA	µg/kg	1	1	100			588	588	8260_VOA_GCMS	8260_VOA_GCMS	115	117.5	B191Y4
1,2-Dichloroethane	107-06-2	VOA	µg/kg	19	0	0	0.64	150			8260_VOA_GCMS	8260_VOA_GCMS			
1,2-Dichloroethene (Total)	540-59-0	VOA	µg/kg	19	0	0	1.2	270			8260_VOA_GCMS	8260_VOA_GCMS			
1,2-Dichloropropane	78-87-5	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
1-Butanol	71-36-3	VOA	µg/kg	11	5	45	38	43	76.174	1500	8260_VOA_GCMS	8260_VOA_GCMS	109.5	112	B18XW3
2-Butanone	78-93-3	VOA	µg/kg	19	6	32	1.9	160	22	80	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64-A
2-Butanone	78-93-3	VOA	PPM(V/V)	34	18	53	1	1.28	1.05	3.25	VOA_B&K_FLD	VOA_B&K_FLD	110	112	B17XB9
2-Ethyl-1-hexanol	104-76-7	VOA	µg/kg	2	2	100			8.5	24	8260_VOA_GCMS	8260_VOA_GCMS	109.5	112	B18XW3
2-Hexanone	591-78-6	VOA	µg/kg	13	4	31	1.9	11	1.3	7.6	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64-A
2-Methyl-2-Propanol	75-65-0	VOA	µg/kg	1	1	100			4.3	4.3	8260_VOA_GCMS	8260_VOA_GCMS	90	92.5	B17N61
2-Pentanone	107-87-9	VOA	µg/kg	2	2	100			6	6.6	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64
2-Pentanone, 4-Methyl	108-10-1	VOA	µg/kg	19	1	5	0.62	140	1.2	1.2	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64
2-Propanol	67-63-0	VOA	µg/kg	1	1	100			10	10	8260_VOA_GCMS	8260_VOA_GCMS	115	117.5	B191Y4
Acetone	67-64-1	VOA	µg/kg	19	10	53	1.9	180	9	660	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N68
Acetonitrile	75-05-8	VOA	µg/kg	9	0	0	3.8	22			8260_VOA_GCMS	8260_VOA_GCMS			
Benzene	71-43-2	VOA	µg/kg	19	1	5	0.56	130	0.97	0.97	8260_VOA_GCMS	8260_VOA_GCMS	115	117.5	B191Y4
Benzoic acid, 2-[(trimethylsilyl)oxy]-trimethylsilyl ester	3789-85-3	VOA	µg/kg	1	1	100			6.3	6.3	8260_VOA_GCMS	8260_VOA_GCMS	115	117.5	B191Y4
Bromodichloromethane	75-27-4	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
Bromoform	75-25-2	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
Bromomethane	74-83-9	VOA	µg/kg	9	1	11	1.9	10	31	31	8260_VOA_GCMS	8260_VOA_GCMS	119.5	122	B18XT1
Butyraldehyde	123-72-8	VOA	µg/kg	1	1	100			18	18	8260_VOA_GCMS	8260_VOA_GCMS	109.5	112	B18XW3
Carbon Dioxide	124-38-9	VOA	%(vol)	40	20	50	0	0	0	3.2	VOA_GC_FLD	VOA_GC_FLD	66	67	B17X90
Carbon disulfide	75-15-0	VOA	µg/kg	10	1	10	1.9	11	11	11	8260_VOA_GCMS	8260_VOA_GCMS	115	117.5	B18XT1

Table A-5. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (6 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-46 (C3426)															
Carbon tetrachloride	56-23-5	VOA	PPM(V/V)	65	56	86	1	25.6	1.01	9700	VOA_B&K_FLD	VOA_B&K_FLD	110	112	B17XB9
Carbon tetrachloride	56-23-5	VOA	µg/kg	19	7	37	1.9	240	14	380000	8260_VOA_GCMS	8260_VOA_GCMS	63.5	66	B17TM6
Chlorobenzene	108-90-7	VOA	µg/kg	19	1	5	0.64	150	0.98	0.98	8260_VOA_GCMS	8260_VOA_GCMS	115	117.5	B191Y4
Chloroethane	75-00-3	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
Chloroform	67-66-3	VOA	PPM(V/V)	65	45	69	1	1.26	1.06	130	VOA_B&K_FLD	VOA_B&K_FLD	66	67	B17X92
Chloroform	67-66-3	VOA	µg/kg	19	6	32	0.78	140	0.96	4900	8260_VOA_GCMS	8260_VOA_GCMS	63.5	66	B17TM6
Chloromethane	74-87-3	VOA	µg/kg	19	1	5	1.4	620	110	110	8260_VOA_GCMS	8260_VOA_GCMS	119.5	122	B18XT1
cis-1,2-Dichloroethylene	156-59-2	VOA	µg/kg	7	0	0	1.9	5			8260_VOA_GCMS	8260_VOA_GCMS			
cis-1,3-Dichloropropene	10061-01-5	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
Dibromochloromethane	124-48-1	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
Ethylbenzene	100-41-4	VOA	µg/kg	19	0	0	0.82	190			8260_VOA_GCMS	8260_VOA_GCMS			
Hexachloroethane	67-72-1	VOA	µg/kg	2	2	100			5.2	15	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64-A
Hexanal	66-25-1	VOA	µg/kg	1	1	100			13	13	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64-A
Hexane	110-54-3	VOA	µg/kg	9	1	11	1.9	11	2	2	8260_VOA_GCMS	8260_VOA_GCMS	90	92.5	B17N52
Methylene chloride	75-09-2	VOA	PPM(V/V)	34	33	97	1.08	1.08	1.04	37	VOA_B&K_FLD	VOA_B&K_FLD	110	112	B17XC3
Methylene chloride	75-09-2	VOA	µg/kg	19	2	11	1.1	250	12	20	8260_VOA_GCMS	8260_VOA_GCMS	119.5	122	B18XT1
n-Butylbenzene	104-51-8	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
Nitromethane	75-52-5	VOA	µg/kg	1	1	100			5.5	5.5	8260_VOA_GCMS	8260_VOA_GCMS	109.5	112	B18XW3
n-Valeraldehyde	110-62-3	VOA	µg/kg	1	1	100			8.9	8.9	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64-A
Styrene	100-42-5	VOA	µg/kg	10	2	20	1.9	11	2.9	3.4	8260_VOA_GCMS	8260_VOA_GCMS	184	186.5	B17N70
Tetrachloroethene	127-18-4	VOA	µg/kg	19	5	26	0.76	130	0.94	17000	8260_VOA_GCMS	8260_VOA_GCMS	63.5	66	B17TM6
Tetrahydrofuran	109-99-9	VOA	µg/kg	5	5	100			9.6	112	8260_VOA_GCMS	8260_VOA_GCMS	109.5	112	B18XW3
Toluene	108-88-3	VOA	µg/kg	19	2	11	0.54	130	0.97	1.3	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64
trans-1,2-Dichloroethylene	156-60-5	VOA	µg/kg	7	0	0	1.9	5			8260_VOA_GCMS	8260_VOA_GCMS			
trans-1,3-Dichloropropene	10061-02-6	VOA	µg/kg	9	0	0	1.9	11			8260_VOA_GCMS	8260_VOA_GCMS			
Tribromoethylene	598-16-3	VOA	µg/kg	1	1	100			5.7	5.7	8260_VOA_GCMS	8260_VOA_GCMS	117	119.5	B17N64-A
Trichloroethene	79-01-6	VOA	µg/kg	19	1	5	0.72	170	1.1	1.1	8260_VOA_GCMS	8260_VOA_GCMS	115	117.5	B191Y4
Vinyl chloride	75-01-4	VOA	µg/kg	19	0	0	1.3	560			8260_VOA_GCMS	8260_VOA_GCMS			
Xylenes (total)	1330-20-7	VOA	µg/kg	19	0	0	1.3	310			8260_VOA_GCMS	8260_VOA_GCMS			
Ammonia	7664-41-7	WETCHEM	µg/kg	1	1	100			7050	7050	350.3_AMMONIA	350.3_AMMONIA	90	92.5	B17N52
Ammonium ion	14798-03-9	WETCHEM	µg/kg	9	7	78	22100	28600	923	192000	300.7_IC	300.7_IC	109.5	112	B18XR8
Chloride	16887-00-6	WETCHEM	µg/kg	12	12	100			3300	51400	300.0_ANIONS_IC	300.0_ANIONS_IC	63.5	66	B17TM6
Cyanide	57-12-5	WETCHEM	µg/kg	10	0	0	200	624			335.2_CYANIDE	9010_CYANIDE			
Fluoride	16984-48-8	WETCHEM	µg/kg	12	7	58	1150	24900	2400	7800	300.0_ANIONS_IC	300.0_ANIONS_IC	90	92.5	B17N52
Nitrate	14797-55-8	WETCHEM	µg/kg	12	12	100			28900	5910000	300.0_ANIONS_IC	300.0_ANIONS_IC	109.5	112	B18XR8
Nitrite	14797-65-0	WETCHEM	µg/kg	12	3	25	1420	224000	2060	12100	300.0_ANIONS_IC	300.0_ANIONS_IC	47.5	50	B17N46
Nitrogen in Nitrite and Nitrate	NO2+NO3-N	WETCHEM	µg/kg	8	8	100			7500	432000	353.2_NO3/NO2	353.2_NO3/NO2	119.5	122	B17N65
Phosphate	14265-44-2	WETCHEM	µg/kg	12	0	0	1200	249000			300.0_ANIONS_IC	300.0_ANIONS_IC			
Sulfate	14808-79-8	WETCHEM	µg/kg	12	9	75	1200	287000	8100	456000	300.0_ANIONS_IC	300.0_ANIONS_IC	63.5	66	B17TM6
Sulfide	18496-25-8	WETCHEM	µg/kg	9	1	11	10600	54800	69300	69300	9030_SULFIDE	9030_SULFIDE	174	176.5	B17N69
Water (Vapor)	7732-18-5	WETCHEM	PPM(V/V)	65	65	100			2290	16900	H2O_B&K_FLD	H2O_B&K_FLD	184	186.3	B1B7K0

Table A-6. Summary Table for All Constituents in Shallow Zone Soil Samples

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
2-(2-methyl-4-chlorophenoxy)propionic acid	93-65-2	GENORG	µg/kg	1	0	0	1300	1300			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	93-76-5	GENORG	µg/kg	1	0	0	5.3	5.3			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	93-72-1	GENORG	µg/kg	1	0	0	3.5	3.5			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-D(2,4-Dichlorophenoxyacetic acid)	94-75-7	GENORG	µg/kg	1	0	0	31	31			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid)	94-82-6	GENORG	µg/kg	1	0	0	26	26			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2-Methyl-4-chlorophenoxyacetic acid	94-74-6	GENORG	µg/kg	1	0	0	830	830			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	GENORG	µg/kg	1	0	0	0.1	0.1			8081_PEST_GC	8081_PEST_GC			
4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	GENORG	µg/kg	1	0	0	0.41	0.41			8081_PEST_GC	8081_PEST_GC			
4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	GENORG	µg/kg	1	0	0	0.21	0.21			8081_PEST_GC	8081_PEST_GC			
Aldrin	309-00-2	GENORG	µg/kg	1	0	0	0.11	0.11			8081_PEST_GC	8081_PEST_GC			
Alpha-BHC	319-84-6	GENORG	µg/kg	1	0	0	0.65	0.65			8081_PEST_GC	8081_PEST_GC			
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	GENORG	µg/kg	1	0	0	0.12	0.12			8081_PEST_GC	8081_PEST_GC			
Dalapon	75-99-0	GENORG	µg/kg	1	0	0	29	29			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Delta-BHC	319-86-8	GENORG	µg/kg	1	0	0	0.12	0.12			8081_PEST_GC	8081_PEST_GC			
Dicamba	1918-00-9	GENORG	µg/kg	1	0	0	1.6	1.6			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dichloroprop	120-36-5	GENORG	µg/kg	1	0	0	29	29			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dieldrin	60-57-1	GENORG	µg/kg	1	0	0	0.29	0.29			8081_PEST_GC	8081_PEST_GC			
Dinoseb(2-secButyl-4,6-dinitrophenol)	88-85-7	GENORG	µg/kg	1	0	0	6.3	6.3			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Endosulfan I	959-98-8	GENORG	µg/kg	1	0	0	0.13	0.13			8081_PEST_GC	8081_PEST_GC			
Endosulfan II	33213-65-9	GENORG	µg/kg	1	0	0	0.1	0.1			8081_PEST_GC	8081_PEST_GC			
Endosulfan sulfate	1031-07-8	GENORG	µg/kg	1	0	0	0.25	0.25			8081_PEST_GC	8081_PEST_GC			
Endrin	72-20-8	GENORG	µg/kg	1	0	0	0.21	0.21			8081_PEST_GC	8081_PEST_GC			
Gamma-BHC (Lindane)	58-89-9	GENORG	µg/kg	1	0	0	0.27	0.27			8081_PEST_GC	8081_PEST_GC			
Heptachlor	76-44-8	GENORG	µg/kg	1	0	0	0.11	0.11			8081_PEST_GC	8081_PEST_GC			
Heptachlor epoxide	1024-57-3	GENORG	µg/kg	1	0	0	0.15	0.15			8081_PEST_GC	8081_PEST_GC			
Toxaphene	8001-35-2	GENORG	µg/kg	1	0	0	7	7			8081_PEST_GC	8081_PEST_GC			
Total solids	TS	PHYSICAL	%	1	1	100			6.7	6.7	160.3_TOTSOLIDS	160.3_TOTSOLIDS		0.5	B1HL28

Table A-7. Summary Table for Non-RAD Constituents in Shallow Zone Soil Samples

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
2-(2-methyl-4-chlorophenoxy)propionic acid	93-65-2	GENORG	µg/kg	1	0	0	1300	1300			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	93-76-5	GENORG	µg/kg	1	0	0	5.3	5.3			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	93-72-1	GENORG	µg/kg	1	0	0	3.5	3.5			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-D(2,4-Dichlorophenoxyacetic acid)	94-75-7	GENORG	µg/kg	1	0	0	31	31			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid)	94-82-6	GENORG	µg/kg	1	0	0	26	26			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2-Methyl-4-chlorophenoxyacetic acid	94-74-6	GENORG	µg/kg	1	0	0	830	830			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	GENORG	µg/kg	1	0	0	0.1	0.1			8081_PEST_GC	8081_PEST_GC			
4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	GENORG	µg/kg	1	0	0	0.41	0.41			8081_PEST_GC	8081_PEST_GC			
4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	GENORG	µg/kg	1	0	0	0.21	0.21			8081_PEST_GC	8081_PEST_GC			
Aldrin	309-00-2	GENORG	µg/kg	1	0	0	0.11	0.11			8081_PEST_GC	8081_PEST_GC			
Alpha-BHC	319-84-6	GENORG	µg/kg	1	0	0	0.65	0.65			8081_PEST_GC	8081_PEST_GC			
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	GENORG	µg/kg	1	0	0	0.12	0.12			8081_PEST_GC	8081_PEST_GC			
Dalapon	75-99-0	GENORG	µg/kg	1	0	0	29	29			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Delta-BHC	319-86-8	GENORG	µg/kg	1	0	0	0.12	0.12			8081_PEST_GC	8081_PEST_GC			
Dicamba	1918-00-9	GENORG	µg/kg	1	0	0	1.6	1.6			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dichloroprop	120-36-5	GENORG	µg/kg	1	0	0	29	29			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dieldrin	60-57-1	GENORG	µg/kg	1	0	0	0.29	0.29			8081_PEST_GC	8081_PEST_GC			
Dinoseb(2-secButyl-4,6-dinitrophenol)	88-85-7	GENORG	µg/kg	1	0	0	6.3	6.3			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Endosulfan I	959-98-8	GENORG	µg/kg	1	0	0	0.13	0.13			8081_PEST_GC	8081_PEST_GC			
Endosulfan II	33213-65-9	GENORG	µg/kg	1	0	0	0.1	0.1			8081_PEST_GC	8081_PEST_GC			
Endosulfan sulfate	1031-07-8	GENORG	µg/kg	1	0	0	0.25	0.25			8081_PEST_GC	8081_PEST_GC			
Endrin	72-20-8	GENORG	µg/kg	1	0	0	0.21	0.21			8081_PEST_GC	8081_PEST_GC			
Gamma-BHC (Lindane)	58-89-9	GENORG	µg/kg	1	0	0	0.27	0.27			8081_PEST_GC	8081_PEST_GC			
Heptachlor	76-44-8	GENORG	µg/kg	1	0	0	0.11	0.11			8081_PEST_GC	8081_PEST_GC			
Heptachlor epoxide	1024-57-3	GENORG	µg/kg	1	0	0	0.15	0.15			8081_PEST_GC	8081_PEST_GC			
Toxaphene	8001-35-2	GENORG	µg/kg	1	0	0	7	7			8081_PEST_GC	8081_PEST_GC			
Total solids	TS	PHYSICAL	%	1	1	100			6.7	6.7	160.3_TOTSOLIDS	160.3_TOTSOLIDS		0.5	B1HL28

Table A-8. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
2-(2-methyl-4-chlorophenoxy)propionic acid	93-65-2	GENORG	µg/kg	1	0	0	1300	1300			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	93-76-5	GENORG	µg/kg	1	0	0	5.3	5.3			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	93-72-1	GENORG	µg/kg	1	0	0	3.5	3.5			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-D(2,4-Dichlorophenoxyacetic acid)	94-75-7	GENORG	µg/kg	1	0	0	31	31			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid)	94-82-6	GENORG	µg/kg	1	0	0	26	26			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2-Methyl-4-chlorophenoxyacetic acid	94-74-6	GENORG	µg/kg	1	0	0	830	830			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	GENORG	µg/kg	1	0	0	0.1	0.1			8081_PEST_GC	8081_PEST_GC			
4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	GENORG	µg/kg	1	0	0	0.41	0.41			8081_PEST_GC	8081_PEST_GC			
4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	GENORG	µg/kg	1	0	0	0.21	0.21			8081_PEST_GC	8081_PEST_GC			
Aldrin	309-00-2	GENORG	µg/kg	1	0	0	0.11	0.11			8081_PEST_GC	8081_PEST_GC			
Alpha-BHC	319-84-6	GENORG	µg/kg	1	0	0	0.65	0.65			8081_PEST_GC	8081_PEST_GC			
Aroclor-1016	12674-11-2	GENORG	µg/kg	11	0	0	6.4	140			8082_PCB_GC	8082_PCB_GC			
Aroclor-1221	11104-28-2	GENORG	µg/kg	11	0	0	6.4	140			8082_PCB_GC	8082_PCB_GC			
Aroclor-1232	11141-16-5	GENORG	µg/kg	11	0	0	6.4	140			8082_PCB_GC	8082_PCB_GC			
Aroclor-1242	53469-21-9	GENORG	µg/kg	11	0	0	6.4	140			8082_PCB_GC	8082_PCB_GC			
Aroclor-1248	12672-29-6	GENORG	µg/kg	11	2	18	6.4	140	270	1300	8082_PCB_GC	8082_PCB_GC	70	72	B1HK32
Aroclor-1254	11097-69-1	GENORG	µg/kg	11	0	0	4	140			8082_PCB_GC	8082_PCB_GC			
Aroclor-1260	11096-82-5	GENORG	µg/kg	11	0	0	4	140			8082_PCB_GC	8082_PCB_GC			
Aroclor-1262	37324-23-5	GENORG	µg/kg	10	0	0	4	12			8082_PCB_GC	8082_PCB_GC			
Aroclor-1268	11100-14-4	GENORG	µg/kg	10	0	0	4	12			8082_PCB_GC	8082_PCB_GC			
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	GENORG	µg/kg	1	0	0	0.12	0.12			8081_PEST_GC	8081_PEST_GC			
Calcium Carbonate	471-34-1	GENORG	%	4	4	100			0	22	D4373_GASGEN	D4373_GASGEN	131.5	133	B1HK67
Dalapon	75-99-0	GENORG	µg/kg	1	0	0	29	29			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Delta-BHC	319-86-8	GENORG	µg/kg	1	0	0	0.12	0.12			8081_PEST_GC	8081_PEST_GC			
Dicamba	1918-00-9	GENORG	µg/kg	1	0	0	1.6	1.6			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dichloroprop	120-36-5	GENORG	µg/kg	1	0	0	29	29			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dieldrin	60-57-1	GENORG	µg/kg	1	0	0	0.29	0.29			8081_PEST_GC	8081_PEST_GC			
Dinoseb(2-secButyl-4,6-dinitrophenol)	88-85-7	GENORG	µg/kg	1	0	0	6.3	6.3			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Endosulfan I	959-98-8	GENORG	µg/kg	1	0	0	0.13	0.13			8081_PEST_GC	8081_PEST_GC			

Table A-8. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
Endosulfan II	33213-65-9	GENORG	µg/kg	1	0	0	0.1	0.1			8081_PEST_GC	8081_PEST_GC			
Endosulfan sulfate	1031-07-8	GENORG	µg/kg	1	0	0	0.25	0.25			8081_PEST_GC	8081_PEST_GC			
Endrin	72-20-8	GENORG	µg/kg	1	0	0	0.21	0.21			8081_PEST_GC	8081_PEST_GC			
Gamma-BHC (Lindane)	58-89-9	GENORG	µg/kg	1	0	0	0.27	0.27			8081_PEST_GC	8081_PEST_GC			
Heptachlor	76-44-8	GENORG	µg/kg	1	0	0	0.11	0.11			8081_PEST_GC	8081_PEST_GC			
Heptachlor epoxide	1024-57-3	GENORG	µg/kg	1	0	0	0.15	0.15			8081_PEST_GC	8081_PEST_GC			
Oil and grease	OIL/GREASE	GENORG	µg/kg	12	2	17	1000	702000	395000	2440000	413.1_OILGREASE	413.1_OILGREASE	70	72	B1HK32
Total Inorganic Carbon	TINC	GENORG	µg/kg	13	6	46	8200	9800	8600	3280000	9060_TOC	415.1_TOC	135	140	B1HL26
Total organic carbon	TOC	GENORG	µg/kg	12	9	75	23200	1050000	63400	3660000	415.1_TOC	9060_TOC	122.5	124.5	B1HK57
Total petroleum hydrocarbons diesel range	TPHDIESEL	GENORG	µg/kg	7	0	0	1600	1700			WTPH_DIESEL	WTPH_DIESEL			
Total petroleum hydrocarbons kerosene range	TPHKEROSENE	GENORG	µg/kg	7	0	0	520	550			WTPH_DIESEL	WTPH_DIESEL			
Toxaphene	8001-35-2	GENORG	µg/kg	1	0	0	7	7			8081_PEST_GC	8081_PEST_GC			
Aluminum	7429-90-5	METAL	µg/kg	12	12	100			6080000	13000000	6010_METALS_ICP	6010_METALS_ICP_TR	118.5	120.5	B1HK42
Antimony	7440-36-0	METAL	µg/kg	12	8	67	2340	2520	500	2400	6010_METALS_ICP_TR	6010_METALS_ICP_TR	135	140	B1HL26
Arsenic	7440-38-2	METAL	µg/kg	12	11	92	2050	2050	3000	8400	6010_METALS_ICP	6010_METALS_ICP	131.5	133	B1HK67
Barium	7440-39-3	METAL	µg/kg	12	12	100			37300	109000	6010_METALS_ICP_TR	6010_METALS_ICP	131.5	133	B1HK67
Beryllium	7440-41-7	METAL	µg/kg	12	12	100			130	680	6010_METALS_ICP	6010_METALS_ICP_TR	135	140	B1HL26
Bismuth	7440-69-9	METAL	µg/kg	12	8	67	2050	2220	53600	156000	6010_METALS_ICP_TR	6010_METALS_ICP_TR	135	140	B1HL26
Cadmium	7440-43-9	METAL	µg/kg	12	10	83	99	140	145	118000	6010_METALS_ICP	6010_METALS_ICP	122.5	124.5	B1HK57
Calcium	7440-70-2	METAL	µg/kg	12	12	100			2240000	209000000	6010_METALS_ICP_TR	6010_METALS_ICP	131.5	133	B1HK67
Chromium	7440-47-3	METAL	µg/kg	12	12	100			6650	22800	6010_METALS_ICP	6010_METALS_ICP_TR	52.5	54.5	B1HKB3
Cobalt	7440-48-4	METAL	µg/kg	12	12	100			5190	13600	6010_METALS_ICP	6010_METALS_ICP_TR	135	140	B1HL26
Copper	7440-50-8	METAL	µg/kg	12	12	100			9100	19900	6010_METALS_ICP_TR	6010_METALS_ICP	122.5	124.5	B1HK57
Hexavalent Chromium	18540-29-9	METAL	µg/kg	12	2	17	150	180	220	450	7196_CR6	7196_CR6	52.5	54.5	B1HKB3
Iron	7439-89-6	METAL	µg/kg	12	12	100			9230000	24000000	6010_METALS_ICP	6010_METALS_ICP_TR	135	140	B1HL26
Lead	7439-92-1	METAL	µg/kg	12	12	100			2390	17000	6010_METALS_ICP	6010_METALS_ICP	122.5	124.5	B1HK57
Lithium	7439-93-2	METAL	µg/kg	12	12	100			5280	16100	6010_METALS_ICP	6010_METALS_ICP	122.5	124.5	B1HK57
Magnesium	7439-95-4	METAL	µg/kg	12	12	100			3710000	7900000	6010_METALS_ICP_TR	6010_METALS_ICP	131.5	133	B1HK67
Manganese	7439-96-5	METAL	µg/kg	12	12	100			170000	508000	6010_METALS_ICP_TR	6010_METALS_ICP	122.5	124.5	B1HK57
Mercury	7439-97-6	METAL	µg/kg	12	12	100			40.5	799	7471_HG_CVAA	7471_HG_CVAA	100	102	B1HK52
Nickel	7440-02-0	METAL	µg/kg	12	12	100			5670	23300	6010_METALS_ICP	6010_METALS_ICP_TR	100	102	B1HK52
Phosphorus	7723-14-0	METAL	µg/kg	12	12	100			426000	1220000	6010_METALS_ICP	6010_METALS_ICP	128.5	130.5	B1HK62
Potassium	7440-09-7	METAL	µg/kg	12	12	100			530000	1990000	6010_METALS_ICP	6010_METALS_ICP	122.5	124.5	B1HK57
Selenium	7782-49-2	METAL	µg/kg	12	8	67	180	1820	280	2930	6010_METALS_ICP_TR	6010_METALS_ICP	131.5	133	B1HK67
Silver	7440-22-4	METAL	µg/kg	12	3	25	197	210	565	1230	6010_METALS_ICP	6010_METALS_ICP	135	140	B1HK77
Sodium	7440-23-5	METAL	µg/kg	12	11	92	1950000	1950000	144000	1330000	6010_METALS_ICP_TR	6010_METALS_ICP_TR	100	102	B1HK52

Table A-8. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
Strontium	7440-24-6	METAL	µg/kg	12	12	100			15900	264000	6010_METALS_ICP_TR	6010_METALS_ICP	131.5	133	B1HK67
Vanadium	7440-62-2	METAL	µg/kg	12	12	100			22200	71400	6010_METALS_ICP	6010_METALS_ICP_TR	135	140	B1HL26
Zinc	7440-66-6	METAL	µg/kg	12	12	100			33800	84000	6010_METALS_ICP_TR	6010_METALS_ICP	135	140	B1HK77
Bulk density - dry	BULKDENSITY-DRY	PHYSICAL	kg/m3	4	4	100			1260	1914	D2937_DENSITY	D2937_DENSITY	131.5	133	B1HK67
Bulk density - wet	BULKDENSITY-WET	PHYSICAL	kg/m3	4	4	100			1410	2198	D2937_DENSITY	D2937_DENSITY	131.5	133	B1HK67
Cation Exchange Capacity	CEC	PHYSICAL	mEQ/100g	12	12	100			4.8	14.9	9081_CATIONEXCH	9081_CATIONEXCH	131.5	133	B1HK67
Hydraulic Conductivity	HYDCON	PHYSICAL	cm/s	4	4	100			0.0000028	0.000043	D5084_HYDRCON	D5084_HYDRCON	100	102	B1HK52
Percent moisture (dry sample)	%MOISTURE-D	PHYSICAL	%	4	4	100			6	24.7	D2216_%MOIS	D2216_%MOIS	128.5	130.5	B1HK62
Percent moisture (wet sample)	%MOISTURE	PHYSICAL	%	4	4	100			5.6	19.8	D2216_%MOIS	D2216_%MOIS	128.5	130.5	B1HK62
Percent passing 1.5 inch sieve	PAS1.5IN	PHYSICAL	%	4	4	100			100	100	D422_PARTCLSIZE	D422_PARTCLSIZE	100	102	B1HK62
Percent passing 3 inch sieve	PAS3IN	PHYSICAL	%	4	4	100			100	100	D422_PARTCLSIZE	D422_PARTCLSIZE	100	102	B1HK62
Percent passing 3/4 inch sieve	PAS3/4IN	PHYSICAL	%	4	4	100			86	100	D422_PARTCLSIZE	D422_PARTCLSIZE	100	102	B1HK57
Percent passing 3/8 inch sieve	PAS3/8IN	PHYSICAL	%	4	4	100			77.9	100	D422_PARTCLSIZE	D422_PARTCLSIZE	100	102	B1HK62
Percent passing No.10 sieve	PAS#10	PHYSICAL	%	4	4	100			69.9	100	D422_PARTCLSIZE	D422_PARTCLSIZE	128.5	130.5	B1HK62
Percent passing No.100 sieve	PAS#100	PHYSICAL	%	4	4	100			53.3	94.2	D422_PARTCLSIZE	D422_PARTCLSIZE	128.5	130.5	B1HK62
Percent passing No.140 sieve	PAS#140	PHYSICAL	%	4	4	100			47.8	91.7	D422_PARTCLSIZE	D422_PARTCLSIZE	128.5	130.5	B1HK62
Percent passing No.20 sieve	PAS#20	PHYSICAL	%	4	4	100			68.2	99.9	D422_PARTCLSIZE	D422_PARTCLSIZE	128.5	130.5	B1HK62
Percent passing No.200 sieve	PAS#200	PHYSICAL	%	4	4	100			31.1	87.9	D422_PARTCLSIZE	D422_PARTCLSIZE	128.5	130.5	B1HK62
Percent passing No.4 sieve	PAS#4	PHYSICAL	%	4	4	100			73.5	100	D422_PARTCLSIZE	D422_PARTCLSIZE	122.5	124.5	B1HK57
Percent passing No.40 sieve	PAS#40	PHYSICAL	%	4	4	100			64.5	99.7	D422_PARTCLSIZE	D422_PARTCLSIZE	128.5	130.5	B1HK62
Percent passing No.60 sieve	PAS#60	PHYSICAL	%	4	4	100			60.1	97.6	D422_PARTCLSIZE	D422_PARTCLSIZE	128.5	130.5	B1HK62
Percent Solids	%SOLIDS	PHYSICAL	%	2	2	100			80.2	85.7	%SOLIDS	%SOLIDS	131.5	133	B1HK67
Specific Gravity	SPECGVTY	PHYSICAL	unitless	4	4	100			2.7102	2.8049	D854_PARTLDEN	D854_PARTLDEN	122.5	124.5	B1HK57
Total solids	TS	PHYSICAL	%	29	29	100			1.9	73.2	160.3_TOTSOLIDS	160.3_TOTSOLIDS	135	140	B1HL23
Americium-241	14596-10-2	RAD	pCi/g	12	12	100			0.48	131000	AMCMISO_IE_PREC_AEA	AMCMISO_IE_PLATE_AEA	118.5	120.5	B1HK42
Antimony-125	14234-35-6	RAD	pCi/g	14	0	0	-0.013	5.3			GAMMA_GS	GAMMA_GS			
Cesium-134	13967-70-9	RAD	pCi/g	14	0	0	0.006	2.6			GAMMA_GS	GAMMA_GS			
Cesium-137	10045-97-3	RAD	pCi/g	16	6	38	-0.006	2.1	0.291	0.632	GAMMA_GS	GAMMA_GS	70	72	B1HK32
Cobalt-60	10198-40-0	RAD	pCi/g	16	0	0	-0.004	2.9			GAMMA_GS	GAMMA_GS			
Europium-152	14683-23-9	RAD	pCi/g	16	2	12	-0.005	6	0.843	3.16	GAMMA_GS	GAMMA_GS	70	72	B1HK32

Table A-8. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
Europium-154	15585-10-1	RAD	pCi/g	16	0	0	-0.011	8.5			GAMMA_GS	GAMMA_GS			
Europium-155	14391-16-3	RAD	pCi/g	16	2	12	0.028	16	0.115	0.131	GAMMA_GS	GAMMA_GS	122.5	124.5	B1HK53
Neptunium-237	13994-20-2	RAD	pCi/g	12	1	8	0	224	10.5	10.5	NP237_LLE_PLATE_AEA	NP237_LLE_PLATE_AEA	122.5	124.5	B1HK57
Plutonium-238	13981-16-3	RAD	pCi/g	12	4	33	-218	1320	0.41	3680	PUISO_IE_PRECIP_AEA	PUISO_PLATE_AEA	70	72	B1HK32
Plutonium-239/240	PU-239/240	RAD	pCi/g	12	12	100			0.14	254000	PUISO_IE_PRECIP_AEA	PUISO_PLATE_AEA	70	72	B1HK32
Potassium-40	13966-00-2	RAD	pCi/g	12	9	75	20	65	2.22	29.4	GAMMA_GS	GAMMA_GS	118.5	120.5	B1HK42
Radium-226	13982-63-3	RAD	pCi/g	13	8	62	0.584	4.3	0.48	2.16	GAMMA_GS	GAMMA_GS	131.5	133	B1HK67
Radium-228	15262-20-1	RAD	pCi/g	13	7	54	0.29	21	0.31	1.64	GAMMA_GS	GAMMA_GS	70	72	B1HK32
Technetium-99	14133-76-7	RAD	pCi/g	12	4	33	-4.77	7.61	14.3	272	TC99_TR_SEP_GPC	TC99_TR_SEP_GPC	70	72	B1HK32
Thorium-228	14274-82-9	RAD	pCi/g	12	4	33	-58.1	166	0.542	2.2	THISO_IE_PLATE_AEA	THISO_IE_PRECIP_AEA	135	140	B1HL26
Thorium-230	14269-63-7	RAD	pCi/g	12	3	25	-231	102	1.57	7.34	THISO_IE_PLATE_AEA	THISO_IE_PRECIP_AEA	135	140	B1HL26
Thorium-232	TH-232	RAD	pCi/g	12	4	33	-57.8	57.9	0.451	1.89	THISO_IE_PLATE_AEA	THISO_IE_PRECIP_AEA	135	140	B1HL26
Total beta radiostrontium	SR-RAD	RAD	pCi/g	12	2	17	-760	7.19	0.22	1.18	SRTOT_SEP_PRECIP_GPC	SRTOT_SEP_PRECIP_GPC	131.5	133	B1HK67
Tritium	10028-17-8	RAD	pCi/g	12	0	0	-3.22	37.8			TRITIUM_COX_LSC	906.0_H3_LSC			
Uranium-233/234	U-233/234	RAD	pCi/g	12	4	33	-17.8	50.3	0.16	0.68	UIISO_IE_PRECIP_AEA	UIISO_IE_PRECIP_AEA	131.5	133	B1HK63
Uranium-235	15117-96-1	RAD	pCi/g	12	1	8	-24.4	79.8	0.03	0.03	UIISO_IE_PRECIP_AEA	UIISO_IE_PRECIP_AEA	131.5	133	B1HK63
Uranium-238	U-238	RAD	pCi/g	12	4	33	-17.8	66	0.18	0.56	UIISO_IE_PRECIP_AEA	UIISO_IE_PRECIP_AEA	131.5	133	B1HK63
1,1'-Biphenyl	92-52-4	SVOA	µg/kg	8	0	0	35	36			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,2,4-Trichlorobenzene	120-82-1	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,2,4-Trimethylbenzene	95-63-6	SVOA	µg/kg	3	0	0	120	180			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,2-Dichlorobenzene	95-50-1	SVOA	µg/kg	12	0	0	35	470			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,3-Dichlorobenzene	541-73-1	SVOA	µg/kg	12	0	0	35	600			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,4-Dichlorobenzene	106-46-7	SVOA	µg/kg	12	0	0	35	500			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4,5-Trichlorophenol	95-95-4	SVOA	µg/kg	12	0	0	35	870			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4,6-Trichlorophenol	88-06-2	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dichlorophenol	120-83-2	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dimethylphenol	105-67-9	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dinitrophenol	51-28-5	SVOA	µg/kg	12	0	0	350	870			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dinitrotoluene	121-14-2	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,6-Dinitrotoluene	606-20-2	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Chloronaphthalene	91-58-7	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Chlorophenol	95-57-8	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Methylnaphthalene	91-57-6	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Methylphenol (cresol, o-)	95-48-7	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Nitroaniline	88-74-4	SVOA	µg/kg	12	0	0	35	870			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Nitrophenol	88-75-5	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
3,3'-Dichlorobenzidine	91-94-1	SVOA	µg/kg	12	0	0	35	390			8270_SVOA_GCMS	8270_SVOA_GCMS			
3+4 Methylphenol (cresol, m+p)	65794-96-9	SVOA	µg/kg	11	0	0	70	390			8270_SVOA_GCMS	8270_SVOA_GCMS			
3-Nitroaniline	99-09-2	SVOA	µg/kg	12	0	0	35	870			8270_SVOA_GCMS	8270_SVOA_GCMS			
4,6-Dinitro-2-methylphenol	534-52-1	SVOA	µg/kg	12	0	0	350	870			8270_SVOA_GCMS	8270_SVOA_GCMS			

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Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
4-Bromophenylphenyl ether	101-55-3	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chloro-3-methylphenol	59-50-7	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chloroaniline	106-47-8	SVOA	µg/kg	12	0	0	35	560			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chlorophenylphenyl ether	7005-72-3	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Methylphenol (cresol, p-)	106-44-5	SVOA	µg/kg	1	0	0	350	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Nitroaniline	100-01-6	SVOA	µg/kg	12	0	0	310	870			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Nitrophenol	100-02-7	SVOA	µg/kg	12	0	0	310	870			8270_SVOA_GCMS	8270_SVOA_GCMS			
Acenaphthene	83-32-9	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Acenaphthylene	208-96-8	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Acetophenone	98-86-2	SVOA	µg/kg	8	0	0	35	36			8270_SVOA_GCMS	8270_SVOA_GCMS			
Anthracene	120-12-7	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Atrazine	1912-24-9	SVOA	µg/kg	8	0	0	35	36			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzaldehyde	100-52-7	SVOA	µg/kg	8	0	0	35	36			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(a)anthracene	56-55-3	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(a)pyrene	50-32-8	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(b)fluoranthene	205-99-2	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(ghi)perylene	191-24-2	SVOA	µg/kg	12	0	0	35	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(k)fluoranthene	207-08-9	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-chloro-1-methylethyl)ether	108-60-1	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-Chloroethoxy)methane	111-91-1	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-chloroethyl) ether	111-44-4	SVOA	µg/kg	12	0	0	35	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-ethylhexyl) phthalate	117-81-7	SVOA	µg/kg	12	4	33	35	190	34	500	8270_SVOA_GCMS	8270_SVOA_GCMS	70	72	B1HK32
Butylbenzylphthalate	85-68-7	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Caprolactam	105-60-2	SVOA	µg/kg	8	0	0	35	36			8270_SVOA_GCMS	8270_SVOA_GCMS			
Carbazole	86-74-8	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Chrysene	218-01-9	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Cyclohexane	110-82-7	SVOA	µg/kg	1	1	100			2000	2000	8270_SVOA_GCMS	8270_SVOA_GCMS	135	140	B1HK77
Cyclohexanone	108-94-1	SVOA	µg/kg	3	0	0	140	180			8270_SVOA_GCMS	8270_SVOA_GCMS			
Decamethylcyclopentasiloxane	541-02-6	SVOA	µg/kg	1	1	100			220	220	8270_SVOA_GCMS	8270_SVOA_GCMS	67	69	B1HK27
Dibenz[a,h]anthracene	53-70-3	SVOA	µg/kg	12	0	0	35	390			8270_SVOA_GCMS	8270_SVOA_GCMS			
Dibenzofuran	132-64-9	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Dibutyl Butylphosphonate	78-46-6	SVOA	µg/kg	3	0	0	180	310			8270_SVOA_GCMS	8270_SVOA_GCMS			
Diethylphthalate	84-66-2	SVOA	µg/kg	12	3	25	35	350	600	710	8270_SVOA_GCMS	8270_SVOA_GCMS	128.5	130.5	B1HK62
Dimethyl phthalate	131-11-3	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Di-n-butylphthalate	84-74-2	SVOA	µg/kg	12	5	42	35	350	38	1300	8270_SVOA_GCMS	8270_SVOA_GCMS	122.5	124.5	B1HK57
Di-n-octylphthalate	117-84-0	SVOA	µg/kg	12	0	0	15	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Fluoranthene	206-44-0	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Fluorene	86-73-7	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorobenzene	118-74-1	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorobutadiene	87-68-3	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorocyclopentadiene	77-47-4	SVOA	µg/kg	12	0	0	180	610			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachloroethane	67-72-1	SVOA	µg/kg	12	2	17	35	450	89	3300	8270_SVOA_GCMS	8270_SVOA_GCMS	70	72	B1HK32
Indeno(1,2,3-cd)pyrene	193-39-5	SVOA	µg/kg	12	0	0	35	390			8270_SVOA_GCMS	8270_SVOA_GCMS			
Isophorone	78-59-1	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Naphthalene	91-20-3	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			

Table A-8. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
Nitrobenzene	98-95-3	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
n-Nitrosodi-n-dipropylamine	621-64-7	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
n-Nitrosodiphenylamine	86-30-6	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Octadecanoic acid	57-11-4	SVOA	µg/kg	1	1	100			220	220	8270_SVOA_GCMS	8270_SVOA_GCMS	67	69	B1HK27
Pentachlorophenol	87-86-5	SVOA	µg/kg	12	0	0	260	870			8270_SVOA_GCMS	8270_SVOA_GCMS			
Phenanthrene	85-01-8	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Phenol	108-95-2	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Pyrene	129-00-0	SVOA	µg/kg	12	0	0	35	1400			8270_SVOA_GCMS	8270_SVOA_GCMS			
Tributyl phosphate	126-73-8	SVOA	µg/kg	12	7	58	35	180	49	3000000	8270_SVOA_GCMS	8270_SVOA_GCMS	70	72	B1HK32
1,1,1-Trichloroethane	71-55-6	VOA	µg/kg	23	0	0	0.17	190			8260_VOA_GCMS	8260_VOA_GCMS			
1,1,2,2-Tetrachloroethane	79-34-5	VOA	µg/kg	23	3	13	0.31	190	3.8	24	8260_VOA_GCMS	8260_VOA_GCMS	100	102	B1HK49
1,1,2-Trichloroethane	79-00-5	VOA	µg/kg	23	0	0	0.48	190			8260_VOA_GCMS	8260_VOA_GCMS			
1,1-Dichloroethane	75-34-3	VOA	µg/kg	23	0	0	0.19	190			8260_VOA_GCMS	8260_VOA_GCMS			
1,1-Dichloroethene	75-35-4	VOA	µg/kg	23	0	0	0.67	190			8260_VOA_GCMS	8260_VOA_GCMS			
1,2,4-Trimethylbenzene	95-63-6	VOA	µg/kg	15	0	0	0.21	37			8260_VOA_GCMS	8260_VOA_GCMS			
1,2-Dichloroethane	107-06-2	VOA	µg/kg	23	0	0	0.56	190			8260_VOA_GCMS	8260_VOA_GCMS			
1,2-Dichloroethene (Total)	540-59-0	VOA	µg/kg	23	0	0	0.6	190			8260_VOA_GCMS	8260_VOA_GCMS			
1,2-Dichloropropane	78-87-5	VOA	µg/kg	23	0	0	0.38	190			8260_VOA_GCMS	8260_VOA_GCMS			
1-Butanol	71-36-3	VOA	µg/kg	23	11	48	9.1	9300	75	5700	8260_VOA_GCMS	8260_VOA_GCMS	73	75	B1HK34
2-Butanone	78-93-3	VOA	µg/kg	23	19	83	0.8	120	2.1	1700	8260_VOA_GCMS	8260_VOA_GCMS	122.5	124.5	B1HK54
2-Butanone	78-93-3	VOA	PPM(V/V)	203	163	80	0.04	8	1.13	485	VOA_B&K_FLD	VOA_MIRAN_FLD	135.3	140	B1K933
2-Hexanone	591-78-6	VOA	µg/kg	23	2	9	1.1	370	2.3	2.4	8260_VOA_GCMS	8260_VOA_GCMS	73	75	B1HK35
2-Pentanone, 4-Methyl	108-10-1	VOA	µg/kg	23	0	0	0.85	370			8260_VOA_GCMS	8260_VOA_GCMS			
Acetic acid, methyl ester	79-20-9	VOA	µg/kg	2	2	100			200	12000	8260_VOA_GCMS	8260_VOA_GCMS	122.5	124.5	B1HK54
Acetone	67-64-1	VOA	PPM(V/V)	3	0	0	0.04	8			TO-15_VOA_GAS	TO-15_VOA_GAS			
Acetone	67-64-1	VOA	µg/kg	23	20	87	5.2	54	6.1	2900	8260_VOA_GCMS	8260_VOA_GCMS	131.5	133	B1HK64
Acetonitrile	75-05-8	VOA	µg/kg	23	7	30	2.6	750	6.6	1300	8260_VOA_GCMS	8260_VOA_GCMS	70	72	B1HK29
Benzene	71-43-2	VOA	µg/kg	23	5	22	0.24	190	0.72	3.7	8260_VOA_GCMS	8260_VOA_GCMS	70	72	B1HK30
Bromodichloromethane	75-27-4	VOA	µg/kg	23	0	0	0.14	190			8260_VOA_GCMS	8260_VOA_GCMS			
Bromoform	75-25-2	VOA	µg/kg	23	0	0	0.2	190			8260_VOA_GCMS	8260_VOA_GCMS			
Bromomethane	74-83-9	VOA	µg/kg	23	0	0	0.43	370			8260_VOA_GCMS	8260_VOA_GCMS			
Butanoic Acid Methyl Ester	623-42-7	VOA	µg/kg	1	1	100			82	82	8260_VOA_GCMS	8260_VOA_GCMS	122.5	124.5	B1HK54
Carbon Dioxide	124-38-9	VOA	PPM(V/V)	65	65	100			121	56300	VOA_MIRAN_FLD	VOA_MIRAN_FLD	128.5	130.5	B1K937
Carbon disulfide	75-15-0	VOA	µg/kg	23	0	0	0.27	190			8260_VOA_GCMS	8260_VOA_GCMS			
Carbon tetrachloride	56-23-5	VOA	PPM(V/V)	272	236	87	0.05	100	1.46	432	VOA_B&K_FLD	VOA_MIRAN_FLD	128.5	130.5	B1K937
Carbon tetrachloride	56-23-5	VOA	µg/kg	23	13	57	0.16	190	0.83	6300	8260_VOA_GCMS	8260_VOA_GCMS	128.5	130.5	B1HK59
Chlorobenzene	108-90-7	VOA	µg/kg	23	0	0	0.13	190			8260_VOA_GCMS	8260_VOA_GCMS			
Chloroethane	75-00-3	VOA	µg/kg	23	0	0	0.55	370			8260_VOA_GCMS	8260_VOA_GCMS			
Chloroform	67-66-3	VOA	PPM(V/V)	271	175	65	0.07	8	0.06	819	TO-15_VOA_GAS	VOA_B&K_FLD	135.3	140	B1K913
Chloroform	67-66-3	VOA	µg/kg	23	10	43	0.24	190	2.2	360	8260_VOA_GCMS	8260_VOA_GCMS	131.5	133	B1HK65
Chloromethane	74-87-3	VOA	µg/kg	23	0	0	0.25	370			8260_VOA_GCMS	8260_VOA_GCMS			
cis-1,2-Dichloroethylene	156-59-2	VOA	µg/kg	2	0	0	3	190			8260_VOA_GCMS	8260_VOA_GCMS			
cis-1,3-Dichloropropene	10061-01-5	VOA	µg/kg	23	0	0	0.15	190			8260_VOA_GCMS	8260_VOA_GCMS			

Table A-8. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
Cyclohexanone	108-94-1	VOA	µg/kg	15	0	0	14	950			8260_VOA_GCMS	8260_VOA_GCMS			
Decane	124-18-5	VOA	µg/kg	2	2	100			750	880	8260_VOA_GCMS	8260_VOA_GCMS	128.5	130.5	B1HK59
Dibromochloromethane	124-48-1	VOA	µg/kg	23	0	0	0.27	190			8260_VOA_GCMS	8260_VOA_GCMS			
Ethylbenzene	100-41-4	VOA	µg/kg	23	1	4	0.17	190	0.8	0.8	8260_VOA_GCMS	8260_VOA_GCMS	73	75	B1HK35
Hexachloroethane	67-72-1	VOA	µg/kg	5	5	100			240	20000	8260_VOA_GCMS	8260_VOA_GCMS	70	72	B1HK29
Hexane	110-54-3	VOA	µg/kg	23	1	4	0.32	190	3.4	3.4	8260_VOA_GCMS	8260_VOA_GCMS	70	72	B1HK30
Methane	74-82-8	VOA	PPM(V/V)	73	8	11	1.5	1.5	9	14	VOA_MIRAN_FLD	VOA_MIRAN_FLD	70	72	B1K944
Methyl propionate	554-12-1	VOA	µg/kg	1	1	100			84	84	8260_VOA_GCMS	8260_VOA_GCMS	128.5	130.5	B1HK59
Methylene chloride	75-09-2	VOA	PPM(V/V)	198	163	82	0.04	8	1.38	72	VOA_B&K_FLD	VOA_B&K_FLD	100	102	B1K8X6
Methylene chloride	75-09-2	VOA	µg/kg	23	5	22	1.2	120	5.6	140	8260_VOA_GCMS	8260_VOA_GCMS	100	102	B1HK49
n-Butylbenzene	104-51-8	VOA	µg/kg	23	0	0	0.22	190			8260_VOA_GCMS	8260_VOA_GCMS			
Nitrous Oxide	10024-97-2	VOA	PPM(V/V)	24	14	58	0.04	0.04	5.05	14.62	VOA_MIRAN_FLD	VOA_MIRAN_FLD	52.5	54.5	B1K947
Styrene	100-42-5	VOA	µg/kg	23	1	4	0.26	190	0.48	0.48	8260_VOA_GCMS	8260_VOA_GCMS	73	75	B1HK35
Tetrachloroethene	127-18-4	VOA	µg/kg	23	7	30	0.41	190	5.2	220	8260_VOA_GCMS	8260_VOA_GCMS	70	72	B1HK29
Tetrachloroethene	127-18-4	VOA	PPM(V/V)	3	0	0	0.04	8			TO-15_VOA_GAS	TO-15_VOA_GAS			
Tetrahydrofuran	109-99-9	VOA	µg/kg	4	4	100			53	490	8260_VOA_GCMS	8260_VOA_GCMS	122.5	124.5	B1HK54
Toluene	108-88-3	VOA	µg/kg	23	5	22	0.47	190	0.65	3.8	8260_VOA_GCMS	8260_VOA_GCMS	131.5	133	B1HK65
trans-1,2-Dichloroethylene	156-60-5	VOA	µg/kg	2	0	0	3	190			8260_VOA_GCMS	8260_VOA_GCMS			
trans-1,3-Dichloropropene	10061-02-6	VOA	µg/kg	23	0	0	0.27	190			8260_VOA_GCMS	8260_VOA_GCMS			
Trichloroethene	79-01-6	VOA	µg/kg	23	1	4	0.26	190	1.3	1.3	8260_VOA_GCMS	8260_VOA_GCMS	73	75	B1HK35
Trichloroethene	79-01-6	VOA	PPM(V/V)	3	0	0	0.04	8			TO-15_VOA_GAS	TO-15_VOA_GAS			
Trichloromonofluoromethane	75-69-4	VOA	µg/kg	1	1	100			3	3	8260_VOA_GCMS	8260_VOA_GCMS	122.5	124.5	B1HK55
Vinyl chloride	75-01-4	VOA	µg/kg	23	0	0	0.32	370			8260_VOA_GCMS	8260_VOA_GCMS			
Xylenes (total)	1330-20-7	VOA	µg/kg	23	1	4	0.4	190	3	3	8260_VOA_GCMS	8260_VOA_GCMS	73	75	B1HK35
Ammonia	7664-41-7	WETCHEM	µg/kg	8	1	12	2800	11300	3400	3400	350.1_AMMONIA	350.1_AMMONIA	52.5	54.5	B1HKB3
Ammonium ion	14798-03-9	WETCHEM	µg/kg	4	4	100			3710	21500	300.7_IC	300.7_IC	135	140	B1HK77
Chloride	16887-00-6	WETCHEM	µg/kg	12	12	100			4300	93700	9056_ANIONS_IC	9056_ANIONS_IC	70	72	B1HK32
Fluoride	16984-48-8	WETCHEM	µg/kg	12	11	92	2000	2000	1700	51400	9056_ANIONS_IC	9056_ANIONS_IC	118.5	120.5	B1HK42
Nitrate	14797-55-8	WETCHEM	µg/kg	12	11	92	487	487	61100	6990000	300.0_ANIONS_IC	9056_ANIONS_IC	100	102	B1HK52
Nitrite	14797-65-0	WETCHEM	µg/kg	12	2	17	141	1610	1050	3940	9056_ANIONS_IC	9056_ANIONS_IC	118.5	120.5	B1HK42
Nitrogen in Nitrite and Nitrate	NO2+NO3-N	WETCHEM	µg/kg	13	13	100			770	1670000	353.1_NO3/NO2	353.1_NO3/NO2	100	102	B1HK52
Phosphate	14265-44-2	WETCHEM	µg/kg	12	2	17	200	12000	2500	3900	9056_ANIONS_IC	9056_ANIONS_IC	135	140	B1HL26
Sulfate	14808-79-8	WETCHEM	µg/kg	12	12	100			10600	255000	300.0_ANIONS_IC	9056_ANIONS_IC	70	72	B1HK32

Table A-9. Summary Table for RAD Only Constituents in Deep Zone Soil Samples

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
Americium-241	14596-10-2	RAD	pCi/g	12	12	100			0.48	131000	AMCMISO_IE_PREC_AEA	AMCMISO_IE_PLATE_AEA	118.5	120.5	B1HK42
Antimony-125	14234-35-6	RAD	pCi/g	14	0	0	-0.013	5.3			GAMMA_GS	GAMMA_GS			
Cesium-134	13967-70-9	RAD	pCi/g	14	0	0	0.006	2.6			GAMMA_GS	GAMMA_GS			
Cesium-137	10045-97-3	RAD	pCi/g	16	6	38	-0.006	2.1	0.291	0.632	GAMMA_GS	GAMMA_GS	70	72	B1HK32
Cobalt-60	10198-40-0	RAD	pCi/g	16	0	0	-0.004	2.9			GAMMA_GS	GAMMA_GS			
Europium-152	14683-23-9	RAD	pCi/g	16	2	12	-0.005	6	0.843	3.16	GAMMA_GS	GAMMA_GS	70	72	B1HK32
Europium-154	15585-10-1	RAD	pCi/g	16	0	0	-0.011	8.5			GAMMA_GS	GAMMA_GS			
Europium-155	14391-16-3	RAD	pCi/g	16	2	12	0.028	16	0.115	0.131	GAMMA_GS	GAMMA_GS	122.5	124.5	B1HK53
Neptunium-237	13994-20-2	RAD	pCi/g	12	1	8	0	224	10.5	10.5	NP237_LLE_PLATE_AEA	NP237_LLE_PLATE_AEA	122.5	124.5	B1HK57
Plutonium-238	13981-16-3	RAD	pCi/g	12	4	33	-218	1320	0.41	3680	PUISO_IE_PRECIP_AEA	PUISO_PLATE_AEA	70	72	B1HK32
Plutonium-239/240	PU-239/240	RAD	pCi/g	12	12	100			0.14	254000	PUISO_IE_PRECIP_AEA	PUISO_PLATE_AEA	70	72	B1HK32
Potassium-40	13966-00-2	RAD	pCi/g	12	9	75	20	65	2.22	29.4	GAMMA_GS	GAMMA_GS	118.5	120.5	B1HK42
Radium-226	13982-63-3	RAD	pCi/g	13	8	62	0.584	4.3	0.48	2.16	GAMMA_GS	GAMMA_GS	131.5	133	B1HK67
Radium-228	15262-20-1	RAD	pCi/g	13	7	54	0.29	21	0.31	1.64	GAMMA_GS	GAMMA_GS	70	72	B1HK32
Technetium-99	14133-76-7	RAD	pCi/g	12	4	33	-4.77	7.61	14.3	272	TC99_TR_SEP_GPC	TC99_TR_SEP_GPC	70	72	B1HK32
Thorium-228	14274-82-9	RAD	pCi/g	12	4	33	-58.1	166	0.542	2.2	THISO_IE_PLATE_AEA	THISO_IE_PRECIP_AEA	135	140	B1HL26
Thorium-230	14269-63-7	RAD	pCi/g	12	3	25	-231	102	1.57	7.34	THISO_IE_PLATE_AEA	THISO_IE_PRECIP_AEA	135	140	B1HL26
Thorium-232	TH-232	RAD	pCi/g	12	4	33	-57.8	57.9	0.451	1.89	THISO_IE_PLATE_AEA	THISO_IE_PRECIP_AEA	135	140	B1HL26
Total beta radiostrontium	SR-RAD	RAD	pCi/g	12	2	17	-760	7.19	0.22	1.18	SRTOT_SEP_PRECIP_GPC	SRTOT_SEP_PRECIP_GPC	131.5	133	B1HK67
Tritium	10028-17-8	RAD	pCi/g	12	0	0	-3.22	37.8			TRITIUM_COX_LSC	906.0_H3_LSC			
Uranium-233/234	U-233/234	RAD	pCi/g	12	4	33	-17.8	50.3	0.16	0.68	UIISO_IE_PRECIP_AEA	UIISO_IE_PRECIP_AEA	131.5	133	B1HK63
Uranium-235	15117-96-1	RAD	pCi/g	12	1	8	-24.4	79.8	0.03	0.03	UIISO_IE_PRECIP_AEA	UIISO_IE_PRECIP_AEA	131.5	133	B1HK63
Uranium-238	U-238	RAD	pCi/g	12	4	33	-17.8	66	0.18	0.56	UIISO_IE_PRECIP_AEA	UIISO_IE_PRECIP_AEA	131.5	133	B1HK63

Table A-10. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
2-(2-methyl-4-chlorophenoxy)propionic acid	93-65-2	GENORG	µg/kg	1	0	0	1300	1300			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	93-76-5	GENORG	µg/kg	1	0	0	5.3	5.3			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	93-72-1	GENORG	µg/kg	1	0	0	3.5	3.5			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-D(2,4-Dichlorophenoxyacetic acid)	94-75-7	GENORG	µg/kg	1	0	0	31	31			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid)	94-82-6	GENORG	µg/kg	1	0	0	26	26			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2-Methyl-4-chlorophenoxyacetic acid	94-74-6	GENORG	µg/kg	1	0	0	830	830			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	GENORG	µg/kg	1	0	0	0.1	0.1			8081_PEST_GC	8081_PEST_GC			
4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	GENORG	µg/kg	1	0	0	0.41	0.41			8081_PEST_GC	8081_PEST_GC			
4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	GENORG	µg/kg	1	0	0	0.21	0.21			8081_PEST_GC	8081_PEST_GC			
Aldrin	309-00-2	GENORG	µg/kg	1	0	0	0.11	0.11			8081_PEST_GC	8081_PEST_GC			
Alpha-BHC	319-84-6	GENORG	µg/kg	1	0	0	0.65	0.65			8081_PEST_GC	8081_PEST_GC			
Aroclor-1016	12674-11-2	GENORG	µg/kg	11	0	0	6.4	140			8082_PCB_GC	8082_PCB_GC			
Aroclor-1221	11104-28-2	GENORG	µg/kg	11	0	0	6.4	140			8082_PCB_GC	8082_PCB_GC			
Aroclor-1232	11141-16-5	GENORG	µg/kg	11	0	0	6.4	140			8082_PCB_GC	8082_PCB_GC			
Aroclor-1242	53469-21-9	GENORG	µg/kg	11	0	0	6.4	140			8082_PCB_GC	8082_PCB_GC			
Aroclor-1248	12672-29-6	GENORG	µg/kg	11	2	18	6.4	140	270	1300	8082_PCB_GC	8082_PCB_GC	70	72	B1HK32
Aroclor-1254	11097-69-1	GENORG	µg/kg	11	0	0	4	140			8082_PCB_GC	8082_PCB_GC			
Aroclor-1260	11096-82-5	GENORG	µg/kg	11	0	0	4	140			8082_PCB_GC	8082_PCB_GC			
Aroclor-1262	37324-23-5	GENORG	µg/kg	10	0	0	4	12			8082_PCB_GC	8082_PCB_GC			
Aroclor-1268	11100-14-4	GENORG	µg/kg	10	0	0	4	12			8082_PCB_GC	8082_PCB_GC			
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	GENORG	µg/kg	1	0	0	0.12	0.12			8081_PEST_GC	8081_PEST_GC			
Calcium Carbonate	471-34-1	GENORG	%	4	4	100			0	22	D4373_GASGEN	D4373_GASGEN	131.5	133	B1HK67
Dalapon	75-99-0	GENORG	µg/kg	1	0	0	29	29			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Delta-BHC	319-86-8	GENORG	µg/kg	1	0	0	0.12	0.12			8081_PEST_GC	8081_PEST_GC			
Dicamba	1918-00-9	GENORG	µg/kg	1	0	0	1.6	1.6			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dichloroprop	120-36-5	GENORG	µg/kg	1	0	0	29	29			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dieldrin	60-57-1	GENORG	µg/kg	1	0	0	0.29	0.29			8081_PEST_GC	8081_PEST_GC			
Dinoseb(2-secButyl-4,6-dinitrophenol)	88-85-7	GENORG	µg/kg	1	0	0	6.3	6.3			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Endosulfan I	959-98-8	GENORG	µg/kg	1	0	0	0.13	0.13			8081_PEST_GC	8081_PEST_GC			

Table A-10. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
Endosulfan II	33213-65-9	GENORG	µg/kg	1	0	0	0.1	0.1			8081_PEST_GC	8081_PEST_GC			
Endosulfan sulfate	1031-07-8	GENORG	µg/kg	1	0	0	0.25	0.25			8081_PEST_GC	8081_PEST_GC			
Endrin	72-20-8	GENORG	µg/kg	1	0	0	0.21	0.21			8081_PEST_GC	8081_PEST_GC			
Gamma-BHC (Lindane)	58-89-9	GENORG	µg/kg	1	0	0	0.27	0.27			8081_PEST_GC	8081_PEST_GC			
Heptachlor	76-44-8	GENORG	µg/kg	1	0	0	0.11	0.11			8081_PEST_GC	8081_PEST_GC			
Heptachlor epoxide	1024-57-3	GENORG	µg/kg	1	0	0	0.15	0.15			8081_PEST_GC	8081_PEST_GC			
Oil and grease	OIL/GREASE	GENORG	µg/kg	12	2	17	1000	702000	395000	2440000	413.1_OILGREASE	413.1_OILGREASE	70	72	B1HK32
Total Inorganic Carbon	TINC	GENORG	µg/kg	13	6	46	8200	9800	8600	3280000	9060_TOC	415.1_TOC	135	140	B1HL26
Total organic carbon	TOC	GENORG	µg/kg	12	9	75	23200	1050000	63400	3660000	415.1_TOC	9060_TOC	122.5	124.5	B1HK57
Total petroleum hydrocarbons diesel range	TPHDIESEL	GENORG	µg/kg	7	0	0	1600	1700			WTPH_DIESEL	WTPH_DIESEL			
Total petroleum hydrocarbons kerosene range	TPHKEROSENE	GENORG	µg/kg	7	0	0	520	550			WTPH_DIESEL	WTPH_DIESEL			
Toxaphene	8001-35-2	GENORG	µg/kg	1	0	0	7	7			8081_PEST_GC	8081_PEST_GC			
Aluminum	7429-90-5	METAL	µg/kg	12	12	100			6080000	13000000	6010_METALS_ICP	6010_METALS_ICP_TR	118.5	120.5	B1HK42
Antimony	7440-36-0	METAL	µg/kg	12	8	67	2340	2520	500	2400	6010_METALS_ICP_TR	6010_METALS_ICP_TR	135	140	B1HL26
Arsenic	7440-38-2	METAL	µg/kg	12	11	92	2050	2050	3000	8400	6010_METALS_ICP	6010_METALS_ICP	131.5	133	B1HK67
Barium	7440-39-3	METAL	µg/kg	12	12	100			37300	109000	6010_METALS_ICP_TR	6010_METALS_ICP	131.5	133	B1HK67
Beryllium	7440-41-7	METAL	µg/kg	12	12	100			130	680	6010_METALS_ICP	6010_METALS_ICP_TR	135	140	B1HL26
Bismuth	7440-69-9	METAL	µg/kg	12	8	67	2050	2220	53600	156000	6010_METALS_ICP_TR	6010_METALS_ICP_TR	135	140	B1HL26
Cadmium	7440-43-9	METAL	µg/kg	12	10	83	99	140	145	118000	6010_METALS_ICP	6010_METALS_ICP	122.5	124.5	B1HK57
Calcium	7440-70-2	METAL	µg/kg	12	12	100			2240000	209000000	6010_METALS_ICP_TR	6010_METALS_ICP	131.5	133	B1HK67
Chromium	7440-47-3	METAL	µg/kg	12	12	100			6650	22800	6010_METALS_ICP	6010_METALS_ICP_TR	52.5	54.5	B1HKB3
Cobalt	7440-48-4	METAL	µg/kg	12	12	100			5190	13600	6010_METALS_ICP	6010_METALS_ICP_TR	135	140	B1HL26
Copper	7440-50-8	METAL	µg/kg	12	12	100			9100	19900	6010_METALS_ICP_TR	6010_METALS_ICP	122.5	124.5	B1HK57
Hexavalent Chromium	18540-29-9	METAL	µg/kg	12	2	17	150	180	220	450	7196_CR6	7196_CR6	52.5	54.5	B1HKB3
Iron	7439-89-6	METAL	µg/kg	12	12	100			9230000	24000000	6010_METALS_ICP	6010_METALS_ICP_TR	135	140	B1HL26
Lead	7439-92-1	METAL	µg/kg	12	12	100			2390	17000	6010_METALS_ICP	6010_METALS_ICP	122.5	124.5	B1HK57
Lithium	7439-93-2	METAL	µg/kg	12	12	100			5280	16100	6010_METALS_ICP	6010_METALS_ICP	122.5	124.5	B1HK57
Magnesium	7439-95-4	METAL	µg/kg	12	12	100			3710000	7900000	6010_METALS_ICP_TR	6010_METALS_ICP	131.5	133	B1HK67
Manganese	7439-96-5	METAL	µg/kg	12	12	100			170000	508000	6010_METALS_ICP_TR	6010_METALS_ICP	122.5	124.5	B1HK57
Mercury	7439-97-6	METAL	µg/kg	12	12	100			40.5	799	7471_HG_CVAA	7471_HG_CVAA	100	102	B1HK52
Nickel	7440-02-0	METAL	µg/kg	12	12	100			5670	23300	6010_METALS_ICP	6010_METALS_ICP_TR	100	102	B1HK52
Phosphorus	7723-14-0	METAL	µg/kg	12	12	100			426000	1220000	6010_METALS_ICP	6010_METALS_ICP	128.5	130.5	B1HK62
Potassium	7440-09-7	METAL	µg/kg	12	12	100			530000	1990000	6010_METALS_ICP	6010_METALS_ICP	122.5	124.5	B1HK57
Selenium	7782-49-2	METAL	µg/kg	12	8	67	180	1820	280	2930	6010_METALS_ICP_TR	6010_METALS_ICP	131.5	133	B1HK67
Silver	7440-22-4	METAL	µg/kg	12	3	25	197	210	565	1230	6010_METALS_ICP	6010_METALS_ICP	135	140	B1HK77
Sodium	7440-23-5	METAL	µg/kg	12	11	92	1950000	1950000	144000	1330000	6010_METALS_ICP_TR	6010_METALS_ICP_TR	100	102	B1HK52

Table A-10. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
Strontium	7440-24-6	METAL	µg/kg	12	12	100			15900	264000	6010_METALS_ICP_TR	6010_METALS_ICP	131.5	133	B1HK67
Vanadium	7440-62-2	METAL	µg/kg	12	12	100			22200	71400	6010_METALS_ICP	6010_METALS_ICP_TR	135	140	B1HL26
Zinc	7440-66-6	METAL	µg/kg	12	12	100			33800	84000	6010_METALS_ICP_TR	6010_METALS_ICP	135	140	B1HK77
Bulk density - dry	BULKDENSITY-DRY	PHYSICAL	kg/m3	4	4	100			1260	1914	D2937_DENSITY	D2937_DENSITY	131.5	133	B1HK67
Bulk density - wet	BULKDENSITY-WET	PHYSICAL	kg/m3	4	4	100			1410	2198	D2937_DENSITY	D2937_DENSITY	131.5	133	B1HK67
Cation Exchange Capacity	CEC	PHYSICAL	mEQ/100g	12	12	100			4.8	14.9	9081_CATIONEXCH	9081_CATIONEXCH	131.5	133	B1HK67
Hydraulic Conductivity	HYDCON	PHYSICAL	cm/s	4	4	100			0.0000028	0.000043	D5084_HYDRCON	D5084_HYDRCON	100	102	B1HK52
Percent moisture (dry sample)	%MOISTURE-D	PHYSICAL	%	4	4	100			6	24.7	D2216_%MOIS	D2216_%MOIS	128.5	130.5	B1HK62
Percent moisture (wet sample)	%MOISTURE	PHYSICAL	%	4	4	100			5.6	19.8	D2216_%MOIS	D2216_%MOIS	128.5	130.5	B1HK62
Percent passing 1.5 inch sieve	PAS1.5IN	PHYSICAL	%	4	4	100			100	100	D422_PARTCLSIZE	D422_PARTCLSIZE	100	102	B1HK62
Percent passing 3 inch sieve	PAS3IN	PHYSICAL	%	4	4	100			100	100	D422_PARTCLSIZE	D422_PARTCLSIZE	100	102	B1HK62
Percent passing 3/4 inch sieve	PAS3/4IN	PHYSICAL	%	4	4	100			86	100	D422_PARTCLSIZE	D422_PARTCLSIZE	100	102	B1HK57
Percent passing 3/8 inch sieve	PAS3/8IN	PHYSICAL	%	4	4	100			77.9	100	D422_PARTCLSIZE	D422_PARTCLSIZE	100	102	B1HK62
Percent passing No.10 sieve	PAS#10	PHYSICAL	%	4	4	100			69.9	100	D422_PARTCLSIZE	D422_PARTCLSIZE	128.5	130.5	B1HK62
Percent passing No.100 sieve	PAS#100	PHYSICAL	%	4	4	100			53.3	94.2	D422_PARTCLSIZE	D422_PARTCLSIZE	128.5	130.5	B1HK62
Percent passing No.140 sieve	PAS#140	PHYSICAL	%	4	4	100			47.8	91.7	D422_PARTCLSIZE	D422_PARTCLSIZE	128.5	130.5	B1HK62
Percent passing No.20 sieve	PAS#20	PHYSICAL	%	4	4	100			68.2	99.9	D422_PARTCLSIZE	D422_PARTCLSIZE	128.5	130.5	B1HK62
Percent passing No.200 sieve	PAS#200	PHYSICAL	%	4	4	100			31.1	87.9	D422_PARTCLSIZE	D422_PARTCLSIZE	128.5	130.5	B1HK62
Percent passing No.4 sieve	PAS#4	PHYSICAL	%	4	4	100			73.5	100	D422_PARTCLSIZE	D422_PARTCLSIZE	122.5	124.5	B1HK57
Percent passing No.40 sieve	PAS#40	PHYSICAL	%	4	4	100			64.5	99.7	D422_PARTCLSIZE	D422_PARTCLSIZE	128.5	130.5	B1HK62
Percent passing No.60 sieve	PAS#60	PHYSICAL	%	4	4	100			60.1	97.6	D422_PARTCLSIZE	D422_PARTCLSIZE	128.5	130.5	B1HK62
Percent Solids	%SOLIDS	PHYSICAL	%	2	2	100			80.2	85.7	%SOLIDS	%SOLIDS	131.5	133	B1HK67
Specific Gravity	SPECGVTY	PHYSICAL	unitless	4	4	100			2.7102	2.8049	D854_PARTLDEN	D854_PARTLDEN	122.5	124.5	B1HK57
Total solids	TS	PHYSICAL	%	29	29	100			1.9	73.2	160.3_TOTSOLIDS	160.3_TOTSOLIDS	135	140	B1HL23
1,1'-Biphenyl	92-52-4	SVOA	µg/kg	8	0	0	35	36			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,2,4-Trichlorobenzene	120-82-1	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,2,4-Trimethylbenzene	95-63-6	SVOA	µg/kg	3	0	0	120	180			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,2-Dichlorobenzene	95-50-1	SVOA	µg/kg	12	0	0	35	470			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,3-Dichlorobenzene	541-73-1	SVOA	µg/kg	12	0	0	35	600			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,4-Dichlorobenzene	106-46-7	SVOA	µg/kg	12	0	0	35	500			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4,5-Trichlorophenol	95-95-4	SVOA	µg/kg	12	0	0	35	870			8270_SVOA_GCMS	8270_SVOA_GCMS			

Table A-10. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
2,4,6-Trichlorophenol	88-06-2	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dichlorophenol	120-83-2	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dimethylphenol	105-67-9	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dinitrophenol	51-28-5	SVOA	µg/kg	12	0	0	350	870			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dinitrotoluene	121-14-2	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,6-Dinitrotoluene	606-20-2	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Chloronaphthalene	91-58-7	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Chlorophenol	95-57-8	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Methylnaphthalene	91-57-6	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Methylphenol (cresol, o-)	95-48-7	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Nitroaniline	88-74-4	SVOA	µg/kg	12	0	0	35	870			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Nitrophenol	88-75-5	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
3,3'-Dichlorobenzidine	91-94-1	SVOA	µg/kg	12	0	0	35	390			8270_SVOA_GCMS	8270_SVOA_GCMS			
3+4 Methylphenol (cresol, m+p)	65794-96-9	SVOA	µg/kg	11	0	0	70	390			8270_SVOA_GCMS	8270_SVOA_GCMS			
3-Nitroaniline	99-09-2	SVOA	µg/kg	12	0	0	35	870			8270_SVOA_GCMS	8270_SVOA_GCMS			
4,6-Dinitro-2-methylphenol	534-52-1	SVOA	µg/kg	12	0	0	350	870			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Bromophenylphenyl ether	101-55-3	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chloro-3-methylphenol	59-50-7	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chloroaniline	106-47-8	SVOA	µg/kg	12	0	0	35	560			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chlorophenylphenyl ether	7005-72-3	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Methylphenol (cresol, p-)	106-44-5	SVOA	µg/kg	1	0	0	350	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Nitroaniline	100-01-6	SVOA	µg/kg	12	0	0	310	870			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Nitrophenol	100-02-7	SVOA	µg/kg	12	0	0	310	870			8270_SVOA_GCMS	8270_SVOA_GCMS			
Acenaphthene	83-32-9	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Acenaphthylene	208-96-8	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Acetophenone	98-86-2	SVOA	µg/kg	8	0	0	35	36			8270_SVOA_GCMS	8270_SVOA_GCMS			
Anthracene	120-12-7	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Atrazine	1912-24-9	SVOA	µg/kg	8	0	0	35	36			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzaldehyde	100-52-7	SVOA	µg/kg	8	0	0	35	36			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(a)anthracene	56-55-3	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(a)pyrene	50-32-8	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(b)fluoranthene	205-99-2	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(ghi)perylene	191-24-2	SVOA	µg/kg	12	0	0	35	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(k)fluoranthene	207-08-9	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-chloro-1-methylethyl)ether	108-60-1	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-Chloroethoxy)methane	111-91-1	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-chloroethyl) ether	111-44-4	SVOA	µg/kg	12	0	0	35	380			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-ethylhexyl) phthalate	117-81-7	SVOA	µg/kg	12	4	33	35	190	34	500	8270_SVOA_GCMS	8270_SVOA_GCMS	70	72	B1HK32
Butylbenzylphthalate	85-68-7	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Caprolactam	105-60-2	SVOA	µg/kg	8	0	0	35	36			8270_SVOA_GCMS	8270_SVOA_GCMS			
Carbazole	86-74-8	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Chrysene	218-01-9	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Cyclohexane	110-82-7	SVOA	µg/kg	1	1	100			2000	2000	8270_SVOA_GCMS	8270_SVOA_GCMS	135	140	B1HK77
Cyclohexanone	108-94-1	SVOA	µg/kg	3	0	0	140	180			8270_SVOA_GCMS	8270_SVOA_GCMS			

Table A-10. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
Decamethylcyclpentasiloxane	541-02-6	SVOA	µg/kg	1	1	100			220	220	8270_SVOA_GCMS	8270_SVOA_GCMS	67	69	B1HK27
Dibenz[a,h]anthracene	53-70-3	SVOA	µg/kg	12	0	0	35	390			8270_SVOA_GCMS	8270_SVOA_GCMS			
Dibenzofuran	132-64-9	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Dibutyl Butylphosphonate	78-46-6	SVOA	µg/kg	3	0	0	180	310			8270_SVOA_GCMS	8270_SVOA_GCMS			
Diethylphthalate	84-66-2	SVOA	µg/kg	12	3	25	35	350	600	710	8270_SVOA_GCMS	8270_SVOA_GCMS	128.5	130.5	B1HK62
Dimethyl phthalate	131-11-3	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Di-n-butylphthalate	84-74-2	SVOA	µg/kg	12	5	42	35	350	38	1300	8270_SVOA_GCMS	8270_SVOA_GCMS	122.5	124.5	B1HK57
Di-n-octylphthalate	117-84-0	SVOA	µg/kg	12	0	0	15	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Fluoranthene	206-44-0	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Fluorene	86-73-7	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorobenzene	118-74-1	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorobutadiene	87-68-3	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorocyclopentadiene	77-47-4	SVOA	µg/kg	12	0	0	180	610			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachloroethane	67-72-1	SVOA	µg/kg	12	2	17	35	450	89	3300	8270_SVOA_GCMS	8270_SVOA_GCMS	70	72	B1HK32
Indeno(1,2,3-cd)pyrene	193-39-5	SVOA	µg/kg	12	0	0	35	390			8270_SVOA_GCMS	8270_SVOA_GCMS			
Isophorone	78-59-1	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Naphthalene	91-20-3	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Nitrobenzene	98-95-3	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
n-Nitrosodi-n-dipropylamine	621-64-7	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
n-Nitrosodiphenylamine	86-30-6	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Octadecanoic acid	57-11-4	SVOA	µg/kg	1	1	100			220	220	8270_SVOA_GCMS	8270_SVOA_GCMS	67	69	B1HK27
Pentachlorophenol	87-86-5	SVOA	µg/kg	12	0	0	260	870			8270_SVOA_GCMS	8270_SVOA_GCMS			
Phenanthrene	85-01-8	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Phenol	108-95-2	SVOA	µg/kg	12	0	0	35	350			8270_SVOA_GCMS	8270_SVOA_GCMS			
Pyrene	129-00-0	SVOA	µg/kg	12	0	0	35	1400			8270_SVOA_GCMS	8270_SVOA_GCMS			
Tributyl phosphate	126-73-8	SVOA	µg/kg	12	7	58	35	180	49	3000000	8270_SVOA_GCMS	8270_SVOA_GCMS	70	72	B1HK32
1,1,1-Trichloroethane	71-55-6	VOA	µg/kg	23	0	0	0.17	190			8260_VOA_GCMS	8260_VOA_GCMS			
1,1,2,2-Tetrachloroethane	79-34-5	VOA	µg/kg	23	3	13	0.31	190	3.8	24	8260_VOA_GCMS	8260_VOA_GCMS	100	102	B1HK49
1,1,2-Trichloroethane	79-00-5	VOA	µg/kg	23	0	0	0.48	190			8260_VOA_GCMS	8260_VOA_GCMS			
1,1-Dichloroethane	75-34-3	VOA	µg/kg	23	0	0	0.19	190			8260_VOA_GCMS	8260_VOA_GCMS			
1,1-Dichloroethene	75-35-4	VOA	µg/kg	23	0	0	0.67	190			8260_VOA_GCMS	8260_VOA_GCMS			
1,2,4-Trimethylbenzene	95-63-6	VOA	µg/kg	15	0	0	0.21	37			8260_VOA_GCMS	8260_VOA_GCMS			
1,2-Dichloroethane	107-06-2	VOA	µg/kg	23	0	0	0.56	190			8260_VOA_GCMS	8260_VOA_GCMS			
1,2-Dichloroethene (Total)	540-59-0	VOA	µg/kg	23	0	0	0.6	190			8260_VOA_GCMS	8260_VOA_GCMS			
1,2-Dichloropropane	78-87-5	VOA	µg/kg	23	0	0	0.38	190			8260_VOA_GCMS	8260_VOA_GCMS			
1-Butanol	71-36-3	VOA	µg/kg	23	11	48	9.1	9300	75	5700	8260_VOA_GCMS	8260_VOA_GCMS	73	75	B1HK34
2-Butanone	78-93-3	VOA	µg/kg	23	19	83	0.8	120	2.1	1700	8260_VOA_GCMS	8260_VOA_GCMS	122.5	124.5	B1HK54
2-Butanone	78-93-3	VOA	PPM(V/V)	203	163	80	0.04	8	1.13	485	VOA_B&K_FLD	VOA_MIRAN_FLD	135.3	140	B1K933
2-Hexanone	591-78-6	VOA	µg/kg	23	2	9	1.1	370	2.3	2.4	8260_VOA_GCMS	8260_VOA_GCMS	73	75	B1HK35
2-Pentanone, 4-Methyl	108-10-1	VOA	µg/kg	23	0	0	0.85	370			8260_VOA_GCMS	8260_VOA_GCMS			
Acetic acid, methyl ester	79-20-9	VOA	µg/kg	2	2	100			200	12000	8260_VOA_GCMS	8260_VOA_GCMS	122.5	124.5	B1HK54
Acetone	67-64-1	VOA	PPM(V/V)	3	0	0	0.04	8			TO-15_VOA_GAS	TO-15_VOA_GAS			
Acetone	67-64-1	VOA	µg/kg	23	20	87	5.2	54	6.1	2900	8260_VOA_GCMS	8260_VOA_GCMS	131.5	133	B1HK64
Acetonitrile	75-05-8	VOA	µg/kg	23	7	30	2.6	750	6.6	1300	8260_VOA_GCMS	8260_VOA_GCMS	70	72	B1HK29
Benzene	71-43-2	VOA	µg/kg	23	5	22	0.24	190	0.72	3.7	8260_VOA_GCMS	8260_VOA_GCMS	70	72	B1HK30

Table A-10. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
Bromodichloromethane	75-27-4	VOA	µg/kg	23	0	0	0.14	190			8260_VOA_GCMS	8260_VOA_GCMS			
Bromoform	75-25-2	VOA	µg/kg	23	0	0	0.2	190			8260_VOA_GCMS	8260_VOA_GCMS			
Bromomethane	74-83-9	VOA	µg/kg	23	0	0	0.43	370			8260_VOA_GCMS	8260_VOA_GCMS			
Butanoic Acid Methyl Ester	623-42-7	VOA	µg/kg	1	1	100			82	82	8260_VOA_GCMS	8260_VOA_GCMS	122.5	124.5	B1HK54
Carbon Dioxide	124-38-9	VOA	PPM(V/V)	65	65	100			121	56300	VOA_MIRAN_FLD	VOA_MIRAN_FLD	128.5	130.5	B1K937
Carbon disulfide	75-15-0	VOA	µg/kg	23	0	0	0.27	190			8260_VOA_GCMS	8260_VOA_GCMS			
Carbon tetrachloride	56-23-5	VOA	µg/kg	23	13	57	0.16	190	0.83	6300	8260_VOA_GCMS	8260_VOA_GCMS	128.5	130.5	B1HK59
Carbon tetrachloride	56-23-5	VOA	PPM(V/V)	272	236	87	0.05	100	1.46	432	VOA_B&K_FLD	VOA_MIRAN_FLD	128.5	130.5	B1K937
Chlorobenzene	108-90-7	VOA	µg/kg	23	0	0	0.13	190			8260_VOA_GCMS	8260_VOA_GCMS			
Chloroethane	75-00-3	VOA	µg/kg	23	0	0	0.55	370			8260_VOA_GCMS	8260_VOA_GCMS			
Chloroform	67-66-3	VOA	PPM(V/V)	271	175	65	0.07	8	0.06	819	TO-15_VOA_GAS	VOA_B&K_FLD	135.3	140	B1K913
Chloroform	67-66-3	VOA	µg/kg	23	10	43	0.24	190	2.2	360	8260_VOA_GCMS	8260_VOA_GCMS	131.5	133	B1HK65
Chloromethane	74-87-3	VOA	µg/kg	23	0	0	0.25	370			8260_VOA_GCMS	8260_VOA_GCMS			
cis-1,2-Dichloroethylene	156-59-2	VOA	µg/kg	2	0	0	3	190			8260_VOA_GCMS	8260_VOA_GCMS			
cis-1,3-Dichloropropene	10061-01-5	VOA	µg/kg	23	0	0	0.15	190			8260_VOA_GCMS	8260_VOA_GCMS			
Cyclohexanone	108-94-1	VOA	µg/kg	15	0	0	14	950			8260_VOA_GCMS	8260_VOA_GCMS			
Decane	124-18-5	VOA	µg/kg	2	2	100			750	880	8260_VOA_GCMS	8260_VOA_GCMS	128.5	130.5	B1HK59
Dibromochloromethane	124-48-1	VOA	µg/kg	23	0	0	0.27	190			8260_VOA_GCMS	8260_VOA_GCMS			
Ethylbenzene	100-41-4	VOA	µg/kg	23	1	4	0.17	190	0.8	0.8	8260_VOA_GCMS	8260_VOA_GCMS	73	75	B1HK35
Hexachloroethane	67-72-1	VOA	µg/kg	5	5	100			240	20000	8260_VOA_GCMS	8260_VOA_GCMS	70	72	B1HK29
Hexane	110-54-3	VOA	µg/kg	23	1	4	0.32	190	3.4	3.4	8260_VOA_GCMS	8260_VOA_GCMS	70	72	B1HK30
Methane	74-82-8	VOA	PPM(V/V)	73	8	11	1.5	1.5	9	14	VOA_MIRAN_FLD	VOA_MIRAN_FLD	70	72	B1K944
Methyl propionate	554-12-1	VOA	µg/kg	1	1	100			84	84	8260_VOA_GCMS	8260_VOA_GCMS	128.5	130.5	B1HK59
Methylene chloride	75-09-2	VOA	PPM(V/V)	198	163	82	0.04	8	1.38	72	VOA_B&K_FLD	VOA_B&K_FLD	100	102	B1K8X6
Methylene chloride	75-09-2	VOA	µg/kg	23	5	22	1.2	120	5.6	140	8260_VOA_GCMS	8260_VOA_GCMS	100	102	B1HK49
n-Butylbenzene	104-51-8	VOA	µg/kg	23	0	0	0.22	190			8260_VOA_GCMS	8260_VOA_GCMS			
Nitrous Oxide	10024-97-2	VOA	PPM(V/V)	24	14	58	0.04	0.04	5.05	14.62	VOA_MIRAN_FLD	VOA_MIRAN_FLD	52.5	54.5	B1K947
Styrene	100-42-5	VOA	µg/kg	23	1	4	0.26	190	0.48	0.48	8260_VOA_GCMS	8260_VOA_GCMS	73	75	B1HK35
Tetrachloroethene	127-18-4	VOA	PPM(V/V)	3	0	0	0.04	8			TO-15_VOA_GAS	TO-15_VOA_GAS			
Tetrachloroethene	127-18-4	VOA	µg/kg	23	7	30	0.41	190	5.2	220	8260_VOA_GCMS	8260_VOA_GCMS	70	72	B1HK29
Tetrahydrofuran	109-99-9	VOA	µg/kg	4	4	100			53	490	8260_VOA_GCMS	8260_VOA_GCMS	122.5	124.5	B1HK54
Toluene	108-88-3	VOA	µg/kg	23	5	22	0.47	190	0.65	3.8	8260_VOA_GCMS	8260_VOA_GCMS	131.5	133	B1HK65
trans-1,2-Dichloroethylene	156-60-5	VOA	µg/kg	2	0	0	3	190			8260_VOA_GCMS	8260_VOA_GCMS			
trans-1,3-Dichloropropene	10061-02-6	VOA	µg/kg	23	0	0	0.27	190			8260_VOA_GCMS	8260_VOA_GCMS			
Trichloroethene	79-01-6	VOA	PPM(V/V)	3	0	0	0.04	8			TO-15_VOA_GAS	TO-15_VOA_GAS			
Trichloroethene	79-01-6	VOA	µg/kg	23	1	4	0.26	190	1.3	1.3	8260_VOA_GCMS	8260_VOA_GCMS	73	75	B1HK35
Trichloromonofluoromethane	75-69-4	VOA	µg/kg	1	1	100			3	3	8260_VOA_GCMS	8260_VOA_GCMS	122.5	124.5	B1HK55
Vinyl chloride	75-01-4	VOA	µg/kg	23	0	0	0.32	370			8260_VOA_GCMS	8260_VOA_GCMS			
Xylenes (total)	1330-20-7	VOA	µg/kg	23	1	4	0.4	190	3	3	8260_VOA_GCMS	8260_VOA_GCMS	73	75	B1HK35
Ammonia	7664-41-7	WETCHEM	µg/kg	8	1	12	2800	11300	3400	3400	350.1_AMMONIA	350.1_AMMONIA	52.5	54.5	B1HKB3

Table A-10. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-Z-9 - 299-W15-48 (Slant) (C3427)															
Ammonium ion	14798-03-9	WETCHEM	$\mu\text{g}/\text{kg}$	4	4	100			3710	21500	300.7_IC	300.7_IC	135	140	B1HK77
Chloride	16887-00-6	WETCHEM	$\mu\text{g}/\text{kg}$	12	12	100			4300	93700	9056_ANIONS_IC	9056_ANIONS_IC	70	72	B1HK32
Fluoride	16984-48-8	WETCHEM	$\mu\text{g}/\text{kg}$	12	11	92	2000	2000	1700	51400	9056_ANIONS_IC	9056_ANIONS_IC	118.5	120.5	B1HK42
Nitrate	14797-55-8	WETCHEM	$\mu\text{g}/\text{kg}$	12	11	92	487	487	61100	6990000	300.0_ANIONS_IC	9056_ANIONS_IC	100	102	B1HK52
Nitrite	14797-65-0	WETCHEM	$\mu\text{g}/\text{kg}$	12	2	17	141	1610	1050	3940	9056_ANIONS_IC	9056_ANIONS_IC	118.5	120.5	B1HK42
Nitrogen in Nitrite and Nitrate	NO2+NO3-N	WETCHEM	$\mu\text{g}/\text{kg}$	13	13	100			770	1670000	353.1_NO3/NO2	353.1_NO3/NO2	100	102	B1HK52
Phosphate	14265-44-2	WETCHEM	$\mu\text{g}/\text{kg}$	12	2	17	200	12000	2500	3900	9056_ANIONS_IC	9056_ANIONS_IC	135	140	B1HL26
Sulfate	14808-79-8	WETCHEM	$\mu\text{g}/\text{kg}$	12	12	100			10600	255000	300.0_ANIONS_IC	9056_ANIONS_IC	70	72	B1HK32

Table A-11. Summary Table for All Constituents in Shallow Zone Soil Samples

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-A-8 - C4545															
2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	93-76-5	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	93-72-1	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-D(2,4-Dichlorophenoxyacetic acid)	94-75-7	GENORG	µg/kg	1	0	0	35	35			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid)	94-82-6	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Aldrin	309-00-2	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Alpha-BHC	319-84-6	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Alpha-Chlordane	5103-71-9	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Dalapon	75-99-0	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Delta-BHC	319-86-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Dicamba	1918-00-9	GENORG	µg/kg	1	0	0	70	70			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dichloroprop	120-36-5	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dieldrin	60-57-1	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Dinoseb(2-secButyl-4,6-dinitrophenol)	88-85-7	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Endosulfan I	959-98-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Endosulfan II	33213-65-9	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Endosulfan sulfate	1031-07-8	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Endrin	72-20-8	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Endrin aldehyde	7421-93-4	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Endrin ketone	53494-70-5	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Gamma-BHC (Lindane)	58-89-9	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Gamma-Chlordane	5103-74-2	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Heptachlor	76-44-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Heptachlor epoxide	1024-57-3	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Methoxychlor	72-43-5	GENORG	µg/kg	1	0	0	17	17			8081_PEST_GC	8081_PEST_GC			
Toxaphene	8001-35-2	GENORG	µg/kg	1	0	0	170	170			8081_PEST_GC	8081_PEST_GC			

Table A-12. Summary Table for Non-RAD Constituents in Shallow Zone Soil Samples

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-A-8 - C4545															
2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	93-76-5	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	93-72-1	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-D(2,4-Dichlorophenoxyacetic acid)	94-75-7	GENORG	µg/kg	1	0	0	35	35			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid)	94-82-6	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Aldrin	309-00-2	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Alpha-BHC	319-84-6	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Alpha-Chlordane	5103-71-9	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Dalapon	75-99-0	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Delta-BHC	319-86-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Dicamba	1918-00-9	GENORG	µg/kg	1	0	0	70	70			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dichloroprop	120-36-5	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dieldrin	60-57-1	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Dinoseb(2-secButyl-4,6-dinitrophenol)	88-85-7	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Endosulfan I	959-98-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Endosulfan II	33213-65-9	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Endosulfan sulfate	1031-07-8	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Endrin	72-20-8	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Endrin aldehyde	7421-93-4	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Endrin ketone	53494-70-5	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Gamma-BHC (Lindane)	58-89-9	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Gamma-Chlordane	5103-74-2	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Heptachlor	76-44-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Heptachlor epoxide	1024-57-3	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Methoxychlor	72-43-5	GENORG	µg/kg	1	0	0	17	17			8081_PEST_GC	8081_PEST_GC			
Toxaphene	8001-35-2	GENORG	µg/kg	1	0	0	170	170			8081_PEST_GC	8081_PEST_GC			

Table A-13. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-A-8 - C4545															
2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	93-76-5	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	93-72-1	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-D(2,4-Dichlorophenoxyacetic acid)	94-75-7	GENORG	µg/kg	1	0	0	35	35			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid)	94-82-6	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Aldrin	309-00-2	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Alpha-BHC	319-84-6	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Alpha-Chlordane	5103-71-9	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Aroclor-1016	12674-11-2	GENORG	µg/kg	10	0	0	4.7	13			8082_PCB_GC	8082_PCB_GC			
Aroclor-1221	11104-28-2	GENORG	µg/kg	10	0	0	4.7	27			8082_PCB_GC	8082_PCB_GC			
Aroclor-1232	11141-16-5	GENORG	µg/kg	10	0	0	4.7	13			8082_PCB_GC	8082_PCB_GC			
Aroclor-1242	53469-21-9	GENORG	µg/kg	10	0	0	4.7	13			8082_PCB_GC	8082_PCB_GC			
Aroclor-1248	12672-29-6	GENORG	µg/kg	10	0	0	4.7	13			8082_PCB_GC	8082_PCB_GC			
Aroclor-1254	11097-69-1	GENORG	µg/kg	10	1	10	4.8	13	39	39	8082_PCB_GC	8082_PCB_GC	234	236.5	B1D994
Aroclor-1260	11096-82-5	GENORG	µg/kg	10	0	0	4.8	13			8082_PCB_GC	8082_PCB_GC			
Aroclor-1262	37324-23-5	GENORG	µg/kg	7	0	0	10	13			8082_PCB_GC	8082_PCB_GC			
Aroclor-1268	11100-14-4	GENORG	µg/kg	7	0	0	10	13			8082_PCB_GC	8082_PCB_GC			
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Calcium Carbonate	471-34-1	GENORG	%	6	5	83	0	0	0	2	D4373_GASGEN	D4373_GASGEN	104	106.5	B1D992
Dalapon	75-99-0	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Delta-BHC	319-86-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Dicamba	1918-00-9	GENORG	µg/kg	1	0	0	70	70			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dichloroprop	120-36-5	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dieldrin	60-57-1	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Dinoseb(2-secButyl-4,6-dinitrophenol)	88-85-7	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Endosulfan I	959-98-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Endosulfan II	33213-65-9	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Endosulfan sulfate	1031-07-8	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Endrin	72-20-8	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Endrin aldehyde	7421-93-4	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			

Table A-13. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-A-8 - C4545															
Endrin ketone	53494-70-5	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Gamma-BHC (Lindane)	58-89-9	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Gamma-Chlordane	5103-74-2	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Heptachlor	76-44-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Heptachlor epoxide	1024-57-3	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Methoxychlor	72-43-5	GENORG	µg/kg	1	0	0	17	17			8081_PEST_GC	8081_PEST_GC			
Oil and grease	OIL/GREASE	GENORG	µg/kg	10	0	0	82600	720000			9071_OILGREASE	9071_OILGREASE			
Total Inorganic Carbon	TINC	GENORG	µg/kg	10	5	50	45600	732000	793000	2910000	9060_TOC	415.1_TOC	104	106.5	B1D992
Total organic carbon	TOC	GENORG	µg/kg	10	7	70	54000	115000	43700	1020000	415.1_TOC	9060_TOC	22.5	25	B1D9Y5
Total petroleum hydrocarbons diesel range	TPHDIESEL	GENORG	µg/kg	10	0	0	520	4000			WTPH_DIESEL	WTPH_DIESEL			
Total petroleum hydrocarbons kerosene range	TPHKEROSENE	GENORG	µg/kg	10	0	0	500	4000			WTPH_DIESEL	WTPH_DIESEL			
Toxaphene	8001-35-2	GENORG	µg/kg	1	0	0	170	170			8081_PEST_GC	8081_PEST_GC			
Antimony	7440-36-0	METAL	µg/kg	3	3	100			1700	1900	6010_METALS_ICP_TR	6010_METALS_ICP_TR	19	21.5	B1D7C8
Arsenic	7440-38-2	METAL	µg/kg	10	10	100			650	2450	200.8_METALS_ICPMS	200.8_METALS_ICPMS	234	236.5	B1D994
Barium	7440-39-3	METAL	µg/kg	10	10	100			25500	88600	200.8_METALS_ICPMS	6010_METALS_ICP_TR	27.5	30	B1D7C8
Bismuth	7440-69-9	METAL	µg/kg	10	3	30	1080	1100	94300	102000	6010_METALS_ICP_TR	6010_METALS_ICP_TR	19	21.5	B1D9Y4
Cadmium	7440-43-9	METAL	µg/kg	10	5	50	104	140	118	240	200.8_METALS_ICPMS	200.8_METALS_ICPMS	104	106.5	B1D992
Chromium	7440-47-3	METAL	µg/kg	10	10	100			3300	41800	6010_METALS_ICP_TR	200.8_METALS_ICPMS	178	180.5	B1D993
Copper	7440-50-8	METAL	µg/kg	10	10	100			5010	14700	200.8_METALS_ICPMS	6010_METALS_ICP_TR	27.5	30	B1D7C8
Hexavalent Chromium	18540-29-9	METAL	µg/kg	10	2	20	200	250	270	278	7196_CR6	7196_CR6	27.5	30	B1D7C7
Lead	7439-92-1	METAL	µg/kg	10	10	100			1390	5340	200.8_METALS_ICPMS	200.8_METALS_ICPMS	27.5	30	B1D7C7
Mercury	7439-97-6	METAL	µg/kg	10	2	20	7	106	119	300	200.8_METALS_ICPMS	7471_HG_CVAA	19	21.5	B1D9Y4
Nickel	7440-02-0	METAL	µg/kg	10	10	100			3890	30600	200.8_METALS_ICPMS	200.8_METALS_ICPMS	49	51.5	B1D7D0
Phosphorus	7723-14-0	METAL	µg/kg	10	10	100			451000	1430000	6010_METALS_ICP	6010_METALS_ICP_TR	19	21.5	B1D9Y4
Selenium	7782-49-2	METAL	µg/kg	10	5	50	408	420	583	1800	200.8_METALS_ICPMS	6010_METALS_ICP_TR	19	21.5	B1D9Y4
Silver	7440-22-4	METAL	µg/kg	10	1	10	102	270	135	135	200.8_METALS_ICPMS	200.8_METALS_ICPMS	49	51.5	B1D7C9
Thallium	7440-28-0	METAL	µg/kg	3	3	100			840	2500	6010_METALS_ICP_TR	6010_METALS_ICP_TR	19	21.5	B1D9Y4
Uranium	7440-61-1	METAL	µg/kg	10	10	100			180	2160	200.8_METALS_ICPMS	UTOT_KPA	19	21.5	B1D9Y4
Bulk density - dry	BULKDENSITY-DRY	PHYSICAL	kg/m3	6	6	100			1712	2305	D2937_DENSITY	D2937_DENSITY	262	264.5	B1D995
Bulk density - wet	BULKDENSITY-WET	PHYSICAL	kg/m3	6	6	100			1749	2470	D2937_DENSITY	D2937_DENSITY	262	264.5	B1D995

Table A-13. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-A-8 - C4545															
Percent moisture (dry sample)	%MOISTUR E-D	PHYSICAL	%	6	6	100			2.4	9.4	D2216_%MOIS	D2216_%MOIS	262	264.5	B1D995
Percent moisture (wet sample)	%MOISTUR E	PHYSICAL	%	6	6	100			2.3	8.6	D2216_%MOIS	D2216_%MOIS	262	264.5	B1D995
Percent passing 1.5 inch sieve	PAS1.5IN	PHYSICAL	%	6	6	100			89.8	100	D422_PARTCLSIZE	D422_PARTCLSIZE	27.5	30	B1D7C7
Percent passing 3 inch sieve	PAS3IN	PHYSICAL	%	6	6	100			100	100	D422_PARTCLSIZE	D422_PARTCLSIZE	27.5	30	B1D7C7
Percent passing 3/4 inch sieve	PAS3/4IN	PHYSICAL	%	6	6	100			85.9	100	D422_PARTCLSIZE	D422_PARTCLSIZE	27.5	30	B1D7C7
Percent passing 3/8 inch sieve	PAS3/8IN	PHYSICAL	%	6	6	100			80.8	100	D422_PARTCLSIZE	D422_PARTCLSIZE	104	106.5	B1D992
Percent passing No.10 sieve	PAS#10	PHYSICAL	%	6	6	100			47.7	99.3	D422_PARTCLSIZE	D422_PARTCLSIZE	234	236.5	B1D994
Percent passing No.100 sieve	PAS#100	PHYSICAL	%	6	6	100			6.6	36.1	D422_PARTCLSIZE	D422_PARTCLSIZE	234	236.5	B1D994
Percent passing No.140 sieve	PAS#140	PHYSICAL	%	6	6	100			5.2	29.2	D422_PARTCLSIZE	D422_PARTCLSIZE	234	236.5	B1D994
Percent passing No.20 sieve	PAS#20	PHYSICAL	%	6	6	100			28.9	97.1	D422_PARTCLSIZE	D422_PARTCLSIZE	234	236.5	B1D994
Percent passing No.200 sieve	PAS#200	PHYSICAL	%	6	6	100			4.1	23.7	D422_PARTCLSIZE	D422_PARTCLSIZE	234	236.5	B1D994
Percent passing No.4 sieve	PAS#4	PHYSICAL	%	6	6	100			70.3	99.8	D422_PARTCLSIZE	D422_PARTCLSIZE	104	106.5	B1D992
Percent passing No.40 sieve	PAS#40	PHYSICAL	%	6	6	100			18.5	79.2	D422_PARTCLSIZE	D422_PARTCLSIZE	234	236.5	B1D994
Percent passing No.60 sieve	PAS#60	PHYSICAL	%	6	6	100			10.2	53.5	D422_PARTCLSIZE	D422_PARTCLSIZE	234	236.5	B1D994
Percent Solids	%SOLIDS	PHYSICAL	%	1	1	100			94.2	94.2	%SOLIDS	%SOLIDS	27.5	30	B1D7C7
pH Measurement	PH	PHYSICAL	pH	10	10	100			8	9.18	9045_PH	150.1_PH	262	264.5	B1D995
Specific Gravity	SPECGVTY	PHYSICAL	unitless	6	6	100			2.7168	2.8549	D854_PARTLDEN	D854_PARTLDEN	27.5	30	B1D7C7
Americium-241	14596-10-2	RAD	pCi/g	10	0	0	-0.054	4.99			AMCMISO_IE_PLATE_A EA	AMCMISO_IE_PLATE_A AEA			
Antimony-125	14234-35-6	RAD	pCi/g	12	0	0	-0.418	1800			GAMMA_GS	GAMMA_GS			
Carbon-14	14762-75-5	RAD	pCi/g	10	3	30	-1.11	0.004	4.34	89.7	C14_COX_LSC	C14_COX_LSC	27.5	30	B1D7C7
Cesium-134	13967-70-9	RAD	pCi/g	12	0	0	0.026	340			GAMMA_GS	GAMMA_GS			
Cesium-137	10045-97-3	RAD	pCi/g	18	10	56	-0.001	0.15	0.432	877000	GAMMA_GS	GAMMA_GS	19	21.5	B1D9Y4
Cobalt-60	10198-40-0	RAD	pCi/g	18	0	0	-0.005	170			GAMMA_GS	GAMMA_GS			
Europium-152	14683-23-9	RAD	pCi/g	18	0	0	-0.011	1500			GAMMA_GS	GAMMA_GS			
Europium-154	15585-10-1	RAD	pCi/g	18	0	0	-0.03	520			GAMMA_GS	GAMMA_GS			
Europium-155	14391-16-3	RAD	pCi/g	18	2	11	-0.338	860	0.045	0.055	GAMMA_GS	GAMMA_GS	49	51.5	B1D7C9
Gross alpha	12587-46-1	RAD	pCi/g	2	1	50	0.81	0.81	4.8	4.8	ALPHA_GPC	ALPHA_GPC	27.5	30	B1D7C7
Gross beta	12587-47-2	RAD	pCi/g	2	2	100			4.2	1400	BETA_GPC	BETA_GPC	27.5	30	B1D7C7
Iodine-129	15046-84-1	RAD	pCi/g	10	0	0	-2.39	1.13			I129_SEP_LEPS_GS	I129_SEP_LEPS_GS			
Neptunium-237	13994-20-2	RAD	pCi/g	4	2	50	0	0.27	0.015	3.53	NP237_LLE_PLATE_AEA	NP237_LLE_PLATE_AEA	19	21.5	B1D9Y4
Plutonium-238	13981-16-3	RAD	pCi/g	10	0	0	-0.002	0.046			PUISO_IE_PRECIP_AEA	PUISO_IE_PRECIP_AEA			
Plutonium-239/240	PU-239/240	RAD	pCi/g	10	4	40	-0.002	0.043	0.011	55.7	PUISO_IE_PRECIP_AEA	PUISO_PLATE_AEA	19	21.5	B1D9Y4

Table A-13. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-A-8 - C4545															
Potassium-40	13966-00-2	RAD	pCi/g	10	8	80	1.7	6200	7.9	17.4	GAMMA_GS	GAMMA_GS	234	236.5	B1D994
Radium-226	13982-63-3	RAD	pCi/g	11	7	64	0.31	760	0.224	0.617	GAMMA_GS	GAMMA_GS	234	236.5	B1D994
Radium-228	15262-20-1	RAD	pCi/g	11	7	64	0.387	870	0.479	1.1	GAMMA_GS	GAMMA_GS	22.5	25	B1D9Y5
Technetium-99	14133-76-7	RAD	pCi/g	10	3	30	-0.006	1.3	0.992	79.6	TC99_TR_SEP_GPC	TC99_TR_SEP_GPC	19	21.5	B1D9Y4
Thorium-228	14274-82-9	RAD	pCi/g	4	2	50	0	0.361	0.298	0.551	THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	49	51.5	B1D7D0
Thorium-230	14269-63-7	RAD	pCi/g	4	1	25	-5	0.417	0.378	0.378	THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	49	51.5	B1D7D0
Thorium-232	TH-232	RAD	pCi/g	4	2	50	-1.67	1.17	0.447	0.706	THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	22.5	25	B1D9Y5
Total beta radiostrontium	SR-RAD	RAD	pCi/g	10	4	40	-0.39	0.25	0.28	4380	SRTOT_SEP_PRECIP_GPC	SRTOT_SEP_PRECIP_GPC	19	21.5	B1D9Y4
Tritium	10028-17-8	RAD	pCi/g	10	6	60	0.89	3.78	3.24	8.5	TRITIUM_COX_LSC	TRITIUM_COX_LSC	234	236.5	B1D994
Uranium-233/234	U-233/234	RAD	pCi/g	10	9	90	2.34	2.34	0.069	0.36	UIISO_IE_PRECIP_AEA	UIISO_PLATE_AEA	27.5	30	B1D7C8
Uranium-235	15117-96-1	RAD	pCi/g	10	4	40	-0.002	0.057	0.012	0.02	UIISO_IE_PRECIP_AEA	UIISO_IE_PRECIP_AEA	234	236.5	B1D994
Uranium-238	U-238	RAD	pCi/g	10	9	90	0	0	0.098	0.469	UIISO_IE_PRECIP_AEA	UIISO_PLATE_AEA	22.5	25	B1D9Y5
1,2,4-Trichlorobenzene	120-82-1	SVOA	µg/kg	10	0	0	35	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,2,4-Trimethylbenzene	95-63-6	SVOA	µg/kg	7	0	0	120	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,2-Dichlorobenzene	95-50-1	SVOA	µg/kg	10	0	0	39	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,3-Dichlorobenzene	541-73-1	SVOA	µg/kg	10	0	0	33	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,4-Dichlorobenzene	106-46-7	SVOA	µg/kg	10	0	0	36	190			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4,5-Trichlorophenol	95-95-4	SVOA	µg/kg	10	0	0	30	250			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4,6-Trichlorophenol	88-06-2	SVOA	µg/kg	10	0	0	8.9	150			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dichlorophenol	120-83-2	SVOA	µg/kg	10	0	0	21	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dimethylphenol	105-67-9	SVOA	µg/kg	10	0	0	91	370			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dinitrophenol	51-28-5	SVOA	µg/kg	10	0	0	99	340			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dinitrotoluene	121-14-2	SVOA	µg/kg	10	0	0	36	130			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,6-Dichlorophenol	87-65-0	SVOA	µg/kg	1	0	0	20	20			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,6-Dinitrotoluene	606-20-2	SVOA	µg/kg	10	0	0	19	190			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Butoxyethanol	111-76-2	SVOA	µg/kg	7	0	0	84	220			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Chloronaphthalene	91-58-7	SVOA	µg/kg	10	0	0	34	200			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Chlorophenol	95-57-8	SVOA	µg/kg	10	0	0	18	220			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Ethyl-1-hexanol	104-76-7	SVOA	µg/kg	1	0	0	760	760			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Methylnaphthalene	91-57-6	SVOA	µg/kg	10	0	0	37	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Methylphenol (cresol, o-)	95-48-7	SVOA	µg/kg	10	0	0	34	220			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Naphthylamine	91-59-8	SVOA	µg/kg	10	0	0	44	180			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Nitroaniline	88-74-4	SVOA	µg/kg	10	0	0	8.7	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Nitrophenol	88-75-5	SVOA	µg/kg	10	0	0	38	230			8270_SVOA_GCMS	8270_SVOA_GCMS			
3,3'-Dichlorobenzidine	91-94-1	SVOA	µg/kg	10	0	0	120	210			8270_SVOA_GCMS	8270_SVOA_GCMS			
3+4 Methylphenol (cresol, m+p)	65794-96-9	SVOA	µg/kg	10	0	0	68	270			8270_SVOA_GCMS	8270_SVOA_GCMS			
3-Nitroaniline	99-09-2	SVOA	µg/kg	10	0	0	59	140			8270_SVOA_GCMS	8270_SVOA_GCMS			
4,6-Dinitro-2-methylphenol	534-52-1	SVOA	µg/kg	10	0	0	62	320			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Bromophenylphenyl ether	101-55-3	SVOA	µg/kg	10	0	0	36	210			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chloro-3-methylphenol	59-50-7	SVOA	µg/kg	10	0	0	19	200			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chloroaniline	106-47-8	SVOA	µg/kg	10	0	0	130	200			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chlorophenylphenyl ether	7005-72-3	SVOA	µg/kg	10	0	0	7.3	160			8270_SVOA_GCMS	8270_SVOA_GCMS			

Table A-13. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-A-8 - C4545															
4-Nitroaniline	100-01-6	SVOA	µg/kg	10	0	0	67	250			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Nitrophenol	100-02-7	SVOA	µg/kg	10	0	0	35	370			8270_SVOA_GCMS	8270_SVOA_GCMS			
Acenaphthene	83-32-9	SVOA	µg/kg	10	0	0	36	200			8270_SVOA_GCMS	8270_SVOA_GCMS			
Acenaphthylene	208-96-8	SVOA	µg/kg	10	0	0	27	150			8270_SVOA_GCMS	8270_SVOA_GCMS			
Anthracene	120-12-7	SVOA	µg/kg	10	0	0	18	180			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(a)anthracene	56-55-3	SVOA	µg/kg	10	0	0	36	190			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(a)pyrene	50-32-8	SVOA	µg/kg	10	0	0	32	140			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(b)fluoranthene	205-99-2	SVOA	µg/kg	10	0	0	37	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(ghi)perylene	191-24-2	SVOA	µg/kg	10	0	0	40	290			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(k)fluoranthene	207-08-9	SVOA	µg/kg	10	0	0	55	250			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzyl alcohol	100-51-6	SVOA	µg/kg	9	0	0	54	260			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-chloro-1-methylethyl)ether	108-60-1	SVOA	µg/kg	10	0	0	38	250			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-Chloroethoxy)methane	111-91-1	SVOA	µg/kg	10	0	0	35	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-chloroethyl) ether	111-44-4	SVOA	µg/kg	10	0	0	18	200			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-ethylhexyl) phthalate	117-81-7	SVOA	µg/kg	10	0	0	35	270			8270_SVOA_GCMS	8270_SVOA_GCMS			
Butylbenzylphthalate	85-68-7	SVOA	µg/kg	10	0	0	13	220			8270_SVOA_GCMS	8270_SVOA_GCMS			
Carbazole	86-74-8	SVOA	µg/kg	10	0	0	20	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
Chrysene	218-01-9	SVOA	µg/kg	10	0	0	40	210			8270_SVOA_GCMS	8270_SVOA_GCMS			
Cyclohexanone	108-94-1	SVOA	µg/kg	7	0	0	89	200			8270_SVOA_GCMS	8270_SVOA_GCMS			
Decane	124-18-5	SVOA	µg/kg	7	1	14	180	340	500	500	8270_SVOA_GCMS	8270_SVOA_GCMS	104	106.5	B1D992
Dibenz[a,h]anthracene	53-70-3	SVOA	µg/kg	10	0	0	35	250			8270_SVOA_GCMS	8270_SVOA_GCMS			
Dibenzofuran	132-64-9	SVOA	µg/kg	10	0	0	19	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
Diethylphthalate	84-66-2	SVOA	µg/kg	10	0	0	36	190			8270_SVOA_GCMS	8270_SVOA_GCMS			
Dimethyl phthalate	131-11-3	SVOA	µg/kg	10	0	0	20	140			8270_SVOA_GCMS	8270_SVOA_GCMS			
Di-n-butylphthalate	84-74-2	SVOA	µg/kg	10	4	40	28	730	180	690	8270_SVOA_GCMS	8270_SVOA_GCMS	178	180.5	B1D993
Di-n-octylphthalate	117-84-0	SVOA	µg/kg	10	0	0	38	310			8270_SVOA_GCMS	8270_SVOA_GCMS			
Fluoranthene	206-44-0	SVOA	µg/kg	10	0	0	23	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
Fluorene	86-73-7	SVOA	µg/kg	10	0	0	6.6	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorobenzene	118-74-1	SVOA	µg/kg	10	0	0	17	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorobutadiene	87-68-3	SVOA	µg/kg	10	0	0	38	190			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorocyclopentadiene	77-47-4	SVOA	µg/kg	10	0	0	37	240			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachloroethane	67-72-1	SVOA	µg/kg	10	0	0	37	140			8270_SVOA_GCMS	8270_SVOA_GCMS			
Indeno(1,2,3-cd)pyrene	193-39-5	SVOA	µg/kg	10	0	0	17	190			8270_SVOA_GCMS	8270_SVOA_GCMS			
Isophorone	78-59-1	SVOA	µg/kg	10	0	0	38	190			8270_SVOA_GCMS	8270_SVOA_GCMS			
Naphthalene	91-20-3	SVOA	µg/kg	10	0	0	35	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
Nitrobenzene	98-95-3	SVOA	µg/kg	10	0	0	18	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
n-Nitrosodi-n-dipropylamine	621-64-7	SVOA	µg/kg	10	0	0	39	260			8270_SVOA_GCMS	8270_SVOA_GCMS			
n-Nitrosodiphenylamine	86-30-6	SVOA	µg/kg	10	0	0	21	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
nonadecane	629-92-5	SVOA	µg/kg	1	1	100			1600	1600	8270_SVOA_GCMS	8270_SVOA_GCMS	104	106.5	B1D992
Pentachlorophenol	87-86-5	SVOA	µg/kg	10	0	0	74	290			8270_SVOA_GCMS	8270_SVOA_GCMS			
Phenanthrene	85-01-8	SVOA	µg/kg	10	0	0	6.7	180			8270_SVOA_GCMS	8270_SVOA_GCMS			
Phenol	108-95-2	SVOA	µg/kg	10	0	0	24	240			8270_SVOA_GCMS	8270_SVOA_GCMS			
Pyrene	129-00-0	SVOA	µg/kg	10	0	0	35	210			8270_SVOA_GCMS	8270_SVOA_GCMS			
Pyridine	110-86-1	SVOA	µg/kg	10	0	0	48	140			8270_SVOA_GCMS	8270_SVOA_GCMS			
Tributyl phosphate	126-73-8	SVOA	µg/kg	10	0	0	72	590			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,1,1-Trichloroethane	71-55-6	VOA	µg/kg	10	0	0	0.55	2.8			8260_VOA_GCMS	8260_VOA_GCMS			

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Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-A-8 - C4545															
1,1,2,2-Tetrachloroethane	79-34-5	VOA	µg/kg	10	0	0	0.12	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
1,1,2-Trichloroethane	79-00-5	VOA	µg/kg	10	0	0	0.75	3.8			8260_VOA_GCMS	8260_VOA_GCMS			
1,1-Dichloroethane	75-34-3	VOA	µg/kg	10	0	0	0.54	2.7			8260_VOA_GCMS	8260_VOA_GCMS			
1,1-Dichloroethene	75-35-4	VOA	µg/kg	10	0	0	0.67	3.4			8260_VOA_GCMS	8260_VOA_GCMS			
1,2,4-Trimethylbenzene	95-63-6	VOA	µg/kg	3	0	0	0.57	2.8			8260_VOA_GCMS	8260_VOA_GCMS			
1,2-Dichloroethane	107-06-2	VOA	µg/kg	10	0	0	0.42	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
1,2-Dichloroethene (Total)	540-59-0	VOA	µg/kg	10	0	0	0.22	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
1,2-Dichloropropane	78-87-5	VOA	µg/kg	10	0	0	0.46	2.3			8260_VOA_GCMS	8260_VOA_GCMS			
1-Butanol	71-36-3	VOA	µg/kg	10	0	0	8.7	44			8260_VOA_GCMS	8260_VOA_GCMS			
2-Butanone	78-93-3	VOA	µg/kg	10	0	0	0.76	3.8			8260_VOA_GCMS	8260_VOA_GCMS			
2-Hexanone	591-78-6	VOA	µg/kg	10	0	0	0.68	3.4			8260_VOA_GCMS	8260_VOA_GCMS			
2-Pentanone	107-87-9	VOA	µg/kg	7	0	0	1.7	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
2-Pentanone, 4-Methyl	108-10-1	VOA	µg/kg	10	0	0	0.67	3.4			8260_VOA_GCMS	8260_VOA_GCMS			
Acetone	67-64-1	VOA	µg/kg	10	3	30	1.7	2.1	3.3	19	8260_VOA_GCMS	8260_VOA_GCMS	19	21.5	B1D9Y4
Acetonitrile	75-05-8	VOA	µg/kg	10	1	10	3.4	26	12	12	8260_VOA_GCMS	8260_VOA_GCMS	25	27.5	B1DB24
Benzene	71-43-2	VOA	µg/kg	10	0	0	0.13	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
Bromodichloromethane	75-27-4	VOA	µg/kg	10	0	0	0.39	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
Bromoform	75-25-2	VOA	µg/kg	10	0	0	0.62	3.1			8260_VOA_GCMS	8260_VOA_GCMS			
Bromomethane	74-83-9	VOA	µg/kg	10	0	0	0.64	3.2			8260_VOA_GCMS	8260_VOA_GCMS			
Carbon disulfide	75-15-0	VOA	µg/kg	10	0	0	0.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
Carbon tetrachloride	56-23-5	VOA	µg/kg	10	0	0	0.45	2.2			8260_VOA_GCMS	8260_VOA_GCMS			
Chlorobenzene	108-90-7	VOA	µg/kg	10	0	0	0.54	2.7			8260_VOA_GCMS	8260_VOA_GCMS			
Chloroethane	75-00-3	VOA	µg/kg	10	0	0	0.52	2.6			8260_VOA_GCMS	8260_VOA_GCMS			
Chloroform	67-66-3	VOA	µg/kg	10	0	0	0.52	2.6			8260_VOA_GCMS	8260_VOA_GCMS			
Chloromethane	74-87-3	VOA	µg/kg	10	0	0	0.93	4.6			8260_VOA_GCMS	8260_VOA_GCMS			
cis-1,2-Dichloroethylene	156-59-2	VOA	µg/kg	8	0	0	0.48	2.4			8260_VOA_GCMS	8260_VOA_GCMS			
cis-1,3-Dichloropropene	10061-01-5	VOA	µg/kg	10	0	0	0.27	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
Cyclohexane	110-82-7	VOA	µg/kg	10	0	0	0.3	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
Cyclohexanone	108-94-1	VOA	µg/kg	3	0	0	2.7	14			8260_VOA_GCMS	8260_VOA_GCMS			
Dibromochloromethane	124-48-1	VOA	µg/kg	10	0	0	0.26	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
Ethyl acetate	141-78-6	VOA	µg/kg	2	2	100			13	23	8260_VOA_GCMS	8260_VOA_GCMS	25	27.5	B1DB24
Ethylbenzene	100-41-4	VOA	µg/kg	10	0	0	0.44	2.2			8260_VOA_GCMS	8260_VOA_GCMS			
Hexane	110-54-3	VOA	µg/kg	10	0	0	0.84	4.2			8260_VOA_GCMS	8260_VOA_GCMS			
Methylene chloride	75-09-2	VOA	µg/kg	10	0	0	1.7	13			8260_VOA_GCMS	8260_VOA_GCMS			
n-Butylbenzene	104-51-8	VOA	µg/kg	10	0	0	0.6	3			8260_VOA_GCMS	8260_VOA_GCMS			
Styrene	100-42-5	VOA	µg/kg	10	0	0	0.47	2.4			8260_VOA_GCMS	8260_VOA_GCMS			
Tetrachloroethene	127-18-4	VOA	µg/kg	10	0	0	0.55	2.8			8260_VOA_GCMS	8260_VOA_GCMS			
Tetrahydrofuran	109-99-9	VOA	µg/kg	10	0	0	1.2	6.2			8260_VOA_GCMS	8260_VOA_GCMS			
Toluene	108-88-3	VOA	µg/kg	10	0	0	0.33	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
trans-1,2-Dichloroethylene	156-60-5	VOA	µg/kg	10	0	0	0.69	3.4			8260_VOA_GCMS	8260_VOA_GCMS			
trans-1,3-Dichloropropene	10061-02-6	VOA	µg/kg	10	0	0	0.4	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
Trichloroethene	79-01-6	VOA	µg/kg	10	0	0	0.44	2.2			8260_VOA_GCMS	8260_VOA_GCMS			
Trichloromonofluoromethane	75-69-4	VOA	µg/kg	10	0	0	0.64	3.2			8260_VOA_GCMS	8260_VOA_GCMS			
Vinyl chloride	75-01-4	VOA	µg/kg	10	0	0	0.71	3.6			8260_VOA_GCMS	8260_VOA_GCMS			
Xylenes (total)	1330-20-7	VOA	µg/kg	10	0	0	1.3	6.3			8260_VOA_GCMS	8260_VOA_GCMS			
Ammonia	7664-41-7	WETCHEM	µg/kg	3	0	0	70.5	74.2			350.1_AMMONIA	350.1_AMMONIA			
Ammonium ion	14798-03-9	WETCHEM	µg/kg	7	2	29	252	258	316	558	300.7_IC	300.7_IC	178	180.5	B1D993
Chloride	16887-00-6	WETCHEM	µg/kg	10	4	40	2550	2600	760	5280	300.0_ANIONS_IC	300.0_ANIONS_IC	27.5	30	B1D7C7

Table A-13. Summary Table for All Constituents in Deep Zone Soil Samples (7 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-A-8 - C4545															
Fluoride	16984-48-8	WETCHEM	µg/kg	10	0	0	51	1150			300.0_ANIONS_IC	300.0_ANIONS_IC			
Nitrate	14797-55-8	WETCHEM	µg/kg	10	4	40	2820	2880	1550	31400	300.0_ANIONS_IC	300.0_ANIONS_IC	19	21.5	B1D9Y4
Nitrite	14797-65-0	WETCHEM	µg/kg	10	1	10	200	3120	312	312	300.0_ANIONS_IC	300.0_ANIONS_IC	22.5	25	B1D9Y5
Nitrogen in Nitrite and Nitrate	NO2+NO3-N	WETCHEM	µg/kg	10	5	50	27	4000	220	53300	353.2_NO3/NO2	353.1_NO3/NO2	19	21.5	B1D9Y4
Phosphate	14265-44-2	WETCHEM	µg/kg	10	3	30	8130	8280	1500	2600	300.0_ANIONS_IC	300.0_ANIONS_IC	19	21.5	B1D9Y4
Sulfate	14808-79-8	WETCHEM	µg/kg	10	5	50	4900	5000	3400	107000	300.0_ANIONS_IC	300.0_ANIONS_IC	27.5	30	B1D7C7

Table A-14. Summary Table for RAD Only Constituents in Deep Zone Soil Samples

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-A-8 - C4545															
Americium-241	14596-10-2	RAD	pCi/g	10	0	0	-0.054	4.99			AMCMISO_IE_PLATE_AEA	AMCMISO_IE_PLATE_AEA			
Antimony-125	14234-35-6	RAD	pCi/g	12	0	0	-0.418	1800			GAMMA_GS	GAMMA_GS			
Carbon-14	14762-75-5	RAD	pCi/g	10	3	30	-1.11	0.004	4.34	89.7	C14_COX_LSC	C14_COX_LSC	27.5	30	B1D7C7
Cesium-134	13967-70-9	RAD	pCi/g	12	0	0	0.026	340			GAMMA_GS	GAMMA_GS			
Cesium-137	10045-97-3	RAD	pCi/g	18	10	56	-0.001	0.15	0.432	877000	GAMMA_GS	GAMMA_GS	19	21.5	B1D9Y4
Cobalt-60	10198-40-0	RAD	pCi/g	18	0	0	-0.005	170			GAMMA_GS	GAMMA_GS			
Europium-152	14683-23-9	RAD	pCi/g	18	0	0	-0.011	1500			GAMMA_GS	GAMMA_GS			
Europium-154	15585-10-1	RAD	pCi/g	18	0	0	-0.03	520			GAMMA_GS	GAMMA_GS			
Europium-155	14391-16-3	RAD	pCi/g	18	2	11	-0.338	860	0.045	0.055	GAMMA_GS	GAMMA_GS	49	51.5	B1D7C9
Gross alpha	12587-46-1	RAD	pCi/g	2	1	50	0.81	0.81	4.8	4.8	ALPHA_GPC	ALPHA_GPC	27.5	30	B1D7C7
Gross beta	12587-47-2	RAD	pCi/g	2	2	100			4.2	1400	BETA_GPC	BETA_GPC	27.5	30	B1D7C7
Iodine-129	15046-84-1	RAD	pCi/g	10	0	0	-2.39	1.13			I129_SEP_LEPS_GS	I129_SEP_LEPS_GS			
Neptunium-237	13994-20-2	RAD	pCi/g	4	2	50	0	0.27	0.015	3.53	NP237_LLE_PLATE_AEA	NP237_LLE_PLATE_AEA	19	21.5	B1D9Y4
Plutonium-238	13981-16-3	RAD	pCi/g	10	0	0	-0.002	0.046			PUISO_IE_PRECIP_AEA	PUISO_IE_PRECIP_AEA			
Plutonium-239/240	PU-239/240	RAD	pCi/g	10	4	40	-0.002	0.043	0.011	55.7	PUISO_IE_PRECIP_AEA	PUISO_PLATE_AEA	19	21.5	B1D9Y4
Potassium-40	13966-00-2	RAD	pCi/g	10	8	80	1.7	6200	7.9	17.4	GAMMA_GS	GAMMA_GS	234	236.5	B1D994
Radium-226	13982-63-3	RAD	pCi/g	11	7	64	0.31	760	0.224	0.617	GAMMA_GS	GAMMA_GS	234	236.5	B1D994
Radium-228	15262-20-1	RAD	pCi/g	11	7	64	0.387	870	0.479	1.1	GAMMA_GS	GAMMA_GS	22.5	25	B1D9Y5
Technetium-99	14133-76-7	RAD	pCi/g	10	3	30	-0.006	1.3	0.992	79.6	TC99_TR_SEP_GPC	TC99_TR_SEP_GPC	19	21.5	B1D9Y4
Thorium-228	14274-82-9	RAD	pCi/g	4	2	50	0	0.361	0.298	0.551	THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	49	51.5	B1D7D0
Thorium-230	14269-63-7	RAD	pCi/g	4	1	25	-5	0.417	0.378	0.378	THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	49	51.5	B1D7D0
Thorium-232	TH-232	RAD	pCi/g	4	2	50	-1.67	1.17	0.447	0.706	THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	22.5	25	B1D9Y5
Total beta radiostrontium	SR-RAD	RAD	pCi/g	10	4	40	-0.39	0.25	0.28	4380	SRTOT_SEP_PRECIP_GPC	SRTOT_SEP_PRECIP_GPC	19	21.5	B1D9Y4
Tritium	10028-17-8	RAD	pCi/g	10	6	60	0.89	3.78	3.24	8.5	TRITIUM_COX_LSC	TRITIUM_COX_LSC	234	236.5	B1D994
Uranium-233/234	U-233/234	RAD	pCi/g	10	9	90	2.34	2.34	0.069	0.36	UIISO_IE_PRECIP_AEA	UIISO_PLATE_AEA	27.5	30	B1D7C8
Uranium-235	15117-96-1	RAD	pCi/g	10	4	40	-0.002	0.057	0.012	0.02	UIISO_IE_PRECIP_AEA	UIISO_IE_PRECIP_AEA	234	236.5	B1D994
Uranium-238	U-238	RAD	pCi/g	10	9	90	0	0	0.098	0.469	UIISO_IE_PRECIP_AEA	UIISO_PLATE_AEA	22.5	25	B1D9Y5

Table A-15. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (6 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-A-8 - C4545															
2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	93-76-5	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	93-72-1	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-D(2,4-Dichlorophenoxyacetic acid)	94-75-7	GENORG	µg/kg	1	0	0	35	35			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid)	94-82-6	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Aldrin	309-00-2	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Alpha-BHC	319-84-6	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Alpha-Chlordane	5103-71-9	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Aroclor-1016	12674-11-2	GENORG	µg/kg	10	0	0	4.7	13			8082_PCB_GC	8082_PCB_GC			
Aroclor-1221	11104-28-2	GENORG	µg/kg	10	0	0	4.7	27			8082_PCB_GC	8082_PCB_GC			
Aroclor-1232	11141-16-5	GENORG	µg/kg	10	0	0	4.7	13			8082_PCB_GC	8082_PCB_GC			
Aroclor-1242	53469-21-9	GENORG	µg/kg	10	0	0	4.7	13			8082_PCB_GC	8082_PCB_GC			
Aroclor-1248	12672-29-6	GENORG	µg/kg	10	0	0	4.7	13			8082_PCB_GC	8082_PCB_GC			
Aroclor-1254	11097-69-1	GENORG	µg/kg	10	1	10	4.8	13	39	39	8082_PCB_GC	8082_PCB_GC	234	236.5	B1D994
Aroclor-1260	11096-82-5	GENORG	µg/kg	10	0	0	4.8	13			8082_PCB_GC	8082_PCB_GC			
Aroclor-1262	37324-23-5	GENORG	µg/kg	7	0	0	10	13			8082_PCB_GC	8082_PCB_GC			
Aroclor-1268	11100-14-4	GENORG	µg/kg	7	0	0	10	13			8082_PCB_GC	8082_PCB_GC			
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Calcium Carbonate	471-34-1	GENORG	%	6	5	83	0	0	0	2	D4373_GASGEN	D4373_GASGEN	104	106.5	B1D992
Dalapon	75-99-0	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Delta-BHC	319-86-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Dicamba	1918-00-9	GENORG	µg/kg	1	0	0	70	70			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dichloroprop	120-36-5	GENORG	µg/kg	1	0	0	170	170			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Dieldrin	60-57-1	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Dinoseb(2-secButyl-4,6-dinitrophenol)	88-85-7	GENORG	µg/kg	1	0	0	17	17			8151_HERBICIDE_GC	8151_HERBICIDE_GC			
Endosulfan I	959-98-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Endosulfan II	33213-65-9	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Endosulfan sulfate	1031-07-8	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Endrin	72-20-8	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Endrin aldehyde	7421-93-4	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			

Table A-15. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (6 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-A-8 - C4545															
Endrin ketone	53494-70-5	GENORG	µg/kg	1	0	0	3.5	3.5			8081_PEST_GC	8081_PEST_GC			
Gamma-BHC (Lindane)	58-89-9	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Gamma-Chlordane	5103-74-2	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Heptachlor	76-44-8	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Heptachlor epoxide	1024-57-3	GENORG	µg/kg	1	0	0	1.7	1.7			8081_PEST_GC	8081_PEST_GC			
Methoxychlor	72-43-5	GENORG	µg/kg	1	0	0	17	17			8081_PEST_GC	8081_PEST_GC			
Oil and grease	OIL/GREASE	GENORG	µg/kg	10	0	0	82600	720000			9071_OILGREASE	9071_OILGREASE			
Total Inorganic Carbon	TINC	GENORG	µg/kg	10	5	50	45600	732000	793000	2910000	9060_TOC	415.1_TOC	104	106.5	B1D992
Total organic carbon	TOC	GENORG	µg/kg	10	7	70	54000	115000	43700	1020000	415.1_TOC	9060_TOC	22.5	25	B1D9Y5
Total petroleum hydrocarbons diesel range	TPHDIESEL	GENORG	µg/kg	10	0	0	520	4000			WTPH_DIESEL	WTPH_DIESEL			
Total petroleum hydrocarbons kerosene range	TPHKEROSENE	GENORG	µg/kg	10	0	0	500	4000			WTPH_DIESEL	WTPH_DIESEL			
Toxaphene	8001-35-2	GENORG	µg/kg	1	0	0	170	170			8081_PEST_GC	8081_PEST_GC			
Antimony	7440-36-0	METAL	µg/kg	3	3	100			1700	1900	6010_METALS_ICP_TR	6010_METALS_ICP_TR	19	21.5	B1D7C8
Arsenic	7440-38-2	METAL	µg/kg	10	10	100			650	2450	200.8_METALS_ICPMS	200.8_METALS_ICPMS	234	236.5	B1D994
Barium	7440-39-3	METAL	µg/kg	10	10	100			25500	88600	200.8_METALS_ICPMS	6010_METALS_ICP_TR	27.5	30	B1D7C8
Bismuth	7440-69-9	METAL	µg/kg	10	3	30	1080	1100	94300	102000	6010_METALS_ICP_TR	6010_METALS_ICP_TR	19	21.5	B1D9Y4
Cadmium	7440-43-9	METAL	µg/kg	10	5	50	104	140	118	240	200.8_METALS_ICPMS	200.8_METALS_ICPMS	104	106.5	B1D992
Chromium	7440-47-3	METAL	µg/kg	10	10	100			3300	41800	6010_METALS_ICP_TR	200.8_METALS_ICPMS	178	180.5	B1D993
Copper	7440-50-8	METAL	µg/kg	10	10	100			5010	14700	200.8_METALS_ICPMS	6010_METALS_ICP_TR	27.5	30	B1D7C8
Hexavalent Chromium	18540-29-9	METAL	µg/kg	10	2	20	200	250	270	278	7196_CR6	7196_CR6	27.5	30	B1D7C7
Lead	7439-92-1	METAL	µg/kg	10	10	100			1390	5340	200.8_METALS_ICPMS	200.8_METALS_ICPMS	27.5	30	B1D7C7
Mercury	7439-97-6	METAL	µg/kg	10	2	20	7	106	119	300	200.8_METALS_ICPMS	7471_HG_CVAA	19	21.5	B1D9Y4
Nickel	7440-02-0	METAL	µg/kg	10	10	100			3890	30600	200.8_METALS_ICPMS	200.8_METALS_ICPMS	49	51.5	B1D7D0
Phosphorus	7723-14-0	METAL	µg/kg	10	10	100			451000	1430000	6010_METALS_ICP	6010_METALS_ICP_TR	19	21.5	B1D9Y4
Selenium	7782-49-2	METAL	µg/kg	10	5	50	408	420	583	1800	200.8_METALS_ICPMS	6010_METALS_ICP_TR	19	21.5	B1D9Y4
Silver	7440-22-4	METAL	µg/kg	10	1	10	102	270	135	135	200.8_METALS_ICPMS	200.8_METALS_ICPMS	49	51.5	B1D7C9
Thallium	7440-28-0	METAL	µg/kg	3	3	100			840	2500	6010_METALS_ICP_TR	6010_METALS_ICP_TR	19	21.5	B1D9Y4
Uranium	7440-61-1	METAL	µg/kg	10	10	100			180	2160	200.8_METALS_ICPMS	UTOT_KPA	19	21.5	B1D9Y4
Bulk density - dry	BULKDENSITY-DRY	PHYSICAL	kg/m3	6	6	100			1712	2305	D2937_DENSITY	D2937_DENSITY	262	264.5	B1D995
Bulk density - wet	BULKDENSITY-WET	PHYSICAL	kg/m3	6	6	100			1749	2470	D2937_DENSITY	D2937_DENSITY	262	264.5	B1D995

Table A-15. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (6 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-A-8 - C4545															
Percent moisture (dry sample)	%MOISTUR E-D	PHYSICAL	%	6	6	100			2.4	9.4	D2216_%MOIS	D2216_%MOIS	262	264.5	B1D995
Percent moisture (wet sample)	%MOISTUR E	PHYSICAL	%	6	6	100			2.3	8.6	D2216_%MOIS	D2216_%MOIS	262	264.5	B1D995
Percent passing 1.5 inch sieve	PAS1.5IN	PHYSICAL	%	6	6	100			89.8	100	D422_PARTCLSIZE	D422_PARTCLSIZE	27.5	30	B1D7C7
Percent passing 3 inch sieve	PAS3IN	PHYSICAL	%	6	6	100			100	100	D422_PARTCLSIZE	D422_PARTCLSIZE	27.5	30	B1D7C7
Percent passing 3/4 inch sieve	PAS3/4IN	PHYSICAL	%	6	6	100			85.9	100	D422_PARTCLSIZE	D422_PARTCLSIZE	27.5	30	B1D7C7
Percent passing 3/8 inch sieve	PAS3/8IN	PHYSICAL	%	6	6	100			80.8	100	D422_PARTCLSIZE	D422_PARTCLSIZE	104	106.5	B1D992
Percent passing No.10 sieve	PAS#10	PHYSICAL	%	6	6	100			47.7	99.3	D422_PARTCLSIZE	D422_PARTCLSIZE	234	236.5	B1D994
Percent passing No.100 sieve	PAS#100	PHYSICAL	%	6	6	100			6.6	36.1	D422_PARTCLSIZE	D422_PARTCLSIZE	234	236.5	B1D994
Percent passing No.140 sieve	PAS#140	PHYSICAL	%	6	6	100			5.2	29.2	D422_PARTCLSIZE	D422_PARTCLSIZE	234	236.5	B1D994
Percent passing No.20 sieve	PAS#20	PHYSICAL	%	6	6	100			28.9	97.1	D422_PARTCLSIZE	D422_PARTCLSIZE	234	236.5	B1D994
Percent passing No.200 sieve	PAS#200	PHYSICAL	%	6	6	100			4.1	23.7	D422_PARTCLSIZE	D422_PARTCLSIZE	234	236.5	B1D994
Percent passing No.4 sieve	PAS#4	PHYSICAL	%	6	6	100			70.3	99.8	D422_PARTCLSIZE	D422_PARTCLSIZE	104	106.5	B1D992
Percent passing No.40 sieve	PAS#40	PHYSICAL	%	6	6	100			18.5	79.2	D422_PARTCLSIZE	D422_PARTCLSIZE	234	236.5	B1D994
Percent passing No.60 sieve	PAS#60	PHYSICAL	%	6	6	100			10.2	53.5	D422_PARTCLSIZE	D422_PARTCLSIZE	234	236.5	B1D994
Percent Solids	%SOLIDS	PHYSICAL	%	1	1	100			94.2	94.2	%SOLIDS	%SOLIDS	27.5	30	B1D7C7
pH Measurement	PH	PHYSICAL	pH	10	10	100			8	9.18	9045_PH	150.1_PH	262	264.5	B1D995
Specific Gravity	SPECGVTY	PHYSICAL	unitless	6	6	100			2.7168	2.8549	D854_PARTLDEN	D854_PARTLDEN	27.5	30	B1D7C7
1,2,4-Trichlorobenzene	120-82-1	SVOA	µg/kg	10	0	0	35	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,2,4-Trimethylbenzene	95-63-6	SVOA	µg/kg	7	0	0	120	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,2-Dichlorobenzene	95-50-1	SVOA	µg/kg	10	0	0	39	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,3-Dichlorobenzene	541-73-1	SVOA	µg/kg	10	0	0	33	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,4-Dichlorobenzene	106-46-7	SVOA	µg/kg	10	0	0	36	190			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4,5-Trichlorophenol	95-95-4	SVOA	µg/kg	10	0	0	30	250			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4,6-Trichlorophenol	88-06-2	SVOA	µg/kg	10	0	0	8.9	150			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dichlorophenol	120-83-2	SVOA	µg/kg	10	0	0	21	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dimethylphenol	105-67-9	SVOA	µg/kg	10	0	0	91	370			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dinitrophenol	51-28-5	SVOA	µg/kg	10	0	0	99	340			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,4-Dinitrotoluene	121-14-2	SVOA	µg/kg	10	0	0	36	130			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,6-Dichlorophenol	87-65-0	SVOA	µg/kg	1	0	0	20	20			8270_SVOA_GCMS	8270_SVOA_GCMS			
2,6-Dinitrotoluene	606-20-2	SVOA	µg/kg	10	0	0	19	190			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Butoxyethanol	111-76-2	SVOA	µg/kg	7	0	0	84	220			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Chloronaphthalene	91-58-7	SVOA	µg/kg	10	0	0	34	200			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Chlorophenol	95-57-8	SVOA	µg/kg	10	0	0	18	220			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Ethyl-1-hexanol	104-76-7	SVOA	µg/kg	1	0	0	760	760			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Methylnaphthalene	91-57-6	SVOA	µg/kg	10	0	0	37	170			8270_SVOA_GCMS	8270_SVOA_GCMS			

Table A-15. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (6 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-A-8 - C4545															
2-Methylphenol (cresol, o-)	95-48-7	SVOA	µg/kg	10	0	0	34	220			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Naphthylamine	91-59-8	SVOA	µg/kg	10	0	0	44	180			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Nitroaniline	88-74-4	SVOA	µg/kg	10	0	0	8.7	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
2-Nitrophenol	88-75-5	SVOA	µg/kg	10	0	0	38	230			8270_SVOA_GCMS	8270_SVOA_GCMS			
3,3'-Dichlorobenzidine	91-94-1	SVOA	µg/kg	10	0	0	120	210			8270_SVOA_GCMS	8270_SVOA_GCMS			
3+4 Methylphenol (cresol, m+p)	65794-96-9	SVOA	µg/kg	10	0	0	68	270			8270_SVOA_GCMS	8270_SVOA_GCMS			
3-Nitroaniline	99-09-2	SVOA	µg/kg	10	0	0	59	140			8270_SVOA_GCMS	8270_SVOA_GCMS			
4,6-Dinitro-2-methylphenol	534-52-1	SVOA	µg/kg	10	0	0	62	320			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Bromophenylphenyl ether	101-55-3	SVOA	µg/kg	10	0	0	36	210			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chloro-3-methylphenol	59-50-7	SVOA	µg/kg	10	0	0	19	200			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chloroaniline	106-47-8	SVOA	µg/kg	10	0	0	130	200			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Chlorophenylphenyl ether	7005-72-3	SVOA	µg/kg	10	0	0	7.3	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Nitroaniline	100-01-6	SVOA	µg/kg	10	0	0	67	250			8270_SVOA_GCMS	8270_SVOA_GCMS			
4-Nitrophenol	100-02-7	SVOA	µg/kg	10	0	0	35	370			8270_SVOA_GCMS	8270_SVOA_GCMS			
Acenaphthene	83-32-9	SVOA	µg/kg	10	0	0	36	200			8270_SVOA_GCMS	8270_SVOA_GCMS			
Acenaphthylene	208-96-8	SVOA	µg/kg	10	0	0	27	150			8270_SVOA_GCMS	8270_SVOA_GCMS			
Anthracene	120-12-7	SVOA	µg/kg	10	0	0	18	180			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(a)anthracene	56-55-3	SVOA	µg/kg	10	0	0	36	190			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(a)pyrene	50-32-8	SVOA	µg/kg	10	0	0	32	140			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(b)fluoranthene	205-99-2	SVOA	µg/kg	10	0	0	37	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(ghi)perylene	191-24-2	SVOA	µg/kg	10	0	0	40	290			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzo(k)fluoranthene	207-08-9	SVOA	µg/kg	10	0	0	55	250			8270_SVOA_GCMS	8270_SVOA_GCMS			
Benzyl alcohol	100-51-6	SVOA	µg/kg	9	0	0	54	260			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-chloro-1-methylethyl)ether	108-60-1	SVOA	µg/kg	10	0	0	38	250			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-Chloroethoxy)methane	111-91-1	SVOA	µg/kg	10	0	0	35	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-chloroethyl) ether	111-44-4	SVOA	µg/kg	10	0	0	18	200			8270_SVOA_GCMS	8270_SVOA_GCMS			
Bis(2-ethylhexyl) phthalate	117-81-7	SVOA	µg/kg	10	0	0	35	270			8270_SVOA_GCMS	8270_SVOA_GCMS			
Butylbenzylphthalate	85-68-7	SVOA	µg/kg	10	0	0	13	220			8270_SVOA_GCMS	8270_SVOA_GCMS			
Carbazole	86-74-8	SVOA	µg/kg	10	0	0	20	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
Chrysene	218-01-9	SVOA	µg/kg	10	0	0	40	210			8270_SVOA_GCMS	8270_SVOA_GCMS			
Cyclohexanone	108-94-1	SVOA	µg/kg	7	0	0	89	200			8270_SVOA_GCMS	8270_SVOA_GCMS			
Decane	124-18-5	SVOA	µg/kg	7	1	14	180	340	500	500	8270_SVOA_GCMS	8270_SVOA_GCMS	104	106.5	B1D992
Dibenz[a,h]anthracene	53-70-3	SVOA	µg/kg	10	0	0	35	250			8270_SVOA_GCMS	8270_SVOA_GCMS			
Dibenzofuran	132-64-9	SVOA	µg/kg	10	0	0	19	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
Diethylphthalate	84-66-2	SVOA	µg/kg	10	0	0	36	190			8270_SVOA_GCMS	8270_SVOA_GCMS			
Dimethyl phthalate	131-11-3	SVOA	µg/kg	10	0	0	20	140			8270_SVOA_GCMS	8270_SVOA_GCMS			
Di-n-butylphthalate	84-74-2	SVOA	µg/kg	10	4	40	28	730	180	690	8270_SVOA_GCMS	8270_SVOA_GCMS	178	180.5	B1D993
Di-n-octylphthalate	117-84-0	SVOA	µg/kg	10	0	0	38	310			8270_SVOA_GCMS	8270_SVOA_GCMS			
Fluoranthene	206-44-0	SVOA	µg/kg	10	0	0	23	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
Fluorene	86-73-7	SVOA	µg/kg	10	0	0	6.6	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorobenzene	118-74-1	SVOA	µg/kg	10	0	0	17	160			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorobutadiene	87-68-3	SVOA	µg/kg	10	0	0	38	190			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachlorocyclopentadiene	77-47-4	SVOA	µg/kg	10	0	0	37	240			8270_SVOA_GCMS	8270_SVOA_GCMS			
Hexachloroethane	67-72-1	SVOA	µg/kg	10	0	0	37	140			8270_SVOA_GCMS	8270_SVOA_GCMS			
Indeno(1,2,3-cd)pyrene	193-39-5	SVOA	µg/kg	10	0	0	17	190			8270_SVOA_GCMS	8270_SVOA_GCMS			

Table A-15. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (6 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-A-8 - C4545															
Isophorone	78-59-1	SVOA	µg/kg	10	0	0	38	190			8270_SVOA_GCMS	8270_SVOA_GCMS			
Naphthalene	91-20-3	SVOA	µg/kg	10	0	0	35	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
Nitrobenzene	98-95-3	SVOA	µg/kg	10	0	0	18	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
n-Nitrosodi-n-dipropylamine	621-64-7	SVOA	µg/kg	10	0	0	39	260			8270_SVOA_GCMS	8270_SVOA_GCMS			
n-Nitrosodiphenylamine	86-30-6	SVOA	µg/kg	10	0	0	21	170			8270_SVOA_GCMS	8270_SVOA_GCMS			
nonadecane	629-92-5	SVOA	µg/kg	1	1	100			1600	1600	8270_SVOA_GCMS	8270_SVOA_GCMS	104	106.5	B1D992
Pentachlorophenol	87-86-5	SVOA	µg/kg	10	0	0	74	290			8270_SVOA_GCMS	8270_SVOA_GCMS			
Phenanthrene	85-01-8	SVOA	µg/kg	10	0	0	6.7	180			8270_SVOA_GCMS	8270_SVOA_GCMS			
Phenol	108-95-2	SVOA	µg/kg	10	0	0	24	240			8270_SVOA_GCMS	8270_SVOA_GCMS			
Pyrene	129-00-0	SVOA	µg/kg	10	0	0	35	210			8270_SVOA_GCMS	8270_SVOA_GCMS			
Pyridine	110-86-1	SVOA	µg/kg	10	0	0	48	140			8270_SVOA_GCMS	8270_SVOA_GCMS			
Tributyl phosphate	126-73-8	SVOA	µg/kg	10	0	0	72	590			8270_SVOA_GCMS	8270_SVOA_GCMS			
1,1,1-Trichloroethane	71-55-6	VOA	µg/kg	10	0	0	0.55	2.8			8260_VOA_GCMS	8260_VOA_GCMS			
1,1,2,2-Tetrachloroethane	79-34-5	VOA	µg/kg	10	0	0	0.12	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
1,1,2-Trichloroethane	79-00-5	VOA	µg/kg	10	0	0	0.75	3.8			8260_VOA_GCMS	8260_VOA_GCMS			
1,1-Dichloroethane	75-34-3	VOA	µg/kg	10	0	0	0.54	2.7			8260_VOA_GCMS	8260_VOA_GCMS			
1,1-Dichloroethene	75-35-4	VOA	µg/kg	10	0	0	0.67	3.4			8260_VOA_GCMS	8260_VOA_GCMS			
1,2,4-Trimethylbenzene	95-63-6	VOA	µg/kg	3	0	0	0.57	2.8			8260_VOA_GCMS	8260_VOA_GCMS			
1,2-Dichloroethane	107-06-2	VOA	µg/kg	10	0	0	0.42	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
1,2-Dichloroethene (Total)	540-59-0	VOA	µg/kg	10	0	0	0.22	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
1,2-Dichloropropane	78-87-5	VOA	µg/kg	10	0	0	0.46	2.3			8260_VOA_GCMS	8260_VOA_GCMS			
1-Butanol	71-36-3	VOA	µg/kg	10	0	0	8.7	44			8260_VOA_GCMS	8260_VOA_GCMS			
2-Butanone	78-93-3	VOA	µg/kg	10	0	0	0.76	3.8			8260_VOA_GCMS	8260_VOA_GCMS			
2-Hexanone	591-78-6	VOA	µg/kg	10	0	0	0.68	3.4			8260_VOA_GCMS	8260_VOA_GCMS			
2-Pentanone	107-87-9	VOA	µg/kg	7	0	0	1.7	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
2-Pentanone, 4-Methyl	108-10-1	VOA	µg/kg	10	0	0	0.67	3.4			8260_VOA_GCMS	8260_VOA_GCMS			
Acetone	67-64-1	VOA	µg/kg	10	3	30	1.7	2.1	3.3	19	8260_VOA_GCMS	8260_VOA_GCMS	19	21.5	B1D9Y4
Acetonitrile	75-05-8	VOA	µg/kg	10	1	10	3.4	26	12	12	8260_VOA_GCMS	8260_VOA_GCMS	25	27.5	B1DB24
Benzene	71-43-2	VOA	µg/kg	10	0	0	0.13	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
Bromodichloromethane	75-27-4	VOA	µg/kg	10	0	0	0.39	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
Bromoform	75-25-2	VOA	µg/kg	10	0	0	0.62	3.1			8260_VOA_GCMS	8260_VOA_GCMS			
Bromomethane	74-83-9	VOA	µg/kg	10	0	0	0.64	3.2			8260_VOA_GCMS	8260_VOA_GCMS			
Carbon disulfide	75-15-0	VOA	µg/kg	10	0	0	0.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
Carbon tetrachloride	56-23-5	VOA	µg/kg	10	0	0	0.45	2.2			8260_VOA_GCMS	8260_VOA_GCMS			
Chlorobenzene	108-90-7	VOA	µg/kg	10	0	0	0.54	2.7			8260_VOA_GCMS	8260_VOA_GCMS			
Chloroethane	75-00-3	VOA	µg/kg	10	0	0	0.52	2.6			8260_VOA_GCMS	8260_VOA_GCMS			
Chloroform	67-66-3	VOA	µg/kg	10	0	0	0.52	2.6			8260_VOA_GCMS	8260_VOA_GCMS			
Chloromethane	74-87-3	VOA	µg/kg	10	0	0	0.93	4.6			8260_VOA_GCMS	8260_VOA_GCMS			
cis-1,2-Dichloroethylene	156-59-2	VOA	µg/kg	8	0	0	0.48	2.4			8260_VOA_GCMS	8260_VOA_GCMS			
cis-1,3-Dichloropropene	10061-01-5	VOA	µg/kg	10	0	0	0.27	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
Cyclohexane	110-82-7	VOA	µg/kg	10	0	0	0.3	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
Cyclohexanone	108-94-1	VOA	µg/kg	3	0	0	2.7	14			8260_VOA_GCMS	8260_VOA_GCMS			
Dibromochloromethane	124-48-1	VOA	µg/kg	10	0	0	0.26	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
Ethyl acetate	141-78-6	VOA	µg/kg	2	2	100			13	23	8260_VOA_GCMS	8260_VOA_GCMS	25	27.5	B1DB24
Ethylbenzene	100-41-4	VOA	µg/kg	10	0	0	0.44	2.2			8260_VOA_GCMS	8260_VOA_GCMS			
Hexane	110-54-3	VOA	µg/kg	10	0	0	0.84	4.2			8260_VOA_GCMS	8260_VOA_GCMS			
Methylene chloride	75-09-2	VOA	µg/kg	10	0	0	1.7	13			8260_VOA_GCMS	8260_VOA_GCMS			
n-Butylbenzene	104-51-8	VOA	µg/kg	10	0	0	0.6	3			8260_VOA_GCMS	8260_VOA_GCMS			

Table A-15. Summary Table for Non-RAD Constituents in Deep Zone Soil Samples (6 Pages)

Constituent	CAS Number	Constituent Class	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Analytical Method for Minimum Detect (or nondetect)	Analytical Method for Maximum Detect (or nondetect)	Start Depth of Maximum Detect(ft)	End Depth of Maximum Detect(ft)	Sample Number of Maximum Detect
216-A-8 - C4545															
Styrene	100-42-5	VOA	µg/kg	10	0	0	0.47	2.4			8260_VOA_GCMS	8260_VOA_GCMS			
Tetrachloroethene	127-18-4	VOA	µg/kg	10	0	0	0.55	2.8			8260_VOA_GCMS	8260_VOA_GCMS			
Tetrahydrofuran	109-99-9	VOA	µg/kg	10	0	0	1.2	6.2			8260_VOA_GCMS	8260_VOA_GCMS			
Toluene	108-88-3	VOA	µg/kg	10	0	0	0.33	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
trans-1,2-Dichloroethylene	156-60-5	VOA	µg/kg	10	0	0	0.69	3.4			8260_VOA_GCMS	8260_VOA_GCMS			
trans-1,3-Dichloropropene	10061-02-6	VOA	µg/kg	10	0	0	0.4	2.1			8260_VOA_GCMS	8260_VOA_GCMS			
Trichloroethene	79-01-6	VOA	µg/kg	10	0	0	0.44	2.2			8260_VOA_GCMS	8260_VOA_GCMS			
Trichloromonofluoromethane	75-69-4	VOA	µg/kg	10	0	0	0.64	3.2			8260_VOA_GCMS	8260_VOA_GCMS			
Vinyl chloride	75-01-4	VOA	µg/kg	10	0	0	0.71	3.6			8260_VOA_GCMS	8260_VOA_GCMS			
Xylenes (total)	1330-20-7	VOA	µg/kg	10	0	0	1.3	6.3			8260_VOA_GCMS	8260_VOA_GCMS			
Ammonia	7664-41-7	WETCHEM	µg/kg	3	0	0	70.5	74.2			350.1_AMMONIA	350.1_AMMONIA			
Ammonium ion	14798-03-9	WETCHEM	µg/kg	7	2	29	252	258	316	558	300.7_IC	300.7_IC	178	180.5	B1D993
Chloride	16887-00-6	WETCHEM	µg/kg	10	4	40	2550	2600	760	5280	300.0_ANIONS_IC	300.0_ANIONS_IC	27.5	30	B1D7C7
Fluoride	16984-48-8	WETCHEM	µg/kg	10	0	0	51	1150			300.0_ANIONS_IC	300.0_ANIONS_IC			
Nitrate	14797-55-8	WETCHEM	µg/kg	10	4	40	2820	2880	1550	31400	300.0_ANIONS_IC	300.0_ANIONS_IC	19	21.5	B1D9Y4
Nitrite	14797-65-0	WETCHEM	µg/kg	10	1	10	200	3120	312	312	300.0_ANIONS_IC	300.0_ANIONS_IC	22.5	25	B1D9Y5
Nitrogen in Nitrite and Nitrate	NO2+NO3-N	WETCHEM	µg/kg	10	5	50	27	4000	220	53300	353.2_NO3/NO2	353.1_NO3/NO2	19	21.5	B1D9Y4
Phosphate	14265-44-2	WETCHEM	µg/kg	10	3	30	8130	8280	1500	2600	300.0_ANIONS_IC	300.0_ANIONS_IC	19	21.5	B1D9Y4
Sulfate	14808-79-8	WETCHEM	µg/kg	10	5	50	4900	5000	3400	107000	300.0_ANIONS_IC	300.0_ANIONS_IC	27.5	30	B1D7C7

APPENDIX B
DATA EVALUATION AND DATA SUMMARY TABLES

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The tables in this appendix list all the chemical and radiochemical results obtained for boreholes C3426 and C3427 at the 216-Z-9 Trench, and borehole C4545 at the A-8 Crib, for this RI report.

These results apply mainly to samples from the vadose zone. The tables omit all of the groundwater samples retrieved from the boreholes, most of the sediment samples in the groundwater region, and most of the trip blanks associated with samples in the groundwater region.

The "Depth" columns in these tables indicate the depth in feet below ground surface (bgs) at which the sample was taken. For borehole C3427, the depths listed are downhole depths. The "Depth" columns give the upper and lower bounds of the sample location. If depth is noted for a quality control (QC) blank sample, it indicates the depth at which borehole samples were being taken at the time the blank was at the sampling site.

The "Sample" column gives the sample number used in the Hanford Environmental Information System (HEIS).

The "Media" column indicates the type of sample. The indicators are "S" for soil, "V" for vapor, and "W" for water.

The "QC" columns designate the field QC samples. In this column, "E" indicates an equipment blank, i.e., a water sample used to rinse the sampling equipment as a check for contamination; "T" indicates a trip blank, a water sample used to check for contamination by volatile organic compounds during sampling and transportation operations; and "D" indicates a field duplicate sample, obtained to measure sampling and laboratory error.

Analyte names are given in the top row of each table. Below each analyte name are shown the U.S. Environmental Protection Agency (EPA) or American Society for Testing and Materials (ASTM) method number(s) or brief descriptive name(s) of the analytical method(s) used for the analyte. The methods with numbers having three places to the left of the decimal point are described in *Methods of Chemical Analysis of Water and Wastes* (EPA/600/4-79/020). The reference for the 4-digit methods is *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846). The method names employ the following abbreviations:

Term	Definition
3M	Separation using a 3M brand separations disk
AEA	alpha energy analysis
Calculation	The result is calculated stoichiometrically from the column(s) to the left.
ChemOx	Chemical oxidation
CombOx	Oxidation by combustion
Dist	Separation by distillation
Field	Field measurement
GEA	gamma energy analysis
GPC	gas proportional counting
IR	Infrared spectrometry
IX	ion exchange
KPA	kinetic phosphorimetric analysis
LEPS	low-energy photon spectroscopy
LSC	liquid scintillation counting
PAA	Infrared photoacoustic analyzer
Plate	Alpha mount by electroplating
Prec	Chemical precipitation
SX/GC-FID	Solvent extraction/gas chromatography method for total petroleum hydrocarbons using a flame ionization detector
Sep	Chemical separation

The letters in the columns labeled "Q" are QC flags affixed by the laboratories. The flags have the following meanings.

- B: For organic analyses, indicates that the blank was contaminated with the analyte. For inorganic analysis, indicates that the analyte was detected in the sample at a level below the target quantitation limit.
- C: For organic analyses, indicates that analyte result was confirmed by gas chromatography scan. For inorganic analysis, indicates that the analyte was detected in the associated method blank and in the sample at a concentration less than or equal to five times the level found in the blank.
- D: Result was determined on a dilution of the sample.
- E: For organic analysis, indicates that the result exceeded the calibration range. For inorganic analysis, indicates that the result is an estimate, due to interference
- J: Result is an estimate.
- N: Tentatively identified compound.
- U: Analyte was undetected, with the indicated reporting limit
- R: Result is rejected for decision-making.
- X: Low recovery for the laboratory control sample.

Where more than one letter is used for a result, the meanings of the individual letters are combined.

Where validation qualifier flags were assigned by the data validator, they are entered in a separate column labeled "V." Where validation flags do not occur, this column may be omitted. Validation flags have the following meanings.

- J: Result is an estimate
- U: Analyte was undetected, with the indicated reporting limit
- R: Result is rejected for decision-making

For radionuclide analysis, a column labeled "MDA" appears. This column gives the "minimum detectable activity" as reported by the laboratory.

The row across the bottom of each table gives the target quantitation limits (TQLs) taken from Table 2-1 of the borehole sampling and analysis plan (SAP; DOE/RL-2001-01, Appendix E). These are the detection limits that should be achieved in the analyses. Entries of "N/A" in this row indicate either that the analyte is not a CPOC, or there is no limit specified in Table 2-1 of the SAP.

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Table B-1. Metal Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Beryllium (7440-41-7)				Bismuth (7440-69-9)				Cadmium (7440-43-9)				Calcium (7440-70-2)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003	270	µg/kg	U		10400	µg/kg	U		3500	µg/kg						
299-W15-46	47.5	50	B17N46-B		10/20/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003	293	µg/kg			10400	µg/kg	U		1790	µg/kg						
299-W15-46	63.5	66	B17TM6-B		10/29/2003																
299-W15-46	90	92.5	B17N52		3/23/2004	390	µg/kg			260	µg/kg	U		40200	µg/kg			7940000	µg/kg	C	
299-W15-46	90	92.5	B17N52		3/23/2004																
299-W15-46	109.5	112	B18XR8		4/8/2004	1430	µg/kg	U		9440	µg/kg	U		11700	µg/kg						
299-W15-46	115	117.5	B191Y7		4/19/2004	340	µg/kg			240	µg/kg	U		5100	µg/kg			2960000	µg/kg		
299-W15-46	115	117.5	B191Y7		4/19/2004																
299-W15-46	117	119.5	B17N60		4/21/2004	460	µg/kg			5000	µg/kg	U		70	µg/kg	U		32900000	µg/kg		
299-W15-46	119.5	122	B17N63		5/3/2004	395	µg/kg			5000	µg/kg	UE		75	µg/kg	U		29000000	µg/kg		
299-W15-46	119.5	122	B17N65		5/3/2004	640	µg/kg			290	µg/kg	U		5300	µg/kg			30600000	µg/kg		
299-W15-46	174	176.5	B17N67		8/23/2004	280	µg/kg			2200	µg/kg	U		1270	µg/kg			2570000	µg/kg		
299-W15-46	174	176.5	B17N69		8/23/2004																
299-W15-46	184	186.5	B17N70		8/25/2004	284	µg/kg			2200	µg/kg	U		1430	µg/kg			2310000	µg/kg		
299-W15-46	184	186.5	B17N72		8/25/2004																
299-W15-46	224	226.5	B17N73		9/9/2004	296	µg/kg			5000	µg/kg	U		75	µg/kg	U		3280000	µg/kg		
299-W15-46	224	226.5	B17NL3		9/9/2004																
299-W15-46	226.5	229	B17NL5		9/9/2004	310	µg/kg			2200	µg/kg	U		75	µg/kg	U		3210000	µg/kg		
299-W15-46	226.5	229	B17NL7		9/9/2004																
			B17MM8	EB	9/23/2003	1	µg/L	U		100	µg/L	U		1.5	µg/L	U		25	µg/L	U	
			B17MN0	EB	9/23/2003																
					TQL (µg/kg)		N/A				N/A				500					N/A	

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Table B-1. Metal Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Chromium (7440-47-3)				Chromium (7440-47-3)				Chromium (7440-47-3)				Cobalt (7440-48-4)			
						6010				TCLP/200.8				TCLP/6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003	16000	µg/kg														
299-W15-46	47.5	50	B17N46-B		10/20/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003	22500	µg/kg														
299-W15-46	63.5	66	B17TM6-B		10/29/2003																
299-W15-46	90	92.5	B17N52		3/23/2004	12200	µg/kg	C										6100	µg/kg		
299-W15-46	90	92.5	B17N52		3/23/2004																
299-W15-46	109.5	112	B18XR8		4/8/2004	15500	µg/kg											5800	µg/kg		
299-W15-46	115	117.5	B191Y7		4/19/2004	22400	µg/kg														
299-W15-46	115	117.5	B191Y7		4/19/2004																
299-W15-46	117	119.5	B17N60		4/21/2004	48700	µg/kg														
299-W15-46	119.5	122	B17N63		5/3/2004	162000	µg/kg		8.66	µg/L	J										
299-W15-46	119.5	122	B17N65		5/3/2004	128000	µg/kg					8.8	µg/L	U							
299-W15-46	174	176.5	B17N67		8/23/2004	38000	µg/kg														
299-W15-46	174	176.5	B17N69		8/23/2004																
299-W15-46	184	186.5	B17N70		8/25/2004	54400	µg/kg														
299-W15-46	184	186.5	B17N72		8/25/2004																
299-W15-46	224	226.5	B17N73		9/9/2004	35700	µg/kg														
299-W15-46	224	226.5	B17NL3		9/9/2004																
299-W15-46	226.5	229	B17NL5		9/9/2004	21100	µg/kg														
299-W15-46	226.5	229	B17NL7		9/9/2004																
			B17MM8	EB	9/23/2003	4	µg/L	U											1.8	µg/L	U
			B17MN0	EB	9/23/2003																
					TQL (µg/kg)	1000			1000				1000						N/A		

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Table B-1. Metal Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Copper (7440-50-8)				Hexavalent Chromium (18540-29-9)				Iron (7439-89-6)				Lead (7439-92-1)			
						6010				7196				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003	16600	µg/kg											8210	µg/kg		
299-W15-46	47.5	50	B17N46-B		10/20/2003					400	µg/kg	U									
299-W15-46	63.5	66	B17TM6		10/29/2003	9950	µg/kg											6580	µg/kg		
299-W15-46	63.5	66	B17TM6-B		10/29/2003					750	µg/kg										
299-W15-46	90	92.5	B17N52		3/23/2004	11800	µg/kg			210	µg/kg	U		15300000	µg/kg	C		5200	µg/kg		
299-W15-46	90	92.5	B17N52		3/23/2004																
299-W15-46	109.5	112	B18XR8		4/8/2004	13200	µg/kg											5760	µg/kg		
299-W15-46	115	117.5	B191Y7		4/19/2004	13300	µg/kg							14900000	µg/kg			620000	µg/kg		
299-W15-46	115	117.5	B191Y7		4/19/2004																
299-W15-46	117	119.5	B17N60		4/21/2004	7000	µg/kg							49400000	µg/kg			11800	µg/kg		
299-W15-46	119.5	122	B17N63		5/3/2004	15200	µg/kg							37000000	µg/kg			11800	µg/kg		
299-W15-46	119.5	122	B17N65		5/3/2004	26300	µg/kg			230	µg/kg	U		34100000	µg/kg			3800	µg/kg		
299-W15-46	174	176.5	B17N67		8/23/2004	18400	µg/kg							12600000	µg/kg			63	µg/kg	U	
299-W15-46	174	176.5	B17N69		8/23/2004					210	µg/kg	U									
299-W15-46	184	186.5	B17N70		8/25/2004	13300	µg/kg							13900000	µg/kg			63	µg/kg	U	
299-W15-46	184	186.5	B17N72		8/25/2004					210	µg/kg	U									
299-W15-46	224	226.5	B17N73		9/9/2004	14900	µg/kg							16500000	µg/kg			63	µg/kg	U	
299-W15-46	224	226.5	B17NL3		9/9/2004					220	µg/kg	U									
299-W15-46	226.5	229	B17NL5		9/9/2004	18000	µg/kg							17000000	µg/kg			63	µg/kg	U	
299-W15-46	226.5	229	B17NL7		9/9/2004					220	µg/kg	U									
			B17MM8	EB	9/23/2003	1.3	µg/L	U						31	µg/L	U		13	µg/L	U	
			B17MN0	EB	9/23/2003					2	µg/L	U									
					TQL (µg/kg)		2500				500			N/A					10000		

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Table B-1. Metal Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lithium (7439-93-2)				Magnesium (7439-95-4)				Manganese (7439-96-5)				Mercury (7439-97-6)			
						6010				6010				6010				200.8			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003	8260	µg/kg							157000	µg/kg						
299-W15-46	47.5	50	B17N46-B		10/20/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003	10600	µg/kg							190000	µg/kg						
299-W15-46	63.5	66	B17TM6-B		10/29/2003																
299-W15-46	90	92.5	B17N52		3/23/2004	10100	µg/kg	C		4790000	µg/kg	C		353000	µg/kg	C					
299-W15-46	90	92.5	B17N52		3/23/2004									310000	µg/kg						
299-W15-46	109.5	112	B18XR8		4/8/2004	10400	µg/kg							181000	µg/kg						
299-W15-46	115	117.5	B191Y7		4/19/2004	11900	µg/kg			4300000	µg/kg										
299-W15-46	115	117.5	B191Y7		4/19/2004																
299-W15-46	117	119.5	B17N60		4/21/2004	5060	µg/kg			6590000	µg/kg			408000	µg/kg	E		10	µg/kg	U	
299-W15-46	119.5	122	B17N63		5/3/2004	6140	µg/kg			6930000	µg/kg			373000	µg/kg			10	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004	7300	µg/kg			7130000	µg/kg			410000	µg/kg						
299-W15-46	174	176.5	B17N67		8/23/2004	8280	µg/kg			3120000	µg/kg			207000	µg/kg			1020	µg/kg		
299-W15-46	174	176.5	B17N69		8/23/2004																
299-W15-46	184	186.5	B17N70		8/25/2004	9110	µg/kg			3370000	µg/kg			2240000	µg/kg			987	µg/kg	U	
299-W15-46	184	186.5	B17N72		8/25/2004																
299-W15-46	224	226.5	B17N73		9/9/2004	6800	µg/kg			3680000	µg/kg			318000	µg/kg			399	µg/kg		
299-W15-46	224	226.5	B17NL3		9/9/2004																
299-W15-46	226.5	229	B17NL5		9/9/2004	7930	µg/kg			4660000	µg/kg			515000	µg/kg			180	µg/kg		
299-W15-46	226.5	229	B17NL7		9/9/2004																
			B17MM8	EB	9/23/2003	1.9	µg/L	U		37	µg/L	U		1	µg/L	U		0.1	µg/L	U	
			B17MN0	EB	9/23/2003																
					TQL (µg/kg)		N/A				N/A				N/A						200

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Table B-1. Metal Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Mercury (7439-97-6)				Nickel (7440-02-0)				Phosphorus (7723-14-0)				Potassium (7440-09-7)			
						7471				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003	99.2	µg/kg			9110	µg/kg			464000	µg/kg						
299-W15-46	47.5	50	B17N46-B		10/20/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003	642	µg/kg			20200	µg/kg			595000	µg/kg						
299-W15-46	63.5	66	B17TM6-B		10/29/2003																
299-W15-46	90	92.5	B17N52		3/23/2004	20	µg/kg	U		11600	µg/kg			476000	µg/kg			1510000	µg/kg	C	
299-W15-46	90	92.5	B17N52		3/23/2004																
299-W15-46	109.5	112	B18XR8		4/8/2004	90	µg/kg			25400	µg/kg			533000	µg/kg						
299-W15-46	115	117.5	B191Y7		4/19/2004	380	µg/kg	J		22300	µg/kg			620000	µg/kg			1730000	µg/kg		
299-W15-46	115	117.5	B191Y7		4/19/2004																
299-W15-46	117	119.5	B17N60		4/21/2004					8280	µg/kg			1470000	µg/kg			536000	µg/kg		
299-W15-46	119.5	122	B17N63		5/3/2004					72900	µg/kg			973000	µg/kg			833000	µg/kg		
299-W15-46	119.5	122	B17N65		5/3/2004	20	µg/kg	U		71100	µg/kg			1010000	µg/kg			1070000	µg/kg		
299-W15-46	174	176.5	B17N67		8/23/2004					21400	µg/kg			494000	µg/kg			972000	µg/kg		
299-W15-46	174	176.5	B17N69		8/23/2004																
299-W15-46	184	186.5	B17N70		8/25/2004					28500	µg/kg			524000	µg/kg			1210000	µg/kg		
299-W15-46	184	186.5	B17N72		8/25/2004																
299-W15-46	224	226.5	B17N73		9/9/2004					20200	µg/kg			663000	µg/kg			970000	µg/kg		
299-W15-46	224	226.5	B17NL3		9/9/2004																
299-W15-46	226.5	229	B17NL5		9/9/2004					17400	µg/kg			584000	µg/kg			89800	µg/kg		
299-W15-46	226.5	229	B17NL7		9/9/2004																
			B17MM8	EB	9/23/2003					3	µg/L	U		34	µg/L	U		178	µg/L	U	
			B17MN0	EB	9/23/2003																
					TQL (µg/kg)		200				4000				10000				N/A		

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Table B-1. Metal Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Selenium (7782-49-2)				Silver (7440-22-4)				Sodium (7440-23-5)				Strontium (7440-24-6)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003	10500	µg/kg	U		1110	µg/kg	U					11700	µg/kg			
299-W15-46	47.5	50	B17N46-B		10/20/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003	10400	µg/kg	U		1150	µg/kg						13700	µg/kg			
299-W15-46	63.5	66	B17TM6-B		10/29/2003																
299-W15-46	90	92.5	B17N52		3/23/2004	340	µg/kg	U		60	µg/kg	U		648000	µg/kg	C	25300	µg/kg	C		
299-W15-46	90	92.5	B17N52		3/23/2004																
299-W15-46	109.5	112	B18XR8		4/8/2004	9180	µg/kg	U		743	µg/kg	U					15200	µg/kg			
299-W15-46	115	117.5	B191Y7		4/19/2004	320	µg/kg	U		60	µg/kg	U		998000	µg/kg		15100	µg/kg			
299-W15-46	115	117.5	B191Y7		4/19/2004																
299-W15-46	117	119.5	B17N60		4/21/2004	1990	µg/kg			974	µg/kg	E		1770000	µg/kg		78200	µg/kg			
299-W15-46	119.5	122	B17N63		5/3/2004	3760	µg/kg			1710	µg/kg	E		2660000	µg/kg		83200	µg/kg			
299-W15-46	119.5	122	B17N65		5/3/2004	380	µg/kg	U		70	µg/kg	U		2550000	µg/kg		87100	µg/kg			
299-W15-46	174	176.5	B17N67		8/23/2004	1000	µg/kg	U		2880	µg/kg			561000	µg/kg	E	31100	µg/kg			
299-W15-46	174	176.5	B17N69		8/23/2004																
299-W15-46	184	186.5	B17N70		8/25/2004	1000	µg/kg	U		2560	µg/kg			661000	µg/kg	E	21000	µg/kg			
299-W15-46	184	186.5	B17N72		8/25/2004																
299-W15-46	224	226.5	B17N73		9/9/2004	1000	µg/kg	U		958	µg/kg	E		325000	µg/kg	E	23000	µg/kg			
299-W15-46	224	226.5	B17NL3		9/9/2004																
299-W15-46	226.5	229	B17NL5		9/9/2004	1000	µg/kg	U		120	µg/kg	U		145000	µg/kg	E	25900	µg/kg			
299-W15-46	226.5	229	B17NL7		9/9/2004																
			B17MM8	EB	9/23/2003	19	µg/L	U		2.3	µg/L	U		291	µg/L	U	2.3	µg/L	U		
			B17MN0	EB	9/23/2003																
					TQL (µg/kg)		10000				2000			N/A			N/A				

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Table B-1. Metal Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Uranium (7440-61-1)			Uranium (7440-61-1)			Vanadium (7440-62-2)			Zinc (7440-66-6)			
						200.8			KPA			6010			6010			
						Conc'n	Units	Q VQ	Conc'n	Units	Q VQ	Conc'n	Units	Q VQ	Conc'n	Units	Q VQ	
299-W15-46	47.5	50	B17N46		10/20/2003				897	μg/kg					48800	μg/kg		
299-W15-46	47.5	50	B17N46-B		10/20/2003													
299-W15-46	63.5	66	B17TM6		10/29/2003				2040	μg/kg					37800	μg/kg		
299-W15-46	63.5	66	B17TM6-B		10/29/2003													
299-W15-46	90	92.5	B17N52		3/23/2004						30600	μg/kg			35400	μg/kg		
299-W15-46	90	92.5	B17N52		3/23/2004				1620	μg/kg								
299-W15-46	109.5	112	B18XR8		4/8/2004				1220	μg/kg					42300	μg/kg		
299-W15-46	115	117.5	B191Y7		4/19/2004						23300	μg/kg			33500	μg/kg		
299-W15-46	115	117.5	B191Y7		4/19/2004				3140	μg/kg								
299-W15-46	117	119.5	B17N60		4/21/2004	522	μg/kg				137000	μg/kg			65800	μg/kg		
299-W15-46	119.5	122	B17N63		5/3/2004	667	μg/kg				105000	μg/kg			54200	μg/kg		
299-W15-46	119.5	122	B17N65		5/3/2004						114000	μg/kg			57600	μg/kg		
299-W15-46	174	176.5	B17N67		8/23/2004	995	μg/kg	U			26400	μg/kg			32300	μg/kg		
299-W15-46	174	176.5	B17N69		8/23/2004													
299-W15-46	184	186.5	B17N70		8/25/2004	987	μg/kg	U			26400	μg/kg			31900	μg/kg		
299-W15-46	184	186.5	B17N72		8/25/2004													
299-W15-46	224	226.5	B17N73		9/9/2004	382	μg/kg				56700	μg/kg			35900	μg/kg		
299-W15-46	224	226.5	B17NL3		9/9/2004													
299-W15-46	226.5	229	B17NL5		9/9/2004	158	μg/kg	U			51700	μg/kg			37000	μg/kg		
299-W15-46	226.5	229	B17NL7		9/9/2004													
			B17MM8	EB	9/23/2003	0.1	μg/L	U			3.6	μg/L	U		5.2	μg/L	U	
			B17MN0	EB	9/23/2003													
					TQL (μg/kg)		N/A			N/A		N/A			N/A			N/A

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Table B-2. General Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (23 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	4,4"-DDD (Dichlorodiphenyldichloroethane) (72-54-8)				4,4"-DDE (Dichlorodiphenyldichloroethylene) (72-55-9)				4,4"-DDT (Dichlorodiphenyltrichloroethane) (50-29-3)				Aldrin (309-00-2)			
						8081				8081				8081				8081			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	0	0.5	B17RC0		10/7/2003	3.4	µg/kg	U		3.4	µg/kg	U		3.4	µg/kg	U		1.7	µg/kg	U	
299-W15-46	28.5	29.5	B17RM4		10/13/2003																
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	49.5	50	B17RM5		10/20/2003																
299-W15-46	49.5	50	B17RM6	R	10/20/2003																
299-W15-46	49.5	50	B17RM7	R	10/21/2003																
299-W15-46	49.5	50	B17RM8		10/21/2003																
299-W15-46	49.5	50	B18CX0	R	10/20/2003																
299-W15-46	49.5	50	B18CX1	R	10/21/2003																
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003																
299-W15-46	58.5	59.5	B17RN1		10/27/2003																
299-W15-46	58.5	59.5	B17RN2		10/27/2003																
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003																
299-W15-46	65	66	B17RN3	R	10/31/2003																
299-W15-46	65	66	B17RN4	R	10/31/2003																
299-W15-46	65	66	B17RN5		10/31/2003																
299-W15-46	65	66	B17RN6		10/31/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	65	66	B17X85		11/4/2003																
299-W15-46	65	66	B17X86	R	11/4/2003																
299-W15-46	65	66	B17X87	R	11/4/2003																
299-W15-46	65	66	B17X96		3/15/2004																
299-W15-46	65	66	B17X97	R	3/15/2004																
299-W15-46	66	67	B17X90		11/10/2003																
299-W15-46	66	67	B17X91		11/10/2003																
299-W15-46	66	67	B17X92	R	11/10/2003																
299-W15-46	66	67	B17X93	R	11/10/2003																
299-W15-46	66	67.5	B17X98	R	3/15/2004																
299-W15-46	81	82	B17XB1		3/22/2004																
299-W15-46	81	82	B17XB2	R	3/22/2004																
299-W15-46	81	82	B17XB3	R	3/22/2004																
299-W15-46	90	92.5	B17N53		3/23/2004																
299-W15-46	90	92.5	B17XB6		3/23/2004																
299-W15-46	90	92.5	B17XB7	R	3/23/2004																
299-W15-46	90	92.5	B17XB8	R	3/23/2004																
299-W15-46	110	112	B17XB9		4/12/2004																
299-W15-46	110	112	B17XC0	R	4/12/2004																
299-W15-46	110	112	B17XC1	R	4/12/2004																
299-W15-46	110	112	B17XC3		4/12/2004																

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Table B-2. General Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (23 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Alpha-BHC (319-84-6)			Alpha-Chlordane (5103-71-9)			Aroclor-1016 (12674-11-2)			Aroclor-1221 (11104-28-2)		
						8081			8081			8082			8082		
						Conc'n	Units	Q/VQ	Conc'n	Units	Q/VQ	Conc'n	Units	Q/VQ	Conc'n	Units	Q/VQ
299-W15-46	0	0.5	B17RC0		10/7/2003	1.7	µg/kg	U	1.7	µg/kg	U						
299-W15-46	28.5	29.5	B17RM4		10/13/2003												
299-W15-46	47.5	50	B17N46		10/20/2003							40	µg/kg	U	13	µg/kg	U
299-W15-46	49.5	50	B17RM5		10/20/2003												
299-W15-46	49.5	50	B17RM6	R	10/20/2003												
299-W15-46	49.5	50	B17RM7	R	10/21/2003												
299-W15-46	49.5	50	B17RM8		10/21/2003												
299-W15-46	49.5	50	B18CX0	R	10/20/2003												
299-W15-46	49.5	50	B18CX1	R	10/21/2003												
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003												
299-W15-46	58.5	59.5	B17RN1		10/27/2003												
299-W15-46	58.5	59.5	B17RN2		10/27/2003												
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003												
299-W15-46	65	66	B17RN3	R	10/31/2003												
299-W15-46	65	66	B17RN4	R	10/31/2003												
299-W15-46	65	66	B17RN5		10/31/2003												
299-W15-46	65	66	B17RN6		10/31/2003												
299-W15-46	63.5	66	B17TM6		10/29/2003							160	µg/kg	U	50	µg/kg	U
299-W15-46	65	66	B17X85		11/4/2003												
299-W15-46	65	66	B17X86	R	11/4/2003												
299-W15-46	65	66	B17X87	R	11/4/2003												
299-W15-46	65	66	B17X96		3/15/2004												
299-W15-46	65	66	B17X97	R	3/15/2004												
299-W15-46	66	67	B17X90		11/10/2003												
299-W15-46	66	67	B17X91		11/10/2003												
299-W15-46	66	67	B17X92	R	11/10/2003												
299-W15-46	66	67	B17X93	R	11/10/2003												
299-W15-46	66	67.5	B17X98	R	3/15/2004												
299-W15-46	81	82	B17XB1		3/22/2004												
299-W15-46	81	82	B17XB2	R	3/22/2004												
299-W15-46	81	82	B17XB3	R	3/22/2004												
299-W15-46	90	92.5	B17N53		3/23/2004												
299-W15-46	90	92.5	B17XB6		3/23/2004												
299-W15-46	90	92.5	B17XB7	R	3/23/2004												
299-W15-46	90	92.5	B17XB8	R	3/23/2004												
299-W15-46	110	112	B17XB9		4/12/2004												
299-W15-46	110	112	B17XC0	R	4/12/2004												
299-W15-46	110	112	B17XC1	R	4/12/2004												
299-W15-46	110	112	B17XC3		4/12/2004												

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Table B-2. General Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (23 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Alpha-BHC (319-84-6)				Alpha-Chlordane (5103-71-9)				Aroclor-1016 (12674-11-2)				Aroclor-1221 (11104-28-2)				
						8081				8081				8082				8082				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
299-W15-46	109.5	112	B18XP8		4/8/2004									39	µg/kg	U			12	µg/kg	U	
299-W15-46	115	117.5	B191Y6		4/19/2004																	
299-W15-46	115	117.5	B191Y7		4/19/2004									27	µg/kg	U	R		27	µg/kg	U	R
299-W15-46	117	119.5	B17T82		4/21/2004																	
299-W15-46	118	119.5	B17XC4		4/22/2004																	
299-W15-46	118	119.5	B17XC5		4/22/2004																	
299-W15-46	118	119.5	B17XC6		4/22/2004																	
299-W15-46	118	119.5	B17XC7	R	4/22/2004																	
299-W15-46	118	119.5	B17XC8	R	4/22/2004																	
299-W15-46	119.5	122	B17N63		5/3/2004									50	µg/kg	U	J		100	µg/kg	U	J
299-W15-46	119.5	122	B17N65		5/3/2004									15	µg/kg	U			15	µg/kg	U	
299-W15-46	119.5	122	B17RM3		5/3/2004																	
299-W15-46	119.5	122	B17XC9		5/3/2004																	
299-W15-46	119.5	122	B17XD0		5/3/2004																	
299-W15-46	119.5	122	B17XD1		5/3/2004																	
299-W15-46	119.5	122	B17XD2	R	5/3/2004																	
299-W15-46	119.5	122	B17XD3	R	5/3/2004																	
299-W15-46	174	176.5	B17N67		8/23/2004									49	µg/kg	U			98	µg/kg	U	
299-W15-46	184	186.5	B17T84		8/25/2004																	
299-W15-46	224	226.5	B17NL4		9/9/2004																	
299-W15-46	226.5	229	B17NL5		9/9/2004									56	µg/kg	U			110	µg/kg	U	
			B17MM8	EB	9/23/2003									0.099	µg/L	U			0.2	µg/L	U	
			B17MM9	EB	9/23/2003	0.05	µg/L	U		0.05	µg/L	U										
					TQL (µg/kg)															16.5		16.5

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Table B-2. General Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (23 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Aroclor-1232 (11141-16-5)				Aroclor-1242 (53469-21-9)				Aroclor-1248 (12672-29-6)				Aroclor-1254 (11097-69-1)			
						8082				8082				8082				8082			
						Conc'n	Units	Q	VQ												
299-W15-46	109.5	112	B18XR8		4/8/2004	220	µg/kg	U		40	µg/kg	U		13	µg/kg	U		7.4	µg/kg	U	
299-W15-46	115	117.5	B191Y6		4/19/2004																
299-W15-46	115	117.5	B191Y7		4/19/2004	27	µg/kg	U	R												
299-W15-46	117	119.5	B17T82		4/21/2004																
299-W15-46	118	119.5	B17XC4		4/22/2004																
299-W15-46	118	119.5	B17XC5		4/22/2004																
299-W15-46	118	119.5	B17XC6		4/22/2004																
299-W15-46	118	119.5	B17XC7	R	4/22/2004																
299-W15-46	118	119.5	B17XC8	R	4/22/2004																
299-W15-46	119.5	122	B17N63		5/3/2004	50	µg/kg	U	J												
299-W15-46	119.5	122	B17N65		5/3/2004	15	µg/kg	U													
299-W15-46	119.5	122	B17RM3		5/3/2004																
299-W15-46	119.5	122	B17XC9		5/3/2004																
299-W15-46	119.5	122	B17XD0		5/3/2004																
299-W15-46	119.5	122	B17XD1		5/3/2004																
299-W15-46	119.5	122	B17XD2	R	5/3/2004																
299-W15-46	119.5	122	B17XD3	R	5/3/2004																
299-W15-46	174	176.5	B17N67		8/23/2004	49	µg/kg	U													
299-W15-46	184	186.5	B17T84		8/25/2004																
299-W15-46	224	226.5	B17NL4		9/9/2004																
299-W15-46	226.5	229	B17NL5		9/9/2004	56	µg/kg	U													
			B17MM8	EB	9/23/2003	0.099	µg/L	U													
			B17MM9	EB	9/23/2003																
					TQL (µg/kg)					16.5				16.5				16.5			16.5

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Table B-2. General Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (23 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Aroclor-1260 (11096-82-5)				Aroclor-1262 (37324-23-5)				Aroclor-1268 (11100-14-4)				beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC) (319-85-7)						
						8082				8082				8082				8081						
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ			
299-W15-46	0	0.5	B17RC0		10/7/2003													1.7	µg/kg	U				
299-W15-46	28.5	29.5	B17RM4		10/13/2003																			
299-W15-46	47.5	50	B17N46		10/20/2003	55	µg/kg	U																
299-W15-46	49.5	50	B17RM5		10/20/2003																			
299-W15-46	49.5	50	B17RM6	R	10/20/2003																			
299-W15-46	49.5	50	B17RM7	R	10/21/2003																			
299-W15-46	49.5	50	B17RM8		10/21/2003																			
299-W15-46	49.5	50	B18CX0	R	10/20/2003																			
299-W15-46	49.5	50	B18CX1	R	10/21/2003																			
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003																			
299-W15-46	58.5	59.5	B17RN1		10/27/2003																			
299-W15-46	58.5	59.5	B17RN2		10/27/2003																			
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003																			
299-W15-46	65	66	B17RN3	R	10/31/2003																			
299-W15-46	65	66	B17RN4	R	10/31/2003																			
299-W15-46	65	66	B17RN5		10/31/2003																			
299-W15-46	65	66	B17RN6		10/31/2003																			
299-W15-46	63.5	66	B17TM6		10/29/2003	220	µg/kg	U																
299-W15-46	65	66	B17X85		11/4/2003																			
299-W15-46	65	66	B17X86	R	11/4/2003																			
299-W15-46	65	66	B17X87	R	11/4/2003																			
299-W15-46	65	66	B17X96		3/15/2004																			
299-W15-46	65	66	B17X97	R	3/15/2004																			
299-W15-46	66	67	B17X90		11/10/2003																			
299-W15-46	66	67	B17X91		11/10/2003																			
299-W15-46	66	67	B17X92	R	11/10/2003																			
299-W15-46	66	67	B17X93	R	11/10/2003																			
299-W15-46	66	67.5	B17X98	R	3/15/2004																			
299-W15-46	81	82	B17XB1		3/22/2004																			
299-W15-46	81	82	B17XB2	R	3/22/2004																			
299-W15-46	81	82	B17XB3	R	3/22/2004																			
299-W15-46	90	92.5	B17N53		3/23/2004																			
299-W15-46	90	92.5	B17XB6		3/23/2004																			
299-W15-46	90	92.5	B17XB7	R	3/23/2004																			
299-W15-46	90	92.5	B17XB8	R	3/23/2004																			
299-W15-46	110	112	B17XB9		4/12/2004																			
299-W15-46	110	112	B17XC0	R	4/12/2004																			
299-W15-46	110	112	B17XC1	R	4/12/2004																			
299-W15-46	110	112	B17XC3		4/12/2004																			

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Table B-2. General Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (23 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Aroclor-1260 (11096-82-5)				Aroclor-1262 (37324-23-5)				Aroclor-1268 (11100-14-4)				beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC) (319-85-7)			
						8082				8082				8082				8081			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	109.5	112	B18XR8		4/8/2004	54	µg/kg	U													
299-W15-46	115	117.5	B191Y6		4/19/2004																
299-W15-46	115	117.5	B191Y7		4/19/2004	27	µg/kg	U	R												
299-W15-46	117	119.5	B17T82		4/21/2004																
299-W15-46	118	119.5	B17XC4		4/22/2004																
299-W15-46	118	119.5	B17XC5		4/22/2004																
299-W15-46	118	119.5	B17XC6		4/22/2004																
299-W15-46	118	119.5	B17XC7	R	4/22/2004																
299-W15-46	118	119.5	B17XC8	R	4/22/2004																
299-W15-46	119.5	122	B17N63		5/3/2004	50	µg/kg	U	J	50	µg/kg	U	J	50	µg/kg	U	J				
299-W15-46	119.5	122	B17N65		5/3/2004	15	µg/kg	U													
299-W15-46	119.5	122	B17RM3		5/3/2004																
299-W15-46	119.5	122	B17XC9		5/3/2004																
299-W15-46	119.5	122	B17XD0		5/3/2004																
299-W15-46	119.5	122	B17XD1		5/3/2004																
299-W15-46	119.5	122	B17XD2	R	5/3/2004																
299-W15-46	119.5	122	B17XD3	R	5/3/2004																
299-W15-46	174	176.5	B17N67		8/23/2004	49	µg/kg	U		49	µg/kg	U		49	µg/kg	U					
299-W15-46	184	186.5	B17T84		8/25/2004																
299-W15-46	224	226.5	B17NL4		9/9/2004																
299-W15-46	226.5	229	B17NL5		9/9/2004	56	µg/kg	U		56	µg/kg	U		56	µg/kg	U					
			B17MM8	EB	9/23/2003	0.099	µg/L	U		0.099	µg/L	U		0.099	µg/L	U					
			B17MM9	EB	9/23/2003													0.05	µg/L	U	
					TQL (µg/kg)					16.5				16.5					Not listed		

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Table B-2. General Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (23 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium Carbonate (471-34-1)				Carbon Dioxide (124-38-9)				Dalapon (75-99-0)				Delta-BHC (319-86-8)			
						D4373				IR, field				8151				8081			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	0	0.5	B17RC0		10/7/2003									170	µg/kg	U		1.7	µg/kg	U	
299-W15-46	28.5	29.5	B17RM4		10/13/2003																
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	49.5	50	B17RM5		10/20/2003																
299-W15-46	49.5	50	B17RM6	R	10/20/2003																
299-W15-46	49.5	50	B17RM7	R	10/21/2003																
299-W15-46	49.5	50	B17RM8		10/21/2003																
299-W15-46	49.5	50	B18CX0	R	10/20/2003																
299-W15-46	49.5	50	B18CX1	R	10/21/2003																
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003																
299-W15-46	58.5	59.5	B17RN1		10/27/2003																
299-W15-46	58.5	59.5	B17RN2		10/27/2003																
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003																
299-W15-46	65	66	B17RN3	R	10/31/2003																
299-W15-46	65	66	B17RN4	R	10/31/2003																
299-W15-46	65	66	B17RN5		10/31/2003																
299-W15-46	65	66	B17RN6		10/31/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	65	66	B17X85		11/4/2003																
299-W15-46	65	66	B17X86	R	11/4/2003																
299-W15-46	65	66	B17X87	R	11/4/2003					0	%(vol)										
299-W15-46	65	66	B17X96		3/15/2004					0.1	%(vol)										
299-W15-46	65	66	B17X97	R	3/15/2004																
299-W15-46	66	67	B17X90		11/10/2003																
299-W15-46	66	67	B17X91		11/10/2003																
299-W15-46	66	67	B17X92	R	11/10/2003																
299-W15-46	66	67	B17X93	R	11/10/2003																
299-W15-46	66	67.5	B17X98	R	3/15/2004					0.2	%(vol)										
299-W15-46	81	82	B17XB1		3/22/2004																
299-W15-46	81	82	B17XB2	R	3/22/2004																
299-W15-46	81	82	B17XB3	R	3/22/2004					0.8	%(vol)										
299-W15-46	90	92.5	B17N53		3/23/2004	1	%														
299-W15-46	90	92.5	B17XB6		3/23/2004																
299-W15-46	90	92.5	B17XB7	R	3/23/2004																
299-W15-46	90	92.5	B17XB8	R	3/23/2004					1.3	%(vol)										
299-W15-46	110	112	B17XB9		4/12/2004																
299-W15-46	110	112	B17XC0	R	4/12/2004																
299-W15-46	110	112	B17XC1	R	4/12/2004																
299-W15-46	110	112	B17XC3		4/12/2004																

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Table B-2. General Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (23 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dicamba (1918-00-9)				Dichloroprop (120-36-5)				Dieldrin (60-57-1)				Dinoseb(2-secButyl- 4,6-dinitrophenol) (88-85-7)			
						8151				8151				8081				8151			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	0	0.5	B17RC0		10/7/2003	67	µg/kg	U		170	µg/kg	U		3.4	µg/kg	U		17	µg/kg	U	
299-W15-46	28.5	29.5	B17RM4		10/13/2003																
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	49.5	50	B17RM5		10/20/2003																
299-W15-46	49.5	50	B17RM6	R	10/20/2003																
299-W15-46	49.5	50	B17RM7	R	10/21/2003																
299-W15-46	49.5	50	B17RM8		10/21/2003																
299-W15-46	49.5	50	B18CX0	R	10/20/2003																
299-W15-46	49.5	50	B18CX1	R	10/21/2003																
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003																
299-W15-46	58.5	59.5	B17RN1		10/27/2003																
299-W15-46	58.5	59.5	B17RN2		10/27/2003																
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003																
299-W15-46	65	66	B17RN3	R	10/31/2003																
299-W15-46	65	66	B17RN4	R	10/31/2003																
299-W15-46	65	66	B17RN5		10/31/2003																
299-W15-46	65	66	B17RN6		10/31/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	65	66	B17X85		11/4/2003																
299-W15-46	65	66	B17X86	R	11/4/2003																
299-W15-46	65	66	B17X87	R	11/4/2003																
299-W15-46	65	66	B17X96		3/15/2004																
299-W15-46	65	66	B17X97	R	3/15/2004																
299-W15-46	66	67	B17X90		11/10/2003																
299-W15-46	66	67	B17X91		11/10/2003																
299-W15-46	66	67	B17X92	R	11/10/2003																
299-W15-46	66	67	B17X93	R	11/10/2003																
299-W15-46	66	67.5	B17X98	R	3/15/2004																
299-W15-46	81	82	B17XB1		3/22/2004																
299-W15-46	81	82	B17XB2	R	3/22/2004																
299-W15-46	81	82	B17XB3	R	3/22/2004																
299-W15-46	90	92.5	B17N53		3/23/2004																
299-W15-46	90	92.5	B17XB6		3/23/2004																
299-W15-46	90	92.5	B17XB7	R	3/23/2004																
299-W15-46	90	92.5	B17XB8	R	3/23/2004																
299-W15-46	110	112	B17XB9		4/12/2004																
299-W15-46	110	112	B17XC0	R	4/12/2004																
299-W15-46	110	112	B17XC1	R	4/12/2004																
299-W15-46	110	112	B17XC3		4/12/2004																

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Table B-2. General Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (23 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Endosulfan I (959-98-8)				Endosulfan II (33213-65-9)				Endosulfan sulfate (1031-07-8)				Endrin (72-20-8)			
						8081				8081				8081				8081			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	0	0.5	B17RC0		10/7/2003	1.7	µg/kg	U		3.4	µg/kg	U		3.4	µg/kg	U		3.4	µg/kg	U	
299-W15-46	28.5	29.5	B17RM4		10/13/2003																
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	49.5	50	B17RM5		10/20/2003																
299-W15-46	49.5	50	B17RM6	R	10/20/2003																
299-W15-46	49.5	50	B17RM7	R	10/21/2003																
299-W15-46	49.5	50	B17RM8		10/21/2003																
299-W15-46	49.5	50	B18CX0	R	10/20/2003																
299-W15-46	49.5	50	B18CX1	R	10/21/2003																
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003																
299-W15-46	58.5	59.5	B17RN1		10/27/2003																
299-W15-46	58.5	59.5	B17RN2		10/27/2003																
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003																
299-W15-46	65	66	B17RN3	R	10/31/2003																
299-W15-46	65	66	B17RN4	R	10/31/2003																
299-W15-46	65	66	B17RN5		10/31/2003																
299-W15-46	65	66	B17RN6		10/31/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	65	66	B17X85		11/4/2003																
299-W15-46	65	66	B17X86	R	11/4/2003																
299-W15-46	65	66	B17X87	R	11/4/2003																
299-W15-46	65	66	B17X96		3/15/2004																
299-W15-46	65	66	B17X97	R	3/15/2004																
299-W15-46	66	67	B17X90		11/10/2003																
299-W15-46	66	67	B17X91		11/10/2003																
299-W15-46	66	67	B17X92	R	11/10/2003																
299-W15-46	66	67	B17X93	R	11/10/2003																
299-W15-46	66	67.5	B17X98	R	3/15/2004																
299-W15-46	81	82	B17XB1		3/22/2004																
299-W15-46	81	82	B17XB2	R	3/22/2004																
299-W15-46	81	82	B17XB3	R	3/22/2004																
299-W15-46	90	92.5	B17N53		3/23/2004																
299-W15-46	90	92.5	B17XB6		3/23/2004																
299-W15-46	90	92.5	B17XB7	R	3/23/2004																
299-W15-46	90	92.5	B17XB8	R	3/23/2004																
299-W15-46	110	112	B17XB9		4/12/2004																
299-W15-46	110	112	B17XC0	R	4/12/2004																
299-W15-46	110	112	B17XC1	R	4/12/2004																
299-W15-46	110	112	B17XC3		4/12/2004																

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Table B-2. General Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (23 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Endosulfan I (959-98-8)				Endosulfan II (33213-65-9)				Endosulfan sulfate (1031-07-8)				Endrin (72-20-8)			
						8081				8081				8081				8081			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	109.5	112	B18XR8		4/8/2004																
299-W15-46	115	117.5	B191Y6		4/19/2004																
299-W15-46	115	117.5	B191Y7		4/19/2004																
299-W15-46	117	119.5	B17T82		4/21/2004																
299-W15-46	118	119.5	B17XC4		4/22/2004																
299-W15-46	118	119.5	B17XC5		4/22/2004																
299-W15-46	118	119.5	B17XC6		4/22/2004																
299-W15-46	118	119.5	B17XC7	R	4/22/2004																
299-W15-46	118	119.5	B17XC8	R	4/22/2004																
299-W15-46	119.5	122	B17N63		5/3/2004																
299-W15-46	119.5	122	B17N65		5/3/2004																
299-W15-46	119.5	122	B17RM3		5/3/2004																
299-W15-46	119.5	122	B17XC9		5/3/2004																
299-W15-46	119.5	122	B17XD0		5/3/2004																
299-W15-46	119.5	122	B17XD1		5/3/2004																
299-W15-46	119.5	122	B17XD2	R	5/3/2004																
299-W15-46	119.5	122	B17XD3	R	5/3/2004																
299-W15-46	174	176.5	B17N67		8/23/2004																
299-W15-46	184	186.5	B17T84		8/25/2004																
299-W15-46	224	226.5	B17NL4		9/9/2004																
299-W15-46	226.5	229	B17NL5		9/9/2004																
			B17MM8	EB	9/23/2003																
			B17MM9	EB	9/23/2003	0.05	µg/L	U		0.1	µg/L	U		0.1	µg/L	U		0.1	µg/L	U	
					TQL (µg/kg)	Not listed				Not listed				Not listed				Not listed			

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Table B-2. General Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (23 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Endrin aldehyde (7421-93-4)				Endrin ketone (53494-70-5)				Gamma-BHC (Lindane) (58-89-9)				Gamma-Chlordane (5103-74-2)			
						8081				8081				8081				8081			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	0	0.5	B17RC0		10/7/2003	3.4	µg/kg	U		3.4	µg/kg	U		1.7	µg/kg	U		1.7	µg/kg	U	
299-W15-46	28.5	29.5	B17RM4		10/13/2003																
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	49.5	50	B17RM5		10/20/2003																
299-W15-46	49.5	50	B17RM6	R	10/20/2003																
299-W15-46	49.5	50	B17RM7	R	10/21/2003																
299-W15-46	49.5	50	B17RM8		10/21/2003																
299-W15-46	49.5	50	B18CX0	R	10/20/2003																
299-W15-46	49.5	50	B18CX1	R	10/21/2003																
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003																
299-W15-46	58.5	59.5	B17RN1		10/27/2003																
299-W15-46	58.5	59.5	B17RN2		10/27/2003																
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003																
299-W15-46	65	66	B17RN3	R	10/31/2003																
299-W15-46	65	66	B17RN4	R	10/31/2003																
299-W15-46	65	66	B17RN5		10/31/2003																
299-W15-46	65	66	B17RN6		10/31/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	65	66	B17X85		11/4/2003																
299-W15-46	65	66	B17X86	R	11/4/2003																
299-W15-46	65	66	B17X87	R	11/4/2003																
299-W15-46	65	66	B17X96		3/15/2004																
299-W15-46	65	66	B17X97	R	3/15/2004																
299-W15-46	66	67	B17X90		11/10/2003																
299-W15-46	66	67	B17X91		11/10/2003																
299-W15-46	66	67	B17X92	R	11/10/2003																
299-W15-46	66	67	B17X93	R	11/10/2003																
299-W15-46	66	67.5	B17X98	R	3/15/2004																
299-W15-46	81	82	B17XB1		3/22/2004																
299-W15-46	81	82	B17XB2	R	3/22/2004																
299-W15-46	81	82	B17XB3	R	3/22/2004																
299-W15-46	90	92.5	B17N53		3/23/2004																
299-W15-46	90	92.5	B17XB6		3/23/2004																
299-W15-46	90	92.5	B17XB7	R	3/23/2004																
299-W15-46	90	92.5	B17XB8	R	3/23/2004																
299-W15-46	110	112	B17XB9		4/12/2004																
299-W15-46	110	112	B17XC0	R	4/12/2004																
299-W15-46	110	112	B17XC1	R	4/12/2004																
299-W15-46	110	112	B17XC3		4/12/2004																

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Table B-2. General Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (23 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Endrin aldehyde (7421-93-4)				Endrin ketone (53494-70-5)				Gamma-BHC (Lindane) (58-89-9)				Gamma-Chlordane (5103-74-2)			
						8081				8081				8081				8081			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	109.5	112	B18XR8		4/8/2004																
299-W15-46	115	117.5	B191Y6		4/19/2004																
299-W15-46	115	117.5	B191Y7		4/19/2004																
299-W15-46	117	119.5	B17T82		4/21/2004																
299-W15-46	118	119.5	B17XC4		4/22/2004																
299-W15-46	118	119.5	B17XC5		4/22/2004																
299-W15-46	118	119.5	B17XC6		4/22/2004																
299-W15-46	118	119.5	B17XC7	R	4/22/2004																
299-W15-46	118	119.5	B17XC8	R	4/22/2004																
299-W15-46	119.5	122	B17N63		5/3/2004																
299-W15-46	119.5	122	B17N65		5/3/2004																
299-W15-46	119.5	122	B17RM3		5/3/2004																
299-W15-46	119.5	122	B17XC9		5/3/2004																
299-W15-46	119.5	122	B17XD0		5/3/2004																
299-W15-46	119.5	122	B17XD1		5/3/2004																
299-W15-46	119.5	122	B17XD2	R	5/3/2004																
299-W15-46	119.5	122	B17XD3	R	5/3/2004																
299-W15-46	174	176.5	B17N67		8/23/2004																
299-W15-46	184	186.5	B17T84		8/25/2004																
299-W15-46	224	226.5	B17NL4		9/9/2004																
299-W15-46	226.5	229	B17NL5		9/9/2004																
			B17MM8	EB	9/23/2003																
			B17MM9	EB	9/23/2003	0.1	µg/L	U		0.1	µg/L	U		0.05	µg/L	U		0.05	µg/L	U	
					TQL (µg/kg)				Not listed				Not listed					Not listed			

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Table B-2. General Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (23 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Heptachlor (76-44-8)				Heptachlor epoxide (1024-57-3)				Methane (74-82-8)				Methoxychlor (72-43-5)						
						8081				8081				IR, field				8081						
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ			
299-W15-46	0	0.5	B17RC0		10/7/2003	1.7	µg/kg	U		1.7	µg/kg	U					17	µg/kg	U					
299-W15-46	28.5	29.5	B17RM4		10/13/2003									0	%(vol)	U								
299-W15-46	47.5	50	B17N46		10/20/2003																			
299-W15-46	49.5	50	B17RM5		10/20/2003									0	%(vol)	U								
299-W15-46	49.5	50	B17RM6	R	10/20/2003									0	%(vol)	U								
299-W15-46	49.5	50	B17RM7	R	10/21/2003									0	%(vol)	U								
299-W15-46	49.5	50	B17RM8		10/21/2003									0	%(vol)	U								
299-W15-46	49.5	50	B18CX0	R	10/20/2003									0	%(vol)	U								
299-W15-46	49.5	50	B18CX1	R	10/21/2003									0	%(vol)	U								
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003									0	%(vol)	U								
299-W15-46	58.5	59.5	B17RN1		10/27/2003									0	%(vol)	U								
299-W15-46	58.5	59.5	B17RN2		10/27/2003									0	%(vol)	U								
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003									0	%(vol)	U								
299-W15-46	65	66	B17RN3	R	10/31/2003									0.1	%(vol)									
299-W15-46	65	66	B17RN4	R	10/31/2003									0	%(vol)	U								
299-W15-46	65	66	B17RN5		10/31/2003									0	%(vol)	U								
299-W15-46	65	66	B17RN6		10/31/2003									0	%(vol)	U								
299-W15-46	63.5	66	B17TM6		10/29/2003																			
299-W15-46	65	66	B17X85		11/4/2003									0	%(vol)	U								
299-W15-46	65	66	B17X86	R	11/4/2003									0	%(vol)	U								
299-W15-46	65	66	B17X87	R	11/4/2003									0	%(vol)									
299-W15-46	65	66	B17X96		3/15/2004									0	%(vol)	U								
299-W15-46	65	66	B17X97	R	3/15/2004									0	%(vol)	U								
299-W15-46	66	67	B17X90		11/10/2003									0	%(vol)	U								
299-W15-46	66	67	B17X91		11/10/2003									0	%(vol)	U								
299-W15-46	66	67	B17X92	R	11/10/2003									0	%(vol)	U								
299-W15-46	66	67	B17X93	R	11/10/2003									0	%(vol)									
299-W15-46	66	67.5	B17X98	R	3/15/2004									0	%(vol)									
299-W15-46	81	82	B17XB1		3/22/2004									0	%(vol)	U								
299-W15-46	81	82	B17XB2	R	3/22/2004									0	%(vol)	U								
299-W15-46	81	82	B17XB3	R	3/22/2004									0	%(vol)									
299-W15-46	90	92.5	B17N53		3/23/2004																			
299-W15-46	90	92.5	B17XB6		3/23/2004									0	%(vol)	U								
299-W15-46	90	92.5	B17XB7	R	3/23/2004									0	%(vol)									
299-W15-46	90	92.5	B17XB8	R	3/23/2004									0	%(vol)	U								
299-W15-46	110	112	B17XB9		4/12/2004									0	%(vol)	U								
299-W15-46	110	112	B17XC0	R	4/12/2004									0	%(vol)	U								
299-W15-46	110	112	B17XC1	R	4/12/2004									0	%(vol)	U								
299-W15-46	110	112	B17XC3		4/12/2004									0	%(vol)	U								

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Table B-2. General Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (23 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Heptachlor (76-44-8)				Heptachlor epoxide (1024-57-3)				Methane (74-82-8)				Methoxychlor (72-43-5)				
						8081				8081				IR, field				8081				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
299-W15-46	109.5	112	B18XR8		4/8/2004																	
299-W15-46	115	117.5	B191Y6		4/19/2004																	
299-W15-46	115	117.5	B191Y7		4/19/2004																	
299-W15-46	117	119.5	B17T82		4/21/2004																	
299-W15-46	118	119.5	B17XC4		4/22/2004																	
299-W15-46	118	119.5	B17XC5		4/22/2004									0	%(vol)	U						
299-W15-46	118	119.5	B17XC6		4/22/2004									0	%(vol)	U						
299-W15-46	118	119.5	B17XC7	R	4/22/2004									0	%(vol)	U						
299-W15-46	118	119.5	B17XC8	R	4/22/2004									0	%(vol)	U						
299-W15-46	119.5	122	B17N63		5/3/2004																	
299-W15-46	119.5	122	B17N65		5/3/2004																	
299-W15-46	119.5	122	B17RM3		5/3/2004																	
299-W15-46	119.5	122	B17XC9		5/3/2004									0	%(vol)	U						
299-W15-46	119.5	122	B17XD0		5/3/2004									0	%(vol)	U						
299-W15-46	119.5	122	B17XD1		5/3/2004									0	%(vol)	U						
299-W15-46	119.5	122	B17XD2	R	5/3/2004									0	%(vol)	U						
299-W15-46	119.5	122	B17XD3	R	5/3/2004									0	%(vol)	U						
299-W15-46	174	176.5	B17N67		8/23/2004																	
299-W15-46	184	186.5	B17T84		8/25/2004																	
299-W15-46	224	226.5	B17NL4		9/9/2004																	
299-W15-46	226.5	229	B17NL5		9/9/2004																	
			B17MM8	EB	9/23/2003																	
			B17MM9	EB	9/23/2003	0.05	µg/L	U		0.05	µg/L	U							0.5	µg/L	U	
					TQL (µg/kg)	Not listed	Not listed	N/A	Not listed													

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Table B-2. General Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (23 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Total Inorganic Carbon (TINC)				Total Inorganic Carbon (TINC)				Total organic carbon (TOC)				Total organic carbon (TOC)			
						415.1				9060				415.1				9060			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	0	0.5	B17RC0		10/7/2003																
299-W15-46	28.5	29.5	B17RM4		10/13/2003																
299-W15-46	47.5	50	B17N46-B		10/20/2003					23800	µg/kg	B						341000	µg/kg		
299-W15-46	49.5	50	B17RM5		10/20/2003																
299-W15-46	49.5	50	B17RM6	R	10/20/2003																
299-W15-46	49.5	50	B17RM7	R	10/21/2003																
299-W15-46	49.5	50	B17RM8		10/21/2003																
299-W15-46	49.5	50	B18CX0	R	10/20/2003																
299-W15-46	49.5	50	B18CX1	R	10/21/2003																
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003																
299-W15-46	58.5	59.5	B17RN1		10/27/2003																
299-W15-46	58.5	59.5	B17RN2		10/27/2003																
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003																
299-W15-46	65	66	B17RN3	R	10/31/2003																
299-W15-46	65	66	B17RN4	R	10/31/2003																
299-W15-46	65	66	B17RN5		10/31/2003																
299-W15-46	65	66	B17RN6		10/31/2003																
299-W15-46	63.5	66	B17TM6-B		10/29/2003					260000	µg/kg							2430000	µg/kg		
299-W15-46	65	66	B17X85		11/4/2003																
299-W15-46	65	66	B17X86	R	11/4/2003																
299-W15-46	65	66	B17X87	R	11/4/2003																
299-W15-46	66	67	B17X90		11/10/2003																
299-W15-46	66	67	B17X91		11/10/2003																
299-W15-46	66	67	B17X92	R	11/10/2003																
299-W15-46	66	67	B17X93	R	11/10/2003																
299-W15-46	90	92.5	B17N52		3/23/2004					1980000	µg/kg			143000	µg/kg						
299-W15-46	115	117.5	B191Y7		4/19/2004																
299-W15-46	117	119.5	B17N60		4/21/2004																
299-W15-46	119.5	122	B17N63		5/3/2004																
299-W15-46	119.5	122	B17N65		5/3/2004	5440000	µg/kg							2600000	µg/kg						
299-W15-46	174	176.5	B17N67		8/23/2004																
299-W15-46	174	176.5	B17N69		8/23/2004	60300	µg/kg	U										76500	µg/kg		
299-W15-46	184	186.5	B17N70		8/25/2004																
299-W15-46	184	186.5	B17N72		8/25/2004	175000	µg/kg											39500	µg/kg	U	
299-W15-46	224	226.5	B17N73		9/9/2004																
299-W15-46	224	226.5	B17NL3		9/9/2004	4700	µg/kg	U						97900	µg/kg	U					
299-W15-46	226.5	229	B17NL5		9/9/2004																
299-W15-46	226.5	229	B17NL7		9/9/2004	22900	µg/kg	U						280000	µg/kg						
			B17MM8	EB	9/23/2003																
			B17MM9	EB	9/23/2003	500	µg/L	U						500	µg/L	U					
					TQL (µg/kg)					N/A				N/A						N/A	

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Table B-3. Radiochemical Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (22 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Americium-241 (14596-10-2)					Americium-241 (14596-10-2)					Antimony-125 (14234-35-6)				
						IX/Plate/AEA					IX/Prec/AEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-46	47.5	50	B17N46		10/20/2003											591	pCi/g	U		
299-W15-46	47.5	50	B17N46-A		10/20/2003															
299-W15-46	63.5	66	B17TM6		10/29/2003											792	pCi/g	U		
299-W15-46	63.5	66	B17TM6-A		10/29/2003															
299-W15-46	90	92.5	B17N52		3/23/2004	4380	pCi/g			12						0.96	pCi/g	U		0.96
299-W15-46	109.5	112	B17N57		4/8/2004											1.3	pCi/g	U		1.3
299-W15-46	109.5	112	B18XR8		4/8/2004											34.7	pCi/g	U		
299-W15-46	112	112	B190T8-A		4/15/2004															
299-W15-46	115	117.5	B191Y7		4/19/2004	105000	pCi/g			90						0.78	pCi/g	U		0.78
299-W15-46	117	119.5	B17N60		4/21/2004						980	pCi/g			1.2	-0.045	pCi/g	U		0.22
299-W15-46	119.5	122	B17N63		5/3/2004						190	pCi/g			1.2	-0.057	pCi/g	U		0.19
299-W15-46	174	176.5	B17N67		8/23/2004						0.038	pCi/g			0.016	-0.005	pCi/g	U		0.032
299-W15-46	184	186.5	B17N70		8/25/2004						0.18	pCi/g			0.017	-0.009	pCi/g	U		0.034
299-W15-46	224	226.5	B17N73		9/9/2004						0.017	pCi/g	U		0.033	0.019	pCi/g	U		0.035
299-W15-46	226.5	229	B17NL5		9/9/2004						0.009	pCi/g	U		0.028	0	pCi/g	U		0.041
			B17MM8	EB	9/23/2003						0.044	pCi/L	U		0.13	-2.77	pCi/L	U		27
			B17MM9	EB	9/23/2003															
					TQL (pCi/g)						1				1					N/A

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Table B-3. Radiochemical Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (22 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon-14 (14762-75-5)					Cerium-144 (14762-78-8)					Cesium-134 (13967-70-9)							
						CombOx/LSC					GEA					GEA							
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA			
299-W15-46	47.5	50	B17N46		10/20/2003													223	pCi/g	U			
299-W15-46	47.5	50	B17N46-A		10/20/2003	5.38	pCi/g	U		24													
299-W15-46	63.5	66	B17TM6		10/29/2003													298	pCi/g	U			
299-W15-46	63.5	66	B17TM6-A		10/29/2003	-13.7	pCi/g	U		39													
299-W15-46	90	92.5	B17N52		3/23/2004													0.61	pCi/g	U		0.61	
299-W15-46	109.5	112	B17N57		4/8/2004	65.9	pCi/g	U		96								0.62	pCi/g	U		0.62	
299-W15-46	109.5	112	B18XR8		4/8/2004													12.5	pCi/g	U			
299-W15-46	112	112	B190T8-A		4/15/2004																		
299-W15-46	115	117.5	B191Y7		4/19/2004	49.2	pCi/g	U		100								0.55	pCi/g	U		0.55	
299-W15-46	117	119.5	B17N60		4/21/2004													0.017	pCi/g	U		0.11	
299-W15-46	119.5	122	B17N63		5/3/2004													0.025	pCi/g	U		0.098	
299-W15-46	174	176.5	B17N67		8/23/2004													0.029	pCi/g	U		0.03	
299-W15-46	184	186.5	B17N70		8/25/2004													0.043	pCi/g	U		0.05	
299-W15-46	224	226.5	B17N73		9/9/2004													0.038	pCi/g	U		0.017	
299-W15-46	226.5	229	B17NL5		9/9/2004													0.036	pCi/g	U		0.04	
			B17MM8	EB	9/23/2003					7.3	pCi/L	U		63				-4.12	pCi/L	U		12	
			B17MM9	EB	9/23/2003																		
					TQL (pCi/g)					1									N/A				

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Table B-3. Radiochemical Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (22 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cesium-137 (10045-97-3)					Cobalt-60 (10198-40-0)					Europium-152 (14683-23-9)				
						GEA					GEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-46	47.5	50	B17N46		10/20/2003	394	pCi/g	U			260	pCi/g	U			327	pCi/g	U		
299-W15-46	47.5	50	B17N46-A		10/20/2003	18	pCi/g	U		18	21	pCi/g	U		21	38	pCi/g	U		38
299-W15-46	63.5	66	B17TM6		10/29/2003	766	pCi/g	U			383	pCi/g	U			701	pCi/g	U		
299-W15-46	63.5	66	B17TM6-A		10/29/2003	11	pCi/g	U		11	15	pCi/g	U		15	31	pCi/g	U		31
299-W15-46	90	92.5	B17N52		3/23/2004	0.47	pCi/g	U		0.47	0.53	pCi/g	U		0.53	1	pCi/g	U		1
299-W15-46	109.5	112	B17N57		4/8/2004	1.04	pCi/g			0.66	0.61	pCi/g	U		0.61	1.4	pCi/g	U		1.4
299-W15-46	109.5	112	B18XR8		4/8/2004	26.1	pCi/g	U			15.3	pCi/g	U			20.7	pCi/g			
299-W15-46	112	112	B190T8-A		4/15/2004															
299-W15-46	115	117.5	B191Y7		4/19/2004	0.69	pCi/g	U		0.69	0.58	pCi/g	U		0.58	0.87	pCi/g	U		0.87
299-W15-46	117	119.5	B17N60		4/21/2004	-0.045	pCi/g	U		0.095	-0.025	pCi/g	U		0.11	0.051	pCi/g	U		0.24
299-W15-46	119.5	122	B17N63		5/3/2004	0.268	pCi/g			0.081	0	pCi/g	U		0.091	-0.182	pCi/g	U		0.22
299-W15-46	174	176.5	B17N67		8/23/2004	0	pCi/g	U		0.012	0.001	pCi/g	U		0.012	-0.006	pCi/g	U		0.035
299-W15-46	184	186.5	B17N70		8/25/2004	0.047	pCi/g			0.013	-0.004	pCi/g	U		0.011	0.008	pCi/g	U		0.039
299-W15-46	224	226.5	B17N73		9/9/2004	0	pCi/g	U		0.013	-0.008	pCi/g	U		0.014	-0.018	pCi/g	U		0.036
299-W15-46	226.5	229	B17NL5		9/9/2004	-0.005	pCi/g	U		0.015	0.002	pCi/g	U		0.015	0.014	pCi/g	U		0.044
			B17MM8	EB	9/23/2003	0.193	pCi/L	U		11	-2.45	pCi/L	U		11	-0.073	pCi/L	U		30
			B17MM9	EB	9/23/2003															
					TQL (pCi/g)					0.1					0.05					N/A

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Table B-3. Radiochemical Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (22 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Europium-154 (15585-10-1)					Europium-155 (14391-16-3)					Gross alpha (12587-46-1)				
						GEA					GEA					900				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-46	47.5	50	B17N46		10/20/2003	784	pCi/g	U			280	pCi/g	U							
299-W15-46	47.5	50	B17N46-A		10/20/2003	50	pCi/g	U	50		70	pCi/g	U	70						
299-W15-46	63.5	66	B17TM6		10/29/2003	1020	pCi/g	U			788	pCi/g	U							
299-W15-46	63.5	66	B17TM6-A		10/29/2003	40	pCi/g	U	40		31	pCi/g	U	31						
299-W15-46	90	92.5	B17N52		3/23/2004	1	pCi/g	U	1		1.1	pCi/g	U	1.1	4600	pCi/g				24
299-W15-46	109.5	112	B17N57		4/8/2004	1.6	pCi/g	U	1.6		13	pCi/g	U	13						
299-W15-46	109.5	112	B18XR8		4/8/2004	44	pCi/g				20.6	pCi/g								
299-W15-46	112	112	B190T8-A		4/15/2004															
299-W15-46	115	117.5	B191Y7		4/19/2004	1.3	pCi/g	U	1.3		4.1	pCi/g	U	4.1	77000	pCi/g				170
299-W15-46	117	119.5	B17N60		4/21/2004	0.016	pCi/g	U	0.33	-0.048		pCi/g	U	0.28						
299-W15-46	119.5	122	B17N63		5/3/2004	0.121	pCi/g	U	0.27	0.1		pCi/g	U	0.25						
299-W15-46	174	176.5	B17N67		8/23/2004	-0.019	pCi/g	U	0.036	0.057		pCi/g		0.046						
299-W15-46	184	186.5	B17N70		8/25/2004	0.008	pCi/g	U	0.038	-0.006		pCi/g	U	0.067						
299-W15-46	224	226.5	B17N73		9/9/2004	-0.027	pCi/g	U	0.043	0.067		pCi/g		0.051						
299-W15-46	226.5	229	B17NL5		9/9/2004	0.018	pCi/g	U	0.052	0.05		pCi/g	U	0.066						
			B17MM8	EB	9/23/2003	1.98	pCi/L	U	29	-8.24		pCi/L	U	32						
			B17MM9	EB	9/23/2003															
					TQL (pCi/g)				N/A					N/A						N/A

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Table B-3. Radiochemical Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (22 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Gross alpha (12587-46-1)					Gross beta (12587-47-2)					Gross beta (12587-47-2)				
						GPC					900					GPC				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-46	47.5	50	B17N46		10/20/2003	148000	pCi/g									27200	pCi/g			
299-W15-46	47.5	50	B17N46-A		10/20/2003															
299-W15-46	63.5	66	B17TM6		10/29/2003	145000	pCi/g									10800	pCi/g			
299-W15-46	63.5	66	B17TM6-A		10/29/2003															
299-W15-46	90	92.5	B17N52		3/23/2004					1960	pCi/g			69						
299-W15-46	109.5	112	B17N57		4/8/2004															
299-W15-46	109.5	112	B18XR8		4/8/2004	296000	pCi/g									54800	pCi/g			
299-W15-46	112	112	B190T8-A		4/15/2004															
299-W15-46	115	117.5	B191Y7		4/19/2004					1810	pCi/g			520						
299-W15-46	117	119.5	B17N60		4/21/2004	1400	pCi/g									240	pCi/g			9.1
299-W15-46	119.5	122	B17N63		5/3/2004	220	pCi/g									25	pCi/g		J	8.7
299-W15-46	174	176.5	B17N67		8/23/2004	2.1	pCi/g									2.1	pCi/g			0.55
299-W15-46	184	186.5	B17N70		8/25/2004	2.1	pCi/g									1	pCi/g			0.33
299-W15-46	224	226.5	B17N73		9/9/2004	2.6	pCi/g									0.63	pCi/g			0.62
299-W15-46	226.5	229	B17NL5		9/9/2004	1.8	pCi/g									0.8	pCi/g			0.6
			B17MM8	EB	9/23/2003	0.81	pCi/L									2.9	pCi/L			1.1
			B17MM9	EB	9/23/2003															
					TQL (pCi/g)					N/A				N/A						N/A

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Table B-3. Radiochemical Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (22 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Iodine-129 (15046-84-1)				Lead-212 (15092-94-1)				Lead-214 (15067-28-4)					
						Sep/LEPS				GEA				GEA					
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003														
299-W15-46	47.5	50	B17N46-A		10/20/2003	-0.393	pCi/g	U		21									
299-W15-46	63.5	66	B17TM6		10/29/2003														
299-W15-46	63.5	66	B17TM6-A		10/29/2003	-7.26	pCi/g	U		43									
299-W15-46	90	92.5	B17N52		3/23/2004														
299-W15-46	109.5	112	B17N57		4/8/2004	-27.5	pCi/g	U		71									
299-W15-46	109.5	112	B18XR8		4/8/2004														
299-W15-46	112	112	B190T8-A		4/15/2004														
299-W15-46	115	117.5	B191Y7		4/19/2004	-9.74	pCi/g	U		44									
299-W15-46	117	119.5	B17N60		4/21/2004														
299-W15-46	119.5	122	B17N63		5/3/2004														
299-W15-46	174	176.5	B17N67		8/23/2004														
299-W15-46	184	186.5	B17N70		8/25/2004														
299-W15-46	224	226.5	B17N73		9/9/2004														
299-W15-46	226.5	229	B17NL5		9/9/2004														
			B17MM8	EB	9/23/2003					-6.39	pCi/L	U		19	20.5	pCi/L	U		28
			B17MM9	EB	9/23/2003	-0.408	pCi/L	U		3.7									
					TQL (pCi/g)					N/A				N/A					N/A

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Table B-3. Radiochemical Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (22 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Neptunium-237 (13994-20-2)					Neptunium-237 (13994-20-2)					Nickel-63 (13981-37-8)								
						IX/Prec/AEA					LX/Plate/AEA					LSC								
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA				
299-W15-46	47.5	50	B17N46		10/20/2003						504	pCi/g	U											
299-W15-46	47.5	50	B17N46-A		10/20/2003													308	pCi/g	U				930
299-W15-46	63.5	66	B17TM6		10/29/2003						337	pCi/g	U											
299-W15-46	63.5	66	B17TM6-A		10/29/2003													378	pCi/g	U				930
299-W15-46	90	92.5	B17N52		3/23/2004																			
299-W15-46	109.5	112	B17N57		4/8/2004						0	pCi/g	U		170	1540	pCi/g	U						2300
299-W15-46	109.5	112	B18XR8		4/8/2004						28.9	pCi/g												
299-W15-46	112	112	B190T8-A		4/15/2004																			
299-W15-46	115	117.5	B191Y7		4/19/2004						24	pCi/g	U		72	2360	pCi/g							1100
299-W15-46	117	119.5	B17N60		4/21/2004	0.24	pCi/g	X		0.075														
299-W15-46	119.5	122	B17N63		5/3/2004	2.9	pCi/g	X	J	0.073														
299-W15-46	174	176.5	B17N67		8/23/2004	0.005	pCi/g	X		0.002														
299-W15-46	184	186.5	B17N70		8/25/2004	-0.003	pCi/g	U		0.012														
299-W15-46	224	226.5	B17N73		9/9/2004	0.001	pCi/g	U		0.007														
299-W15-46	226.5	229	B17NL5		9/9/2004	0.002	pCi/g	U		0.01														
			B17MM8	EB	9/23/2003	0.004	pCi/L	U		0.01														
			B17MM9	EB	9/23/2003													0.331	pCi/L	U				3
					TQL (pCi/g)						1				1									N/A

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Table B-3. Radiochemical Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (22 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Niobium-94 (14681-63-1)					Plutonium-238 (13981-16-3)					Plutonium-238 (13981-16-3)						
						GEA					IX/Prec/AEA					Sep/Plate/AEA						
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA		
299-W15-46	47.5	50	B17N46		10/20/2003											10600	pCi/g	U				
299-W15-46	47.5	50	B17N46-A		10/20/2003											19200	pCi/g	U				
299-W15-46	63.5	66	B17TM6		10/29/2003																	
299-W15-46	63.5	66	B17TM6-A		10/29/2003											1.9	pCi/g	U				2.6
299-W15-46	90	92.5	B17N52		3/23/2004																	
299-W15-46	109.5	112	B17N57		4/8/2004																	
299-W15-46	109.5	112	B18XR8		4/8/2004											657	pCi/g					
299-W15-46	112	112	B190T8-A		4/15/2004											1480	pCi/g	U				
299-W15-46	115	117.5	B191Y7		4/19/2004											72.9	pCi/g	U				140
299-W15-46	117	119.5	B17N60		4/21/2004					5.8	pCi/g				0.23							
299-W15-46	119.5	122	B17N63		5/3/2004					1.6	pCi/g		J		0.25							
299-W15-46	174	176.5	B17N67		8/23/2004					-0.004	pCi/g	U			0.062							
299-W15-46	184	186.5	B17N70		8/25/2004					0.006	pCi/g	U			0.065							
299-W15-46	224	226.5	B17N73		9/9/2004					0.025	pCi/g	U			0.054							
299-W15-46	226.5	229	B17NL5		9/9/2004					0.002	pCi/g	U			0.047							
			B17MM8	EB	9/23/2003	1.51	pCi/L	U		10	-0.052	pCi/L	U		0.23							
			B17MM9	EB	9/23/2003																	
					TQL (pCi/g)				N/A					1								1

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Table B-3. Radiochemical Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (22 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Protactinium-231 (14331-85-2)					Radium-226 (13982-63-3)				Radium-228 (15262-20-1)				
						IX/Plate/AEA					GEA				GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003														
299-W15-46	47.5	50	B17N46-A		10/20/2003	0	pCi/g	U		13	43	pCi/g	U		43	66	pCi/g	U	66
299-W15-46	63.5	66	B17TM6		10/29/2003														
299-W15-46	63.5	66	B17TM6-A		10/29/2003	12.9	pCi/g			12	35	pCi/g	U		35	58	pCi/g	U	58
299-W15-46	90	92.5	B17N52		3/23/2004						0.82	pCi/g	U		0.82	2.4	pCi/g	U	2.4
299-W15-46	109.5	112	B17N57		4/8/2004	0.953	pCi/g	U		13	0.778	pCi/g	U		0.92	2.79	pCi/g		2.5
299-W15-46	109.5	112	B18XR8		4/8/2004														
299-W15-46	112	112	B190T8-A		4/15/2004														
299-W15-46	115	117.5	B191Y7		4/19/2004	7.4	pCi/g	U		10	0.736	pCi/g			0.7	3	pCi/g	U	3
299-W15-46	117	119.5	B17N60		4/21/2004														
299-W15-46	119.5	122	B17N63		5/3/2004														
299-W15-46	174	176.5	B17N67		8/23/2004														
299-W15-46	184	186.5	B17N70		8/25/2004														
299-W15-46	224	226.5	B17N73		9/9/2004														
299-W15-46	226.5	229	B17NL5		9/9/2004														
			B17MM8	EB	9/23/2003						52.7	pCi/L			30	23.4	pCi/L	U	38
			B17MM9	EB	9/23/2003	0.103	pCi/L			0.088									
			TQL (pCi/g)				N/A				N/A				N/A				

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Table B-3. Radiochemical Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (22 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Ruthenium-103 (13968-53-1)					Ruthenium-106 (13967-48-1)					Selenium-79 (15758-45-9)					Selenium-79 (15758-45-9)				
						GEA					GEA					IX/LSC					Sep/LSC				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-46	47.5	50	B17N46		10/20/2003																				
299-W15-46	47.5	50	B17N46-A		10/20/2003											-21.3	pCi/g	U		24					
299-W15-46	63.5	66	B17TM6		10/29/2003																				
299-W15-46	63.5	66	B17TM6-A		10/29/2003											-69.1	pCi/g	U		79					
299-W15-46	90	92.5	B17N52		3/23/2004																				
299-W15-46	109.5	112	B17N57		4/8/2004											-34.2	pCi/g	U		110					
299-W15-46	109.5	112	B18XR8		4/8/2004																				
299-W15-46	112	112	B190T8-A		4/15/2004																				
299-W15-46	115	117.5	B191Y7		4/19/2004											-42.2	pCi/g	U		60					
299-W15-46	117	119.5	B17N60		4/21/2004																				
299-W15-46	119.5	122	B17N63		5/3/2004																				
299-W15-46	174	176.5	B17N67		8/23/2004																				
299-W15-46	184	186.5	B17N70		8/25/2004																				
299-W15-46	224	226.5	B17N73		9/9/2004																				
299-W15-46	226.5	229	B17NL5		9/9/2004																				
			B17MM8	EB	9/23/2003	-4.49	pCi/L	U		13	-14.5	pCi/L	U	100											
			B17MM9	EB	9/23/2003																-3.99	pCi/L	U		23
					TQL (pCi/g)					N/A					N/A					N/A					

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Table B-3. Radiochemical Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (22 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Uranium-234 (13966-29-5)					Uranium-235 (15117-96-1)					Uranium-235 (15117-96-1)							
						ICP/MS					GEA					ICP/MS							
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA			
299-W15-46	47.5	50	B17N46		10/20/2003	11.8	pCi/g									0.0225	pCi/g						
299-W15-46	47.5	50	B17N46-A		10/20/2003																		
299-W15-46	63.5	66	B17TM6		10/29/2003	2.08	pCi/g									0.0475	pCi/g						
299-W15-46	63.5	66	B17TM6-A		10/29/2003																		
299-W15-46	90	92.5	B17N52		3/23/2004					1.3	pCi/g	U		1.3									
299-W15-46	109.5	112	B17N57		4/8/2004					3	pCi/g	U		3									
299-W15-46	109.5	112	B18XR8		4/8/2004	0.422	pCi/g									0.0147	pCi/g						
299-W15-46	115	117.5	B191Y7		4/19/2004					1.2	pCi/g	U		1.2									
299-W15-46	117	119.5	B17N60		4/21/2004																		
299-W15-46	119.5	122	B17N63		5/3/2004																		
299-W15-46	119.5	122	B17N65		5/3/2004																		
299-W15-46	174	176.5	B17N67		8/23/2004																		
299-W15-46	174	176.5	B17N69		8/23/2004																		
299-W15-46	184	186.5	B17N70		8/25/2004																		
299-W15-46	224	226.5	B17N73		9/9/2004																		
299-W15-46	226.5	229	B17NL5		9/9/2004																		
299-W15-46	226.5	229	B17NL7		9/9/2004																		
			B17MM8	EB	9/23/2003					-10.9	pCi/L	U		69									
			B17MM9	EB	9/23/2003																		
					TQL (pCi/g)																		

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,2,4-Trichlorobenzene (120-82-1)				1,2,4-Trimethylbenzene (95-63-6)				1,2-Dichlorobenzene (95-50-1)			
							8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003	222-S	960	µg/kg	U									
299-W15-46	63.5	66	B17TM6		10/29/2003	222-S	160000	µg/kg	U									
299-W15-46	90	92.5	B17N52		3/23/2004	RLNP	350	µg/kg	U					350	µg/kg	U		
299-W15-46	109.5	112	B18XR8		4/8/2004	222-S	960	µg/kg	U									
299-W15-46	109.5	112	B18XW3		4/8/2004	222-S												
299-W15-46	115	117.5	B191Y7		4/19/2004	RLNP	330	µg/kg	U	R				330	µg/kg	U	R	
299-W15-46	117	119.5	B17N60		4/21/2004	WSCF	310	µg/kg	U		130	µg/kg	U	380	µg/kg	U		
299-W15-46	117	119.5	B17N64		4/21/2004	222-S												
299-W15-46	119.5	122	B17N63		5/3/2004	WSCF	310	µg/kg	U		130	µg/kg	U	380	µg/kg	U		
299-W15-46	119.5	122	B17N65		5/3/2004	RLNP	380	µg/kg	U					380	µg/kg	U		
299-W15-46	174	176.5	B17N67		8/23/2004	WSCF	300	µg/kg	U		120	µg/kg	U	370	µg/kg	U		
299-W15-46	184	186.5	B17N70		8/25/2004	WSCF	300	µg/kg	U		120	µg/kg	U	370	µg/kg	U		
299-W15-46	224	226.5	B17N73		9/9/2004	WSCF	310	µg/kg	U		130	µg/kg	U	380	µg/kg	U		
299-W15-46	226.5	229	B17NL5		9/9/2004	WSCF	330	µg/kg	U		140	µg/kg	U	410	µg/kg	U		
			B17MM8	EB	9/23/2003	WSCF	3.1	µg/L	U		1.9	µg/L	U	4.3	µg/L	U		
						TQL (µg/kg)			N/A				N/A					N/A

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,3-Dichlorobenzene (541-73-1)				1,4-Dichlorobenzene (106-46-7)				2,4,5-Trichlorophenol (95-95-4)				2,4,6-Trichlorophenol (88-06-2)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003					960	µg/kg	U									
299-W15-46	63.5	66	B17TM6		10/29/2003					160000	µg/kg	U									
299-W15-46	90	92.5	B17N52		3/23/2004	350	µg/kg	U		350	µg/kg	U		870	µg/kg	U		350	µg/kg	U	
299-W15-46	109.5	112	B18XR8		4/8/2004					960	µg/kg	U									
299-W15-46	109.5	112	B18XW3		4/8/2004																
299-W15-46	115	117.5	B191Y7		4/19/2004	330	µg/kg	U	R	330	µg/kg	U	R	840	µg/kg	U	R	330	µg/kg	U	R
299-W15-46	117	119.5	B17N60		4/21/2004	340	µg/kg	U		330	µg/kg	U		77	µg/kg	U		70	µg/kg	U	
299-W15-46	117	119.5	B17N64		4/21/2004																
299-W15-46	119.5	122	B17N63		5/3/2004	340	µg/kg	U		330	µg/kg	U		77	µg/kg	U		70	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004	380	µg/kg	U		380	µg/kg	U		940	µg/kg	U		380	µg/kg	U	
299-W15-46	174	176.5	B17N67		8/23/2004	330	µg/kg	U		320	µg/kg	U		75	µg/kg	U		68	µg/kg	U	
299-W15-46	184	186.5	B17N70		8/25/2004	330	µg/kg	U		320	µg/kg	U		75	µg/kg	U		68	µg/kg	U	
299-W15-46	224	226.5	B17N73		9/9/2004	340	µg/kg	U		330	µg/kg	U		78	µg/kg	U		71	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	360	µg/kg	U		350	µg/kg	U		83	µg/kg	U		75	µg/kg	U	
			B17MM8	EB	9/23/2003	5.4	µg/L	U		5.2	µg/L	U		2	µg/L	U		2.5	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2,4-Dichlorophenol (120-83-2)				2,4-Dimethylphenol (105-67-9)				2,4-Dinitrophenol (51-28-5)				2,4-Dinitrotoluene (121-14-2)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003												960	µg/kg	U		
299-W15-46	63.5	66	B17TM6		10/29/2003												160000	µg/kg	U		
299-W15-46	90	92.5	B17N52		3/23/2004	350	µg/kg	U		350	µg/kg	U		870	µg/kg	U	350	µg/kg	U		
299-W15-46	109.5	112	B18XR8		4/8/2004												960	µg/kg	U		
299-W15-46	109.5	112	B18XW3		4/8/2004																
299-W15-46	115	117.5	B191Y7		4/19/2004	330	µg/kg	U	R	330	µg/kg	U	R	840	µg/kg	U	R	330	µg/kg	U	R
299-W15-46	117	119.5	B17N60		4/21/2004	84	µg/kg	U		70	µg/kg	U		700	µg/kg	U		70	µg/kg	U	
299-W15-46	117	119.5	B17N64		4/21/2004																
299-W15-46	119.5	122	B17N63		5/3/2004	84	µg/kg	U		70	µg/kg	U		700	µg/kg	U		70	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004	380	µg/kg	U		380	µg/kg	U		940	µg/kg	U		380	µg/kg	U	
299-W15-46	174	176.5	B17N67		8/23/2004	82	µg/kg	U		68	µg/kg	U		680	µg/kg	U		68	µg/kg	U	
299-W15-46	184	186.5	B17N70		8/25/2004	82	µg/kg	U		68	µg/kg	U		680	µg/kg	U		68	µg/kg	U	
299-W15-46	224	226.5	B17N73		9/9/2004	85	µg/kg	U		71	µg/kg	U		710	µg/kg	U		71	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	90	µg/kg	U		75	µg/kg	U		750	µg/kg	U		75	µg/kg	U	
			B17MM8	EB	9/23/2003	1.4	µg/L	U		4.4	µg/L	U		3.4	µg/L	U		1.9	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2,6-Dinitrotoluene (606-20-2)				2,6-di-tert-Butyl-p- benzoquinone (719-22-2)				2-Chloronaphthalene (91-58-7)				2-Chlorophenol (95-57-8)			
						8270				1625				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003													960	µg/kg	U	
299-W15-46	63.5	66	B17TM6		10/29/2003													160000	µg/kg	U	
299-W15-46	90	92.5	B17N52		3/23/2004	350	µg/kg	U						350	µg/kg	U		350	µg/kg	U	
299-W15-46	109.5	112	B18XR8		4/8/2004													960	µg/kg	U	
299-W15-46	109.5	112	B18XW3		4/8/2004					4.5	µg/kg										
299-W15-46	115	117.5	B191Y7		4/19/2004	330	µg/kg	U	R					330	µg/kg	U	R	330	µg/kg	U	R
299-W15-46	117	119.5	B17N60		4/21/2004	70	µg/kg	U						70	µg/kg	U		150	µg/kg	U	
299-W15-46	117	119.5	B17N64		4/21/2004					6.2	µg/kg										
299-W15-46	119.5	122	B17N63		5/3/2004	70	µg/kg	U						70	µg/kg	U		150	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004	380	µg/kg	U						380	µg/kg	U		380	µg/kg	U	
299-W15-46	174	176.5	B17N67		8/23/2004	68	µg/kg	U						68	µg/kg	U		150	µg/kg	U	
299-W15-46	184	186.5	B17N70		8/25/2004	68	µg/kg	U						68	µg/kg	U		150	µg/kg	U	
299-W15-46	224	226.5	B17N73		9/9/2004	71	µg/kg	U						71	µg/kg	U		160	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	75	µg/kg	U						75	µg/kg	U		170	µg/kg	U	
			B17MM8	EB	9/23/2003	2.3	µg/L	U						2.4	µg/L	U		1.8	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	3,3'-Dichlorobenzidine (91-94-1)				3+4 Methylphenol (cresol, m+p) (65794-96-9)				3-Nitroaniline (99-09-2)				4,6-Dinitro-2- methylphenol (534-52-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003					960	µg/kg	U									
299-W15-46	63.5	66	B17TM6		10/29/2003					160000	µg/kg	U									
299-W15-46	90	92.5	B17N52		3/23/2004	350	µg/kg	U					870	µg/kg	U		870	µg/kg	U		
299-W15-46	109.5	112	B18XR8		4/8/2004					960	µg/kg	U									
299-W15-46	109.5	112	B18XW3		4/8/2004																
299-W15-46	115	117.5	B191Y7		4/19/2004	330	µg/kg	U	R				840	µg/kg	U	R	840	µg/kg	U	R	
299-W15-46	117	119.5	B17N60		4/21/2004	84	µg/kg	U		120	µg/kg	U	70	µg/kg	U		700	µg/kg	U		
299-W15-46	117	119.5	B17N64		4/21/2004																
299-W15-46	119.5	122	B17N63		5/3/2004	84	µg/kg	U		120	µg/kg	U	70	µg/kg	U		700	µg/kg	U		
299-W15-46	119.5	122	B17N65		5/3/2004	380	µg/kg	U					940	µg/kg	U		940	µg/kg	U		
299-W15-46	174	176.5	B17N67		8/23/2004	82	µg/kg	U		120	µg/kg	U	68	µg/kg	U		680	µg/kg	U		
299-W15-46	184	186.5	B17N70		8/25/2004	82	µg/kg	U		120	µg/kg	U	68	µg/kg	U		680	µg/kg	U		
299-W15-46	224	226.5	B17N73		9/9/2004	85	µg/kg	U		120	µg/kg	U	71	µg/kg	U		710	µg/kg	U		
299-W15-46	226.5	229	B17NL5		9/9/2004	90	µg/kg	U		130	µg/kg	U	75	µg/kg	U		750	µg/kg	U		
			B17MM8	EB	9/23/2003	4.2	µg/L	U		3.3	µg/L	U	4.6	µg/L	U		1.8	µg/L	U		
					TQL (µg/kg)	N/A				N/A				N/A							

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	4-Bromophenylphenyl ether (101-55-3)				4-Chloro-3-methylphenol (59-50-7)				4-Chloroaniline (106-47-8)				4-Chlorophenylphenyl ether (7005-72-3)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003					960	µg/kg	U									
299-W15-46	63.5	66	B17TM6		10/29/2003					160000	µg/kg	U									
299-W15-46	90	92.5	B17N52		3/23/2004	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-46	109.5	112	B18XR8		4/8/2004					960	µg/kg	U									
299-W15-46	109.5	112	B18XW3		4/8/2004																
299-W15-46	115	117.5	B191Y7		4/19/2004	330	µg/kg	U	R	330	µg/kg	U	R	330	µg/kg	U	R	330	µg/kg	U	R
299-W15-46	117	119.5	B17N60		4/21/2004	70	µg/kg	U		70	µg/kg	U		98	µg/kg	U		70	µg/kg	U	
299-W15-46	117	119.5	B17N64		4/21/2004																
299-W15-46	119.5	122	B17N63		5/3/2004	70	µg/kg	U		70	µg/kg	U		98	µg/kg	U		70	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-46	174	176.5	B17N67		8/23/2004	68	µg/kg	U		68	µg/kg	U		96	µg/kg	U		68	µg/kg	U	
299-W15-46	184	186.5	B17N70		8/25/2004	68	µg/kg	U		68	µg/kg	U		96	µg/kg	U		68	µg/kg	U	
299-W15-46	224	226.5	B17N73		9/9/2004	71	µg/kg	U		71	µg/kg	U		99	µg/kg	U		71	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	75	µg/kg	U		75	µg/kg	U		110	µg/kg	U		75	µg/kg	U	
			B17MM8	EB	9/23/2003	2	µg/L	U		1.3	µg/L	U		7.4	µg/L	U		2.3	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	4-Methylphenol (cresol, p) (106-44-5)				4-Nitroaniline (100-01-6)				4-Nitrophenol (100-02-7)				Acenaphthene (83-32-9)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003									960	µg/kg	U		960	µg/kg	U	
299-W15-46	63.5	66	B17TM6		10/29/2003									160000	µg/kg	U		160000	µg/kg	U	
299-W15-46	90	92.5	B17N52		3/23/2004	350	µg/kg	U		870	µg/kg	U		870	µg/kg	U		350	µg/kg	U	
299-W15-46	109.5	112	B18XR8		4/8/2004	960	µg/kg	U						960	µg/kg	U		960	µg/kg	U	
299-W15-46	109.5	112	B18XW3		4/8/2004																
299-W15-46	115	117.5	B191Y7		4/19/2004	330	µg/kg	U	R	840	µg/kg	U	R	840	µg/kg	U	R	330	µg/kg	U	R
299-W15-46	117	119.5	B17N60		4/21/2004					260	µg/kg	U		680	µg/kg	U		70	µg/kg	U	
299-W15-46	117	119.5	B17N64		4/21/2004																
299-W15-46	119.5	122	B17N63		5/3/2004					260	µg/kg	U		680	µg/kg	U		70	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004	380	µg/kg	U		940	µg/kg	U		940	µg/kg	U		380	µg/kg	U	
299-W15-46	174	176.5	B17N67		8/23/2004					250	µg/kg	U		660	µg/kg	U		68	µg/kg	U	
299-W15-46	184	186.5	B17N70		8/25/2004					250	µg/kg	U		660	µg/kg	U		68	µg/kg	U	
299-W15-46	224	226.5	B17N73		9/9/2004					260	µg/kg	U		690	µg/kg	U		71	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004					280	µg/kg	U		730	µg/kg	U		75	µg/kg	U	
			B17MM8	EB	9/23/2003					3	µg/L	U		1.4	µg/L	U		2.5	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Acenaphthylene (208-96-8)				Anthracene (120-12-7)				Benzo(a)anthracene (56-55-3)				Benzo(a)pyrene (50-32-8)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	90	92.5	B17N52		3/23/2004	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-46	109.5	112	B18XR8		4/8/2004																
299-W15-46	109.5	112	B18XW3		4/8/2004																
299-W15-46	115	117.5	B191Y7		4/19/2004	330	µg/kg	U	R	330	µg/kg	U	R	330	µg/kg	U	R	330	µg/kg	U	R
299-W15-46	117	119.5	B17N60		4/21/2004	84	µg/kg	U		70	µg/kg	U		70	µg/kg	U		70	µg/kg	U	
299-W15-46	117	119.5	B17N64		4/21/2004																
299-W15-46	119.5	122	B17N63		5/3/2004	84	µg/kg	U		70	µg/kg	U		70	µg/kg	U		70	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-46	174	176.5	B17N67		8/23/2004	82	µg/kg	U		68	µg/kg	U		68	µg/kg	U		68	µg/kg	U	
299-W15-46	184	186.5	B17N70		8/25/2004	82	µg/kg	U		68	µg/kg	U		68	µg/kg	U		68	µg/kg	U	
299-W15-46	224	226.5	B17N73		9/9/2004	85	µg/kg	U		71	µg/kg	U		71	µg/kg	U		71	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	90	µg/kg	U		75	µg/kg	U		75	µg/kg	U		75	µg/kg	U	
			B17MM8	EB	9/23/2003	2.4	µg/L	U		2.1	µg/L	U		2.2	µg/L	U		2.2	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Benzo(b)fluoranthene (205-99-2)				Benzo(ghi)perylene (191-24-2)				Benzo(k)fluoranthene (207-08-9)				Bis(2-chloro-1-methylethyl)ether (108-60-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	90	92.5	B17N52		3/23/2004	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-46	109.5	112	B18XR8		4/8/2004																
299-W15-46	109.5	112	B18XW3		4/8/2004																
299-W15-46	115	117.5	B191Y7		4/19/2004	330	µg/kg	U	R	330	µg/kg	U	R	330	µg/kg	U	R	330	µg/kg	U	R
299-W15-46	117	119.5	B17N60		4/21/2004	70	µg/kg	U		70	µg/kg	U		70	µg/kg	U		270	µg/kg	U	
299-W15-46	117	119.5	B17N64		4/21/2004																
299-W15-46	119.5	122	B17N63		5/3/2004	70	µg/kg	U		70	µg/kg	U		70	µg/kg	U		270	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-46	174	176.5	B17N67		8/23/2004	68	µg/kg	U		68	µg/kg	U		68	µg/kg	U		260	µg/kg	U	
299-W15-46	184	186.5	B17N70		8/25/2004	68	µg/kg	U		68	µg/kg	U		68	µg/kg	U		260	µg/kg	U	
299-W15-46	224	226.5	B17N73		9/9/2004	71	µg/kg	U		71	µg/kg	U		71	µg/kg	U		270	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	75	µg/kg	U		75	µg/kg	U		75	µg/kg	U		290	µg/kg	U	
			B17MM8	EB	9/23/2003	1.8	µg/L	U		2.6	µg/L	U		2.9	µg/L	U		2.2	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Bis(2-Chloroethoxy)methane (111-91-1)			
						8270			
						Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003				
299-W15-46	63.5	66	B17TM6		10/29/2003				
299-W15-46	90	92.5	B17N52		3/23/2004	350	µg/kg	U	
299-W15-46	109.5	112	B18XR8		4/8/2004				
299-W15-46	109.5	112	B18XW3		4/8/2004				
299-W15-46	115	117.5	B191Y7		4/19/2004	330	µg/kg	U	R
299-W15-46	117	119.5	B17N60		4/21/2004	120	µg/kg	U	
299-W15-46	117	119.5	B17N64		4/21/2004				
299-W15-46	119.5	122	B17N63		5/3/2004	120	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004	380	µg/kg	U	
299-W15-46	174	176.5	B17N67		8/23/2004	120	µg/kg	U	
299-W15-46	184	186.5	B17N70		8/25/2004	120	µg/kg	U	
299-W15-46	224	226.5	B17N73		9/9/2004	120	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	130	µg/kg	U	
			B17MM8	EB	9/23/2003	2.1	µg/L	U	
					TQL (µg/kg)	N/A			

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Bis(2-chloroethyl) ether (111-44-4)				Bis(2-ethylhexyl) phthalate (117-81-7)				Butylbenzylphthalate (85-68-7)			
							8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003	222-S												
299-W15-46	63.5	66	B17TM6		10/29/2003	222-S												
299-W15-46	90	92.5	B17N52		3/23/2004	RLNP	350	µg/kg	U					350	µg/kg	U		
299-W15-46	109.5	112	B18XR8		4/8/2004	222-S												
299-W15-46	115	117.5	B191Y7		4/19/2004	RLNP	330	µg/kg	U	R				330	µg/kg	U	R	
299-W15-46	117	119.5	B17N60		4/21/2004	WSCF	260	µg/kg	U					590	µg/kg	U		
299-W15-46	119.5	122	B17N63		5/3/2004	WSCF	260	µg/kg	U					590	µg/kg	U		
299-W15-46	119.5	122	B17N65		5/3/2004	RLNP	380	µg/kg	U					380	µg/kg	U		
299-W15-46	174	176.5	B17N67		8/23/2004	WSCF	250	µg/kg	U					580	µg/kg	U		
299-W15-46	184	186.5	B17N70		8/25/2004	WSCF	250	µg/kg	U					570	µg/kg	U		
299-W15-46	224	226.5	B17N73		9/9/2004	WSCF	260	µg/kg	U					590	µg/kg	U		
299-W15-46	226.5	229	B17NL5		9/9/2004	WSCF	280	µg/kg	U					630	µg/kg	U		
			B17MM8	EB	9/23/2003	WSCF	3.5	µg/L	U					2.7	µg/L	U		
							TQL (µg/kg)				N/A				N/A			

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbazole (86-74-8)				Chrysene (218-01-9)				Cyclohexanone (108-94-1)				Dibenz[a,h]anthracene (53-70-3)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	90	92.5	B17N52		3/23/2004	350	µg/kg	U		350	µg/kg	U					350	µg/kg	U		
299-W15-46	109.5	112	B18XR8		4/8/2004																
299-W15-46	115	117.5	B191Y7		4/19/2004	330	µg/kg	U	R	330	µg/kg	U	R				330	µg/kg	U	R	
299-W15-46	117	119.5	B17N60		4/21/2004	84	µg/kg	U		70	µg/kg	U		350	µg/kg	U	70	µg/kg	U		
299-W15-46	119.5	122	B17N63		5/3/2004	84	µg/kg	U		70	µg/kg	U		350	µg/kg	U	70	µg/kg	U		
299-W15-46	119.5	122	B17N65		5/3/2004	380	µg/kg	U		380	µg/kg	U					380	µg/kg	U		
299-W15-46	174	176.5	B17N67		8/23/2004	82	µg/kg	U		68	µg/kg	U		340	µg/kg	U	68	µg/kg	U		
299-W15-46	184	186.5	B17N70		8/25/2004	82	µg/kg	U		68	µg/kg	U		340	µg/kg	U	68	µg/kg	U		
299-W15-46	224	226.5	B17N73		9/9/2004	85	µg/kg	U		71	µg/kg	U		350	µg/kg	U	71	µg/kg	U		
299-W15-46	226.5	229	B17NL5		9/9/2004	90	µg/kg	U		75	µg/kg	U		380	µg/kg	U	75	µg/kg	U		
			B17MM8	EB	9/23/2003	1.5	µg/L	U		2.4	µg/L	U		5.2	µg/L	U	2.7	µg/L	U		
					TQL (µg/kg)	N/A				N/A				N/A							

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dibenzofuran (132-64-9)				Diethylphthalate (84-66-2)				Dimethyl phthalate (131-11-3)				Di-n-butylphthalate (84-74-2)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	90	92.5	B17N52		3/23/2004	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-46	109.5	112	B18XR8		4/8/2004																
299-W15-46	115	117.5	B191Y7		4/19/2004	330	µg/kg	U	R	330	µg/kg	U	R	330	µg/kg	U	R	330	µg/kg	U	R
299-W15-46	117	119.5	B17N60		4/21/2004	70	µg/kg	U		200	µg/kg	U		70	µg/kg	U		91	µg/kg	U	
299-W15-46	119.5	122	B17N63		5/3/2004	70	µg/kg	U		200	µg/kg	U		70	µg/kg	U		91	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-46	174	176.5	B17N67		8/23/2004	68	µg/kg	U		190	µg/kg	U		68	µg/kg	U		94	µg/kg	J	
299-W15-46	184	186.5	B17N70		8/25/2004	68	µg/kg	U		190	µg/kg	U		68	µg/kg	U		89	µg/kg	U	
299-W15-46	224	226.5	B17N73		9/9/2004	71	µg/kg	U		230	µg/kg	J		71	µg/kg	U		220	µg/kg	J	
299-W15-46	226.5	229	B17NL5		9/9/2004	75	µg/kg	U		220	µg/kg	J		75	µg/kg	U		120	µg/kg	J	
			B17MM8	EB	9/23/2003	2	µg/L	U		6.5	µg/L	U		2.2	µg/L	U		2.2	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Di-n-octylphthalate (117-84-0)				Fluoranthene (206-44-0)				Fluorene (86-73-7)				Hexachlorobenzene (118-74-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	90	92.5	B17N52		3/23/2004	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-46	109.5	112	B18XR8		4/8/2004																
299-W15-46	115	117.5	B191Y7		4/19/2004	330	µg/kg	U	R	330	µg/kg	U	R	330	µg/kg	U	R	330	µg/kg	U	R
299-W15-46	117	119.5	B17N60		4/21/2004	70	µg/kg	U		70	µg/kg	U		70	µg/kg	U		70	µg/kg	U	
299-W15-46	119.5	122	B17N63		5/3/2004	70	µg/kg	U		70	µg/kg	U		70	µg/kg	U		70	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-46	174	176.5	B17N67		8/23/2004	68	µg/kg	U		68	µg/kg	U		68	µg/kg	U		68	µg/kg	U	
299-W15-46	184	186.5	B17N70		8/25/2004	68	µg/kg	U		68	µg/kg	U		68	µg/kg	U		68	µg/kg	U	
299-W15-46	224	226.5	B17N73		9/9/2004	71	µg/kg	U		71	µg/kg	U		71	µg/kg	U		71	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	75	µg/kg	U		75	µg/kg	U		75	µg/kg	U		75	µg/kg	U	
			B17MM8	EB	9/23/2003	2.6	µg/L	U		2.2	µg/L	U		2.1	µg/L	U		2.2	µg/L	U	
					TQL (µg/kg)		N/A				N/A				N/A					N/A	

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Hexachlorobutadiene (87-68-3)				Hexachlorocyclopentadiene (77-47-4)				Indeno(1,2,3-cd)pyrene (193-39-5)				Isophorone (78-59-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	90	92.5	B17N52		3/23/2004	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-46	109.5	112	B18XR8		4/8/2004																
299-W15-46	115	117.5	B191Y7		4/19/2004	330	µg/kg	U	R	330	µg/kg	U	R	330	µg/kg	U	R	330	µg/kg	U	R
299-W15-46	117	119.5	B17N60		4/21/2004	380	µg/kg	U		330	µg/kg	U		70	µg/kg	U		70	µg/kg	U	
299-W15-46	119.5	122	B17N63		5/3/2004	380	µg/kg	U		330	µg/kg	U		70	µg/kg	U		70	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-46	174	176.5	B17N67		8/23/2004	380	µg/kg	U		320	µg/kg	U		68	µg/kg	U		68	µg/kg	U	
299-W15-46	184	186.5	B17N70		8/25/2004	380	µg/kg	U		320	µg/kg	U		68	µg/kg	U		68	µg/kg	U	
299-W15-46	224	226.5	B17N73		9/9/2004	390	µg/kg	U		330	µg/kg	U		71	µg/kg	U		71	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	410	µg/kg	U		350	µg/kg	U		75	µg/kg	U		75	µg/kg	U	
			B17MM8	EB	9/23/2003	3.7	µg/L	U		8	µg/L	U		2.7	µg/L	U		2	µg/L	U	
					TQL (µg/kg)		N/A				N/A				N/A				N/A		

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Naphthalene (91-20-3)				Nitrobenzene (98-95-3)				n-Nitrosodi- dipropylamine (621-64-7)				n-Nitrosodiphenylamine (86-30-6)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003									960	µg/kg	U					
299-W15-46	63.5	66	B17TM6		10/29/2003									160000	µg/kg	U					
299-W15-46	90	92.5	B17N52		3/23/2004	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-46	109.5	112	B18XR8		4/8/2004									960	µg/kg	U					
299-W15-46	115	117.5	B191Y7		4/19/2004	330	µg/kg	U	R	330	µg/kg	U	R	330	µg/kg	U	R	330	µg/kg	U	R
299-W15-46	117	119.5	B17N60		4/21/2004	300	µg/kg	U		270	µg/kg	U		70	µg/kg	U		70	µg/kg	U	
299-W15-46	119.5	122	B17N63		5/3/2004	300	µg/kg	U		270	µg/kg	U		70	µg/kg	U		70	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-46	174	176.5	B17N67		8/23/2004	290	µg/kg	U		270	µg/kg	U		68	µg/kg	U		68	µg/kg	U	
299-W15-46	184	186.5	B17N70		8/25/2004	290	µg/kg	U		270	µg/kg	U		68	µg/kg	U		68	µg/kg	U	
299-W15-46	224	226.5	B17N73		9/9/2004	300	µg/kg	U		280	µg/kg	U		71	µg/kg	U		71	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	320	µg/kg	U		290	µg/kg	U		75	µg/kg	U		75	µg/kg	U	
			B17MM8	EB	9/23/2003	2.5	µg/L	U		2.1	µg/L	U		1.8	µg/L	U		2.4	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Pentachlorophenol (87-86-5)				Phenanthrene (85-01-8)				Phenol (108-95-2)				Phenyl sulfone (127-63-9)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003	960	µg/kg	U					960	µg/kg	U						
299-W15-46	63.5	66	B17TM6		10/29/2003	160000	µg/kg	U					160000	µg/kg	U						
299-W15-46	90	92.5	B17N52		3/23/2004	870	µg/kg	U		350	µg/kg	U		350	µg/kg	U					
299-W15-46	109.5	112	B18XR8		4/8/2004	960	µg/kg	U					960	µg/kg	U						
299-W15-46	115	117.5	B191Y7		4/19/2004	840	µg/kg	U	R	330	µg/kg	U	R	330	µg/kg	U	R				
299-W15-46	117	119.5	B17N60		4/21/2004	310	µg/kg	U		70	µg/kg	U		100	µg/kg	U					
299-W15-46	119.5	122	B17N63		5/3/2004	310	µg/kg	U		70	µg/kg	U		100	µg/kg	U					
299-W15-46	119.5	122	B17N65		5/3/2004	940	µg/kg	U		380	µg/kg	U		380	µg/kg	U					
299-W15-46	174	176.5	B17N67		8/23/2004	310	µg/kg	UJ		68	µg/kg	U		100	µg/kg	U					
299-W15-46	184	186.5	B17N70		8/25/2004	310	µg/kg	U		68	µg/kg	U		100	µg/kg	U					
299-W15-46	224	226.5	B17N73		9/9/2004	320	µg/kg	U		71	µg/kg	U		110	µg/kg	U					
299-W15-46	226.5	229	B17NL5		9/9/2004	340	µg/kg	U		75	µg/kg	U		110	µg/kg	U		240	µg/kg	J	
			B17MM8	EB	9/23/2003	1.8	µg/L	U		2.3	µg/L	U		1.8	µg/L	U					
					TQL (µg/kg)		N/A				N/A			330					N/A		

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Table B-4. Semi-Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Pyrene (129-00-0)				Tributyl phosphate (126-73-8)			
						8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003	960	µg/kg	U		35000	µg/kg		
299-W15-46	63.5	66	B17TM6		10/29/2003	160000	µg/kg	U		2100000	µg/kg		
299-W15-46	90	92.5	B17N52		3/23/2004	350	µg/kg	U		40633.34	µg/kg	D	
299-W15-46	109.5	112	B18XR8		4/8/2004	960	µg/kg	U		960	µg/kg	U	
299-W15-46	115	117.5	B191Y7		4/19/2004	330	µg/kg	U	R	330	µg/kg	U	R
299-W15-46	117	119.5	B17N60		4/21/2004	70	µg/kg	U		70	µg/kg	U	
299-W15-46	119.5	122	B17N63		5/3/2004	70	µg/kg	U		70	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004	380	µg/kg	U		380	µg/kg	U	
299-W15-46	174	176.5	B17N67		8/23/2004	68	µg/kg	U		68	µg/kg	U	
299-W15-46	184	186.5	B17N70		8/25/2004	68	µg/kg	U		68	µg/kg	U	
299-W15-46	224	226.5	B17N73		9/9/2004	71	µg/kg	U		71	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	75	µg/kg	U		75	µg/kg	U	
			B17MM8	EB	9/23/2003	2.2	µg/L	U		2.6	µg/L	U	
					TQL (µg/kg)		N/A			3300			

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1,2,2-Tetrachloroethane (79-34-5)				1,1,2-Trichloroethane (79-00-5)				1,1-Dichloroethane (75-34-3)			
							8260				8260				8260				8260			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	28.5	29.5	B17RM4		10/13/2003	FIELD																
299-W15-46	47.5	50	B17N46		10/20/2003	222-S	0.76	µg/kg	U										0.87	µg/kg	U	
299-W15-46	49.5	50	B17RM5		10/20/2003	FIELD																
299-W15-46	49.5	50	B17RM6	R	10/20/2003	FIELD																
299-W15-46	49.5	50	B17RM7	R	10/21/2003	FIELD																
299-W15-46	49.5	50	B17RM8		10/21/2003	FIELD																
299-W15-46	49.5	50	B18CX0	R	10/20/2003	FIELD																
299-W15-46	49.5	50	B18CX1	R	10/21/2003	FIELD																
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003	FIELD																
299-W15-46	58.5	59.5	B17RN1		10/27/2003	FIELD																
299-W15-46	58.5	59.5	B17RN2		10/27/2003	FIELD																
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003	FIELD																
299-W15-46	65	66	B17RN3	R	10/31/2003	FIELD																
299-W15-46	65	66	B17RN4	R	10/31/2003	FIELD																
299-W15-46	65	66	B17RN5		10/31/2003	FIELD																
299-W15-46	65	66	B17RN6		10/31/2003	FIELD																
299-W15-46	63.5	66	B17TM6		10/29/2003	222-S	140	µg/kg	U										160	µg/kg	U	
299-W15-46	65	66	B17X85		11/4/2003	FIELD																
299-W15-46	65	66	B17X86	R	11/4/2003	FIELD																
299-W15-46	65	66	B17X87	R	11/4/2003	FIELD																
299-W15-46	65	66	B17X96		3/15/2004	FIELD																
299-W15-46	65	66	B17X97	R	3/15/2004	FIELD																
299-W15-46	66	67	B17X90		11/10/2003	FIELD																
299-W15-46	66	67	B17X91		11/10/2003	FIELD																
299-W15-46	66	67	B17X92	R	11/10/2003	FIELD																
299-W15-46	66	67	B17X93	R	11/10/2003	FIELD																
299-W15-46	66	67.5	B17X98	R	3/15/2004	FIELD																
299-W15-46	81	82	B17XB1		3/22/2004	FIELD																
299-W15-46	81	82	B17XB2	R	3/22/2004	FIELD																
299-W15-46	81	82	B17XB3	R	3/22/2004	FIELD																
299-W15-46	90	92.5	B17N52		3/23/2004	RLNP	5	µg/kg	U	5	µg/kg	U	5	µg/kg	U	5	µg/kg	U	5	µg/kg	U	
299-W15-46	90	92.5	B17N61		3/23/2004	222-S	0.77	µg/kg	U										0.88	µg/kg	U	
299-W15-46	90	92.5	B17XB6		3/23/2004	FIELD																
299-W15-46	90	92.5	B17XB7	R	3/23/2004	FIELD																
299-W15-46	90	92.5	B17XB8	R	3/23/2004	FIELD																
299-W15-46	110	112	B17XB9		4/12/2004	FIELD																

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1,2,2-Tetrachloroethane (79-34-5)				1,1,2-Trichloroethane (79-00-5)				1,1-Dichloroethane (75-34-3)			
							8260				8260				8260				8260			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	110	112	B17XC0	R	4/12/2004	FIELD																
299-W15-46	110	112	B17XC1	R	4/12/2004	FIELD																
299-W15-46	110	112	B17XC3		4/12/2004	FIELD																
299-W15-46	109.5	112	B18XR8		4/8/2004	222-S	130	µg/kg	U											300	µg/kg	U
299-W15-46	109.5	112	B18XW3		4/8/2004	222-S	0.63	µg/kg	U											0.72	µg/kg	U
299-W15-46	115	117.5	B191Y4		4/19/2004	222-S	0.69	µg/kg	U											0.79	µg/kg	U
299-W15-46	115	117.5	B191Y4-A		4/19/2004	222-S	69	µg/kg	U											79	µg/kg	U
299-W15-46	117	119.5	B17N60		4/21/2004	WSCF	2.1	µg/kg	U	2.1	µg/kg	U		2.1	µg/kg	U				2.1	µg/kg	U
299-W15-46	117	119.5	B17N64		4/21/2004	222-S	0.84	µg/kg	U											0.96	µg/kg	U
299-W15-46	117	119.5	B17N64-A		4/21/2004	222-S	0.59	µg/kg	U											0.67	µg/kg	U
299-W15-46	117	119.5	B17N68		4/21/2004	222-S	77	µg/kg	U											89	µg/kg	U
299-W15-46	118	119.5	B17XC4		4/22/2004	FIELD																
299-W15-46	118	119.5	B17XC5		4/22/2004	FIELD																
299-W15-46	118	119.5	B17XC6		4/22/2004	FIELD																
299-W15-46	118	119.5	B17XC7	R	4/22/2004	FIELD																
299-W15-46	118	119.5	B17XC8	R	4/22/2004	FIELD																
299-W15-46	119.5	122	B17N63		5/3/2004	WSCF	2.1	µg/kg	U	2.1	µg/kg	U		2.1	µg/kg	U				2.1	µg/kg	U
299-W15-46	119.5	122	B17XC9		5/3/2004	FIELD																
299-W15-46	119.5	122	B17XD0		5/3/2004	FIELD																
299-W15-46	119.5	122	B17XD1		5/3/2004	FIELD																
299-W15-46	119.5	122	B17XD2	R	5/3/2004	FIELD																
299-W15-46	119.5	122	B17XD3	R	5/3/2004	FIELD																
299-W15-46	119.5	122	B18XT1		5/3/2004	WSCF	11	µg/kg	U	11	µg/kg	U		11	µg/kg	U				11	µg/kg	U
299-W15-46	141	143	B17XD4		8/16/2004	FIELD																
299-W15-46	141	143	B17XD5		8/16/2004	FIELD																
299-W15-46	141	143	B17XD6		8/16/2004	FIELD																
299-W15-46	141	143	B17XD7	R	8/16/2004	FIELD																
299-W15-46	141	143	B17XD8	R	8/16/2004	FIELD																
299-W15-46	159	160	B17XD9		8/19/2004	FIELD																
299-W15-46	159	160	B17XF0	R	8/19/2004	FIELD																
299-W15-46	159	160	B17XF1	R	8/19/2004	FIELD																
299-W15-46	159	160	B17XF2	R	8/19/2004	FIELD																
299-W15-46	159	160	B17XF3	R	8/19/2004	FIELD																
299-W15-46	174	176.5	B17N67		8/23/2004	WSCF	2.1	µg/kg	U	2.1	µg/kg	U		2.1	µg/kg	U				2.1	µg/kg	U
299-W15-46	184	186.3	B1B7J7		8/25/2004	FIELD																
299-W15-46	184	186.3	B1B7J8		8/25/2004	FIELD																

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,1-Dichloroethene (75-35-4)				1,2-Dibromo-3-chloropropane (96-12-8)				1,2-Dichloroethane (107-06-2)				1,2-Dichloroethene (Total) (540-59-0)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	28.5	29.5	B17RM4		10/13/2003																
299-W15-46	47.5	50	B17N46		10/20/2003	0.83	µg/kg	U						0.83	µg/kg	U		1.5	µg/kg	U	
299-W15-46	49.5	50	B17RM5		10/20/2003																
299-W15-46	49.5	50	B17RM6	R	10/20/2003																
299-W15-46	49.5	50	B17RM7	R	10/21/2003																
299-W15-46	49.5	50	B17RM8		10/21/2003																
299-W15-46	49.5	50	B18CX0	R	10/20/2003																
299-W15-46	49.5	50	B18CX1	R	10/21/2003																
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003																
299-W15-46	58.5	59.5	B17RN1		10/27/2003																
299-W15-46	58.5	59.5	B17RN2		10/27/2003																
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003																
299-W15-46	65	66	B17RN3	R	10/31/2003																
299-W15-46	65	66	B17RN4	R	10/31/2003																
299-W15-46	65	66	B17RN5		10/31/2003																
299-W15-46	65	66	B17RN6		10/31/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003	150	µg/kg	U						150	µg/kg	U		270	µg/kg	U	
299-W15-46	65	66	B17X85		11/4/2003																
299-W15-46	65	66	B17X86	R	11/4/2003																
299-W15-46	65	66	B17X87	R	11/4/2003																
299-W15-46	65	66	B17X96		3/15/2004																
299-W15-46	65	66	B17X97	R	3/15/2004																
299-W15-46	66	67	B17X90		11/10/2003																
299-W15-46	66	67	B17X91		11/10/2003																
299-W15-46	66	67	B17X92	R	11/10/2003																
299-W15-46	66	67	B17X93	R	11/10/2003																
299-W15-46	66	67.5	B17X98	R	3/15/2004																
299-W15-46	81	82	B17XB1		3/22/2004																
299-W15-46	81	82	B17XB2	R	3/22/2004																
299-W15-46	81	82	B17XB3	R	3/22/2004																
299-W15-46	90	92.5	B17N52		3/23/2004	5	µg/kg	U						5	µg/kg	U		5	µg/kg	U	
299-W15-46	90	92.5	B17N61		3/23/2004	0.84	µg/kg	U						0.84	µg/kg	U		1.5	µg/kg	U	
299-W15-46	90	92.5	B17XB6		3/23/2004																
299-W15-46	90	92.5	B17XB7	R	3/23/2004																
299-W15-46	90	92.5	B17XB8	R	3/23/2004																
299-W15-46	110	112	B17XB9		4/12/2004																

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,1-Dichloroethene (75-35-4)				1,2-Dibromo-3-chloropropane (96-12-8)				1,2-Dichloroethane (107-06-2)				1,2-Dichloroethene (Total) (540-59-0)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	110	112	B17XC0	R	4/12/2004																
299-W15-46	110	112	B17XC1	R	4/12/2004																
299-W15-46	110	112	B17XC3		4/12/2004																
299-W15-46	109.5	112	B18XR8		4/8/2004	140	µg/kg	U					140	µg/kg	U		260	µg/kg	U		
299-W15-46	109.5	112	B18XW3		4/8/2004	0.68	µg/kg	U					0.68	µg/kg	U		1.2	µg/kg	U		
299-W15-46	115	117.5	B191Y4		4/19/2004	1.1	µg/kg			588	µg/kg			0.75	µg/kg	U		1.4	µg/kg	U	
299-W15-46	115	117.5	B191Y4-A		4/19/2004	75	µg/kg	U					75	µg/kg	U		140	µg/kg	U		
299-W15-46	117	119.5	B17N60		4/21/2004	2.1	µg/kg	U					2.1	µg/kg	U		2.1	µg/kg	U		
299-W15-46	117	119.5	B17N64		4/21/2004	0.91	µg/kg	U					0.91	µg/kg	U		1.6	µg/kg	U		
299-W15-46	117	119.5	B17N64-A		4/21/2004	0.64	µg/kg	U					0.64	µg/kg	U		1.2	µg/kg	U		
299-W15-46	117	119.5	B17N68		4/21/2004	84	µg/kg	U					84	µg/kg	U		150	µg/kg	U		
299-W15-46	118	119.5	B17XC4		4/22/2004																
299-W15-46	118	119.5	B17XC5		4/22/2004																
299-W15-46	118	119.5	B17XC6		4/22/2004																
299-W15-46	118	119.5	B17XC7	R	4/22/2004																
299-W15-46	118	119.5	B17XC8	R	4/22/2004																
299-W15-46	119.5	122	B17N63		5/3/2004	2.1	µg/kg	U					2.1	µg/kg	U		2.1	µg/kg	U		
299-W15-46	119.5	122	B17XC9		5/3/2004																
299-W15-46	119.5	122	B17XD0		5/3/2004																
299-W15-46	119.5	122	B17XD1		5/3/2004																
299-W15-46	119.5	122	B17XD2	R	5/3/2004																
299-W15-46	119.5	122	B17XD3	R	5/3/2004																
299-W15-46	119.5	122	B18XT1		5/3/2004	11	µg/kg	U					11	µg/kg	U		11	µg/kg	U		
299-W15-46	141	143	B17XD4		8/16/2004																
299-W15-46	141	143	B17XD5		8/16/2004																
299-W15-46	141	143	B17XD6		8/16/2004																
299-W15-46	141	143	B17XD7	R	8/16/2004																
299-W15-46	141	143	B17XD8	R	8/16/2004																
299-W15-46	159	160	B17XD9		8/19/2004																
299-W15-46	159	160	B17XF0	R	8/19/2004																
299-W15-46	159	160	B17XF1	R	8/19/2004																
299-W15-46	159	160	B17XF2	R	8/19/2004																
299-W15-46	159	160	B17XF3	R	8/19/2004																
299-W15-46	174	176.5	B17N67		8/23/2004	2.1	µg/kg	U					2.1	µg/kg	U		2.1	µg/kg	U		
299-W15-46	184	186.3	B1B7J7		8/25/2004																
299-W15-46	184	186.3	B1B7J8		8/25/2004																

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,1-Dichloroethene (75-35-4)				1,2-Dibromo-3-chloropropane (96-12-8)				1,2-Dichloroethane (107-06-2)				1,2-Dichloroethene (Total) (540-59-0)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	184	186.3	B1B7J9		8/25/2004																
299-W15-46	184	186.3	B1B7K0	R	8/25/2004																
299-W15-46	184	186.3	B1B7K1	R	8/25/2004																
299-W15-46	184	186.5	B17N70		8/25/2004	2.1	µg/kg	U					2.1	µg/kg	U			2.1	µg/kg	U	
299-W15-46	184	186.5	B17N74		8/25/2004	2.1	µg/kg	U					2.1	µg/kg	U			2.1	µg/kg	U	
299-W15-46	223	224	B1B7J2		9/9/2004																
299-W15-46	223	224	B1B7J3		9/9/2004																
299-W15-46	223	224	B1B7J4		9/9/2004																
299-W15-46	223	224	B1B7J5	R	9/9/2004																
299-W15-46	223	224	B1B7J6	R	9/9/2004																
299-W15-46	224	226.5	B17N73		9/9/2004	2.1	µg/kg	U					2.1	µg/kg	U			2.1	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	1.9	µg/kg	U					1.9	µg/kg	U			1.9	µg/kg	U	
			B17MM8	EB	9/23/2003	1	µg/L	U					1	µg/L	U			1	µg/L	U	
					TQL (µg/kg)	N/A				N/A				5				10			

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,2-Dichloropropane (78-87-5)				1-Butanol (71-36-3)				2-Butanone (78-93-3)				2-Butanone (78-93-3)			
						8260				8260				8260				B&K, field			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	28.5	29.5	B17RM4		10/13/2003																
299-W15-46	47.5	50	B17N46		10/20/2003								24	µg/kg							
299-W15-46	49.5	50	B17RM5		10/20/2003																
299-W15-46	49.5	50	B17RM6	R	10/20/2003																
299-W15-46	49.5	50	B17RM7	R	10/21/2003																
299-W15-46	49.5	50	B17RM8		10/21/2003																
299-W15-46	49.5	50	B18CX0	R	10/20/2003																
299-W15-46	49.5	50	B18CX1	R	10/21/2003																
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003																
299-W15-46	58.5	59.5	B17RN1		10/27/2003																
299-W15-46	58.5	59.5	B17RN2		10/27/2003																
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003																
299-W15-46	65	66	B17RN3	R	10/31/2003																
299-W15-46	65	66	B17RN4	R	10/31/2003																
299-W15-46	65	66	B17RN5		10/31/2003																
299-W15-46	65	66	B17RN6		10/31/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003								160	µg/kg	U						
299-W15-46	65	66	B17X85		11/4/2003																
299-W15-46	65	66	B17X86	R	11/4/2003																
299-W15-46	65	66	B17X87	R	11/4/2003																
299-W15-46	65	66	B17X96		3/15/2004																
299-W15-46	65	66	B17X97	R	3/15/2004																
299-W15-46	66	67	B17X90		11/10/2003																
299-W15-46	66	67	B17X91		11/10/2003																
299-W15-46	66	67	B17X92	R	11/10/2003																
299-W15-46	66	67	B17X93	R	11/10/2003																
299-W15-46	66	67.5	B17X98	R	3/15/2004																
299-W15-46	81	82	B17XB1		3/22/2004																
299-W15-46	81	82	B17XB2	R	3/22/2004																
299-W15-46	81	82	B17XB3	R	3/22/2004																
299-W15-46	90	92.5	B17N52		3/23/2004	5	µg/kg	U		76.174	µg/kg	J		10	µg/kg	U					
299-W15-46	90	92.5	B17N61		3/23/2004					260	µg/kg			36	µg/kg						
299-W15-46	90	92.5	B17XB6		3/23/2004																
299-W15-46	90	92.5	B17XB7	R	3/23/2004																
299-W15-46	90	92.5	B17XB8	R	3/23/2004																
299-W15-46	110	112	B17XB9		4/12/2004															3.25 PPM(V/V)	

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,2-Dichloropropane (78-87-5)				1-Butanol (71-36-3)				2-Butanone (78-93-3)				2-Butanone (78-93-3)			
						8260				8260				8260				B&K, field			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	110	112	B17XC0	R	4/12/2004												2.11	PPM(V/V)			
299-W15-46	110	112	B17XC1	R	4/12/2004												1.98	PPM(V/V)			
299-W15-46	110	112	B17XC3		4/12/2004												2.7	PPM(V/V)			
299-W15-46	109.5	112	B18XR8		4/8/2004								150	µg/kg	U						
299-W15-46	109.5	112	B18XW3		4/8/2004					1500	µg/kg	E		27	µg/kg						
299-W15-46	115	117.5	B191Y4		4/19/2004					947	µg/kg	E		22	µg/kg						
299-W15-46	115	117.5	B191Y4-A		4/19/2004									81	µg/kg	U					
299-W15-46	117	119.5	B17N60		4/21/2004	2.1	µg/kg	U		42	µg/kg	U		2.1	µg/kg	U					
299-W15-46	117	119.5	B17N64		4/21/2004									75	µg/kg						
299-W15-46	117	119.5	B17N64-A		4/21/2004					301	µg/kg			80	µg/kg						
299-W15-46	117	119.5	B17N68		4/21/2004									91	µg/kg	U					
299-W15-46	118	119.5	B17XC4		4/22/2004												1	PPM(V/V)	U		
299-W15-46	118	119.5	B17XC5		4/22/2004												1	PPM(V/V)	U		
299-W15-46	118	119.5	B17XC6		4/22/2004												1	PPM(V/V)	U		
299-W15-46	118	119.5	B17XC7	R	4/22/2004												1	PPM(V/V)	U		
299-W15-46	118	119.5	B17XC8	R	4/22/2004												1	PPM(V/V)	U		
299-W15-46	119.5	122	B17N63		5/3/2004	2.1	µg/kg	U		42	µg/kg	U		2.1	µg/kg	U					
299-W15-46	119.5	122	B17XC9		5/3/2004												1.28	PPM(V/V)	U		
299-W15-46	119.5	122	B17XD0		5/3/2004												1.45	PPM(V/V)			
299-W15-46	119.5	122	B17XD1		5/3/2004												1	PPM(V/V)	U		
299-W15-46	119.5	122	B17XD2	R	5/3/2004												1.49	PPM(V/V)			
299-W15-46	119.5	122	B17XD3	R	5/3/2004												1.44	PPM(V/V)			
299-W15-46	119.5	122	B18XT1		5/3/2004	11	µg/kg	U						11	µg/kg	U					
299-W15-46	141	143	B17XD4		8/16/2004												1.96	PPM(V/V)			
299-W15-46	141	143	B17XD5		8/16/2004												1.4	PPM(V/V)			
299-W15-46	141	143	B17XD6		8/16/2004												1.62	PPM(V/V)			
299-W15-46	141	143	B17XD7	R	8/16/2004												1.53	PPM(V/V)			
299-W15-46	141	143	B17XD8	R	8/16/2004												1.49	PPM(V/V)			
299-W15-46	159	160	B17XD9		8/19/2004												1.55	PPM(V/V)			
299-W15-46	159	160	B17XF0	R	8/19/2004												1.31	PPM(V/V)			
299-W15-46	159	160	B17XF1	R	8/19/2004												1.14	PPM(V/V)			
299-W15-46	159	160	B17XF2	R	8/19/2004												1.34	PPM(V/V)			
299-W15-46	159	160	B17XF3	R	8/19/2004												1.32	PPM(V/V)			
299-W15-46	174	176.5	B17N67		8/23/2004	2.1	µg/kg	U		41	µg/kg	U		2.1	µg/kg	U					
299-W15-46	184	186.3	B1B7J7		8/25/2004												1	PPM(V/V)	U		
299-W15-46	184	186.3	B1B7J8		8/25/2004												1	PPM(V/V)	U		

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,2-Dichloropropane (78-87-5)				1-Butanol (71-36-3)				2-Butanone (78-93-3)				2-Butanone (78-93-3)			
						8260				8260				8260				B&K, field			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	184	186.3	B1B7J9		8/25/2004													1	PPM(V/V)	U	
299-W15-46	184	186.3	B1B7K0	R	8/25/2004													1	PPM(V/V)	U	
299-W15-46	184	186.3	B1B7K1	R	8/25/2004													1	PPM(V/V)	U	
299-W15-46	184	186.5	B17N70		8/25/2004	2.1	µg/kg	U		41	µg/kg	U		2.1	µg/kg	U					
299-W15-46	184	186.5	B17N74		8/25/2004	2.1	µg/kg	U						2.1	µg/kg	U					
299-W15-46	223	224	B1B7J2		9/9/2004													1	PPM(V/V)	U	
299-W15-46	223	224	B1B7J3		9/9/2004													1	PPM(V/V)	U	
299-W15-46	223	224	B1B7J4		9/9/2004													1.05	PPM(V/V)		
299-W15-46	223	224	B1B7J5	R	9/9/2004													1	PPM(V/V)	U	
299-W15-46	223	224	B1B7J6	R	9/9/2004													1	PPM(V/V)	U	
299-W15-46	224	226.5	B17N73		9/9/2004	2.1	µg/kg	U		43	µg/kg	U		2.1	µg/kg	U					
299-W15-46	226.5	229	B17NL5		9/9/2004	1.9	µg/kg	U		38	µg/kg	U		1.9	µg/kg	U					
			B17MM8	EB	9/23/2003	1	µg/L	U		20	µg/L	U		1	µg/L	U					
					TQL (µg/kg)		N/A				N/A				10				10		

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Ethyl-1-hexanol (104-76-7)				2-Hexanone (591-78-6)				2-Methyl-2-Propanol (75-65-0)				2-Pentanone (107-87-9)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	28.5	29.5	B17RM4		10/13/2003																
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	49.5	50	B17RM5		10/20/2003																
299-W15-46	49.5	50	B17RM6	R	10/20/2003																
299-W15-46	49.5	50	B17RM7	R	10/21/2003																
299-W15-46	49.5	50	B17RM8		10/21/2003																
299-W15-46	49.5	50	B18CX0	R	10/20/2003																
299-W15-46	49.5	50	B18CX1	R	10/21/2003																
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003																
299-W15-46	58.5	59.5	B17RN1		10/27/2003																
299-W15-46	58.5	59.5	B17RN2		10/27/2003																
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003																
299-W15-46	65	66	B17RN3	R	10/31/2003																
299-W15-46	65	66	B17RN4	R	10/31/2003																
299-W15-46	65	66	B17RN5		10/31/2003																
299-W15-46	65	66	B17RN6		10/31/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	65	66	B17X85		11/4/2003																
299-W15-46	65	66	B17X86	R	11/4/2003																
299-W15-46	65	66	B17X87	R	11/4/2003																
299-W15-46	65	66	B17X96		3/15/2004																
299-W15-46	65	66	B17X97	R	3/15/2004																
299-W15-46	66	67	B17X90		11/10/2003																
299-W15-46	66	67	B17X91		11/10/2003																
299-W15-46	66	67	B17X92	R	11/10/2003																
299-W15-46	66	67	B17X93	R	11/10/2003																
299-W15-46	66	67.5	B17X98	R	3/15/2004																
299-W15-46	81	82	B17XB1		3/22/2004																
299-W15-46	81	82	B17XB2	R	3/22/2004																
299-W15-46	81	82	B17XB3	R	3/22/2004																
299-W15-46	90	92.5	B17N52		3/23/2004					10	µg/kg	U									
299-W15-46	90	92.5	B17N61		3/23/2004	8.5	µg/kg							4.3	µg/kg						
299-W15-46	90	92.5	B17XB6		3/23/2004																
299-W15-46	90	92.5	B17XB7	R	3/23/2004																
299-W15-46	90	92.5	B17XB8	R	3/23/2004																
299-W15-46	110	112	B17XB9		4/12/2004																

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Ethyl-1-hexanol (104-76-7)				2-Hexanone (591-78-6)				2-Methyl-2-Propanol (75-65-0)				2-Pentanone (107-87-9)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	110	112	B17XC0	R	4/12/2004																
299-W15-46	110	112	B17XC1	R	4/12/2004																
299-W15-46	110	112	B17XC3		4/12/2004																
299-W15-46	109.5	112	B18XR8		4/8/2004																
299-W15-46	109.5	112	B18XW3		4/8/2004	24	µg/kg			1.3	µg/kg	J									
299-W15-46	115	117.5	B191Y4		4/19/2004					1.5	µg/kg										
299-W15-46	115	117.5	B191Y4-A		4/19/2004																
299-W15-46	117	119.5	B17N60		4/21/2004					2.1	µg/kg	U									
299-W15-46	117	119.5	B17N64		4/21/2004					1.3	µg/kg	J				6.6	µg/kg	J			
299-W15-46	117	119.5	B17N64-A		4/21/2004					7.6	µg/kg					6	µg/kg	J			
299-W15-46	117	119.5	B17N68		4/21/2004																
299-W15-46	118	119.5	B17XC4		4/22/2004																
299-W15-46	118	119.5	B17XC5		4/22/2004																
299-W15-46	118	119.5	B17XC6		4/22/2004																
299-W15-46	118	119.5	B17XC7	R	4/22/2004																
299-W15-46	118	119.5	B17XC8	R	4/22/2004																
299-W15-46	119.5	122	B17N63		5/3/2004					2.1	µg/kg	U									
299-W15-46	119.5	122	B17XC9		5/3/2004																
299-W15-46	119.5	122	B17XD0		5/3/2004																
299-W15-46	119.5	122	B17XD1		5/3/2004																
299-W15-46	119.5	122	B17XD2	R	5/3/2004																
299-W15-46	119.5	122	B17XD3	R	5/3/2004																
299-W15-46	119.5	122	B18XT1		5/3/2004					11	µg/kg	U									
299-W15-46	141	143	B17XD4		8/16/2004																
299-W15-46	141	143	B17XD5		8/16/2004																
299-W15-46	141	143	B17XD6		8/16/2004																
299-W15-46	141	143	B17XD7	R	8/16/2004																
299-W15-46	141	143	B17XD8	R	8/16/2004																
299-W15-46	159	160	B17XD9		8/19/2004																
299-W15-46	159	160	B17XF0	R	8/19/2004																
299-W15-46	159	160	B17XF1	R	8/19/2004																
299-W15-46	159	160	B17XF2	R	8/19/2004																
299-W15-46	159	160	B17XF3	R	8/19/2004																
299-W15-46	174	176.5	B17N67		8/23/2004					2.1	µg/kg	U									
299-W15-46	184	186.3	B1B7J7		8/25/2004																
299-W15-46	184	186.3	B1B7J8		8/25/2004																

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Ethyl-1-hexanol (104-76-7)				2-Hexanone (591-78-6)				2-Methyl-2-Propanol (75-65-0)				2-Pentanone (107-87-9)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	184	186.3	B1B7J9		8/25/2004																
299-W15-46	184	186.3	B1B7K0	R	8/25/2004																
299-W15-46	184	186.3	B1B7K1	R	8/25/2004																
299-W15-46	184	186.5	B17N70		8/25/2004				2.1	µg/kg	U										
299-W15-46	184	186.5	B17N74		8/25/2004				2.1	µg/kg	U										
299-W15-46	223	224	B1B7J2		9/9/2004																
299-W15-46	223	224	B1B7J3		9/9/2004																
299-W15-46	223	224	B1B7J4		9/9/2004																
299-W15-46	223	224	B1B7J5	R	9/9/2004																
299-W15-46	223	224	B1B7J6	R	9/9/2004																
299-W15-46	224	226.5	B17N73		9/9/2004				2.1	µg/kg	U										
299-W15-46	226.5	229	B17NL5		9/9/2004				1.9	µg/kg	U										
			B17MM8	EB	9/23/2003				1	µg/L	U										
					TQL (µg/kg)				N/A					N/A					N/A		

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Pentanone, 4-Methyl (108-10-1)				2-Propanol (67-63-0)				Acetone (67-64-1)				Acetonitrile (75-05-8)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	28.5	29.5	B17RM4		10/13/2003																
299-W15-46	47.5	50	B17N46		10/20/2003	0.81	µg/kg	U						15	µg/kg						
299-W15-46	49.5	50	B17RM5		10/20/2003																
299-W15-46	49.5	50	B17RM6	R	10/20/2003																
299-W15-46	49.5	50	B17RM7	R	10/21/2003																
299-W15-46	49.5	50	B17RM8		10/21/2003																
299-W15-46	49.5	50	B18CX0	R	10/20/2003																
299-W15-46	49.5	50	B18CX1	R	10/21/2003																
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003																
299-W15-46	58.5	59.5	B17RN1		10/27/2003																
299-W15-46	58.5	59.5	B17RN2		10/27/2003																
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003																
299-W15-46	65	66	B17RN3	R	10/31/2003																
299-W15-46	65	66	B17RN4	R	10/31/2003																
299-W15-46	65	66	B17RN5		10/31/2003																
299-W15-46	65	66	B17RN6		10/31/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003	140	µg/kg	U						180	µg/kg	U					
299-W15-46	65	66	B17X85		11/4/2003																
299-W15-46	65	66	B17X86	R	11/4/2003																
299-W15-46	65	66	B17X87	R	11/4/2003																
299-W15-46	65	66	B17X96		3/15/2004																
299-W15-46	65	66	B17X97	R	3/15/2004																
299-W15-46	66	67	B17X90		11/10/2003																
299-W15-46	66	67	B17X91		11/10/2003																
299-W15-46	66	67	B17X92	R	11/10/2003																
299-W15-46	66	67	B17X93	R	11/10/2003																
299-W15-46	66	67.5	B17X98	R	3/15/2004																
299-W15-46	81	82	B17XB1		3/22/2004																
299-W15-46	81	82	B17XB2	R	3/22/2004																
299-W15-46	81	82	B17XB3	R	3/22/2004																
299-W15-46	90	92.5	B17N52		3/23/2004	10	µg/kg	U						9	µg/kg	J			10	µg/kg	U
299-W15-46	90	92.5	B17N61		3/23/2004	0.82	µg/kg	U						26	µg/kg						
299-W15-46	90	92.5	B17XB6		3/23/2004																
299-W15-46	90	92.5	B17XB7	R	3/23/2004																
299-W15-46	90	92.5	B17XB8	R	3/23/2004																
299-W15-46	110	112	B17XB9		4/12/2004																

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Pentanone, 4-Methyl (108-10-1)				2-Propanol (67-63-0)				Acetone (67-64-1)				Acetonitrile (75-05-8)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	110	112	B17XC0	R	4/12/2004																
299-W15-46	110	112	B17XC1	R	4/12/2004																
299-W15-46	110	112	B17XC3		4/12/2004																
299-W15-46	109.5	112	B18XR8		4/8/2004	140	µg/kg	U						170	µg/kg	U					
299-W15-46	109.5	112	B18XW3		4/8/2004	0.66	µg/kg	U						51	µg/kg						
299-W15-46	115	117.5	B191Y4		4/19/2004	0.73	µg/kg	U	10	µg/kg				41	µg/kg						
299-W15-46	115	117.5	B191Y4-A		4/19/2004	73	µg/kg	U						590	µg/kg						
299-W15-46	117	119.5	B17N60		4/21/2004	2.1	µg/kg	U						2.1	µg/kg	U	4.2	µg/kg	U		
299-W15-46	117	119.5	B17N64		4/21/2004	1.2	µg/kg	U						170	µg/kg						
299-W15-46	117	119.5	B17N64-A		4/21/2004	0.62	µg/kg	U						79	µg/kg						
299-W15-46	117	119.5	B17N68		4/21/2004	82	µg/kg	U						660	µg/kg						
299-W15-46	118	119.5	B17XC4		4/22/2004																
299-W15-46	118	119.5	B17XC5		4/22/2004																
299-W15-46	118	119.5	B17XC6		4/22/2004																
299-W15-46	118	119.5	B17XC7	R	4/22/2004																
299-W15-46	118	119.5	B17XC8	R	4/22/2004																
299-W15-46	119.5	122	B17N63		5/3/2004	2.1	µg/kg	U						2.1	µg/kg	U	4.2	µg/kg	U		
299-W15-46	119.5	122	B17XC9		5/3/2004																
299-W15-46	119.5	122	B17XD0		5/3/2004																
299-W15-46	119.5	122	B17XD1		5/3/2004																
299-W15-46	119.5	122	B17XD2	R	5/3/2004																
299-W15-46	119.5	122	B17XD3	R	5/3/2004																
299-W15-46	119.5	122	B18XT1		5/3/2004	11	µg/kg	U						540	µg/kg		22	µg/kg	U		
299-W15-46	141	143	B17XD4		8/16/2004																
299-W15-46	141	143	B17XD5		8/16/2004																
299-W15-46	141	143	B17XD6		8/16/2004																
299-W15-46	141	143	B17XD7	R	8/16/2004																
299-W15-46	141	143	B17XD8	R	8/16/2004																
299-W15-46	159	160	B17XD9		8/19/2004																
299-W15-46	159	160	B17XF0	R	8/19/2004																
299-W15-46	159	160	B17XF1	R	8/19/2004																
299-W15-46	159	160	B17XF2	R	8/19/2004																
299-W15-46	159	160	B17XF3	R	8/19/2004																
299-W15-46	174	176.5	B17N67		8/23/2004	2.1	µg/kg	U						2.1	µg/kg	U	4.2	µg/kg	U		
299-W15-46	184	186.3	B1B7J7		8/25/2004																
299-W15-46	184	186.3	B1B7J8		8/25/2004																

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Pentanone, 4-Methyl (108-10-1)				2-Propanol (67-63-0)				Acetone (67-64-1)				Acetonitrile (75-05-8)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	184	186.3	B1B7J9		8/25/2004																
299-W15-46	184	186.3	B1B7K0	R	8/25/2004																
299-W15-46	184	186.3	B1B7K1	R	8/25/2004																
299-W15-46	184	186.5	B17N70		8/25/2004	2.1	µg/kg	U					2.1	µg/kg	U			4.2	µg/kg	U	
299-W15-46	184	186.5	B17N74		8/25/2004	2.1	µg/kg	U					2.1	µg/kg	U			4.2	µg/kg	U	
299-W15-46	223	224	B1B7J2		9/9/2004																
299-W15-46	223	224	B1B7J3		9/9/2004																
299-W15-46	223	224	B1B7J4		9/9/2004																
299-W15-46	223	224	B1B7J5	R	9/9/2004																
299-W15-46	223	224	B1B7J6	R	9/9/2004																
299-W15-46	224	226.5	B17N73		9/9/2004	2.1	µg/kg	U					2.1	µg/kg	U			4.2	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	1.9	µg/kg	U					1.9	µg/kg	U			3.8	µg/kg	U	
			B17MM8	EB	9/23/2003	1	µg/L	U					1	µg/L	U			2	µg/L	U	
					TQL (µg/kg)		10				N/A			20					N/A		

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Benzene (71-43-2)				Benzoic acid, 2- [[trimethylsilyl]oxy]- trimethylsilyl ester (3789-85-3)				Bromodichloromethane (75-27-4)				Bromoform (75-25-2)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	28.5	29.5	B17RM4		10/13/2003																
299-W15-46	47.5	50	B17N46		10/20/2003	0.72	µg/kg	U													
299-W15-46	49.5	50	B17RM5		10/20/2003																
299-W15-46	49.5	50	B17RM6	R	10/20/2003																
299-W15-46	49.5	50	B17RM7	R	10/21/2003																
299-W15-46	49.5	50	B17RM8		10/21/2003																
299-W15-46	49.5	50	B18CX0	R	10/20/2003																
299-W15-46	49.5	50	B18CX1	R	10/21/2003																
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003																
299-W15-46	58.5	59.5	B17RN1		10/27/2003																
299-W15-46	58.5	59.5	B17RN2		10/27/2003																
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003																
299-W15-46	65	66	B17RN3	R	10/31/2003																
299-W15-46	65	66	B17RN4	R	10/31/2003																
299-W15-46	65	66	B17RN5		10/31/2003																
299-W15-46	65	66	B17RN6		10/31/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003	130	µg/kg	U													
299-W15-46	65	66	B17X85		11/4/2003																
299-W15-46	65	66	B17X86	R	11/4/2003																
299-W15-46	65	66	B17X87	R	11/4/2003																
299-W15-46	65	66	B17X96		3/15/2004																
299-W15-46	65	66	B17X97	R	3/15/2004																
299-W15-46	66	67	B17X90		11/10/2003																
299-W15-46	66	67	B17X91		11/10/2003																
299-W15-46	66	67	B17X92	R	11/10/2003																
299-W15-46	66	67	B17X93	R	11/10/2003																
299-W15-46	66	67.5	B17X98	R	3/15/2004																
299-W15-46	81	82	B17XB1		3/22/2004																
299-W15-46	81	82	B17XB2	R	3/22/2004																
299-W15-46	81	82	B17XB3	R	3/22/2004																
299-W15-46	90	92.5	B17N52		3/23/2004	5	µg/kg	U						5	µg/kg	U			5	µg/kg	U
299-W15-46	90	92.5	B17N61		3/23/2004	0.73	µg/kg	U													
299-W15-46	90	92.5	B17XB6		3/23/2004																
299-W15-46	90	92.5	B17XB7	R	3/23/2004																
299-W15-46	90	92.5	B17XB8	R	3/23/2004																
299-W15-46	110	112	B17XB9		4/12/2004																

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Benzene (71-43-2)				Benzoic acid, 2- [[trimethylsilyl]oxy]- trimethylsilyl ester (3789-85-3)				Bromodichloromethane (75-27-4)				Bromoform (75-25-2)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	110	112	B17XC0	R	4/12/2004																
299-W15-46	110	112	B17XC1	R	4/12/2004																
299-W15-46	110	112	B17XC3		4/12/2004																
299-W15-46	109.5	112	B18XR8		4/8/2004	120	µg/kg	U													
299-W15-46	109.5	112	B18XW3		4/8/2004	0.59	µg/kg	U													
299-W15-46	115	117.5	B191Y4		4/19/2004	0.97	µg/kg		6.3	µg/kg											
299-W15-46	115	117.5	B191Y4-A		4/19/2004	65	µg/kg	U													
299-W15-46	117	119.5	B17N60		4/21/2004	2.1	µg/kg	U					2.1	µg/kg	U		2.1	µg/kg	U		
299-W15-46	117	119.5	B17N64		4/21/2004	0.79	µg/kg	U													
299-W15-46	117	119.5	B17N64-A		4/21/2004	0.56	µg/kg	U													
299-W15-46	117	119.5	B17N68		4/21/2004	73	µg/kg	U													
299-W15-46	118	119.5	B17XC4		4/22/2004																
299-W15-46	118	119.5	B17XC5		4/22/2004																
299-W15-46	118	119.5	B17XC6		4/22/2004																
299-W15-46	118	119.5	B17XC7	R	4/22/2004																
299-W15-46	118	119.5	B17XC8	R	4/22/2004																
299-W15-46	119.5	122	B17N63		5/3/2004	2.1	µg/kg	U					2.1	µg/kg	U		2.1	µg/kg	U		
299-W15-46	119.5	122	B17XC9		5/3/2004																
299-W15-46	119.5	122	B17XD0		5/3/2004																
299-W15-46	119.5	122	B17XD1		5/3/2004																
299-W15-46	119.5	122	B17XD2	R	5/3/2004																
299-W15-46	119.5	122	B17XD3	R	5/3/2004																
299-W15-46	119.5	122	B18XT1		5/3/2004	11	µg/kg	U					11	µg/kg	U		11	µg/kg	U		
299-W15-46	141	143	B17XD4		8/16/2004																
299-W15-46	141	143	B17XD5		8/16/2004																
299-W15-46	141	143	B17XD6		8/16/2004																
299-W15-46	141	143	B17XD7	R	8/16/2004																
299-W15-46	141	143	B17XD8	R	8/16/2004																
299-W15-46	159	160	B17XD9		8/19/2004																
299-W15-46	159	160	B17XF0	R	8/19/2004																
299-W15-46	159	160	B17XF1	R	8/19/2004																
299-W15-46	159	160	B17XF2	R	8/19/2004																
299-W15-46	159	160	B17XF3	R	8/19/2004																
299-W15-46	174	176.5	B17N67		8/23/2004	2.1	µg/kg	U					2.1	µg/kg	U		2.1	µg/kg	U		
299-W15-46	184	186.3	B1B7J7		8/25/2004																
299-W15-46	184	186.3	B1B7J8		8/25/2004																

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Benzene (71-43-2)				Benzoic acid, 2- [[trimethylsilyl]oxy]- trimethylsilyl ester (3789-85-3)				Bromodichloromethane (75-27-4)				Bromoform (75-25-2)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	184	186.3	B1B7J9		8/25/2004																
299-W15-46	184	186.3	B1B7K0	R	8/25/2004																
299-W15-46	184	186.3	B1B7K1	R	8/25/2004																
299-W15-46	184	186.5	B17N70		8/25/2004	2.1	µg/kg	U					2.1	µg/kg	U			2.1	µg/kg	U	
299-W15-46	184	186.5	B17N74		8/25/2004	2.1	µg/kg	U					2.1	µg/kg	U			2.1	µg/kg	U	
299-W15-46	223	224	B1B7J2		9/9/2004																
299-W15-46	223	224	B1B7J3		9/9/2004																
299-W15-46	223	224	B1B7J4		9/9/2004																
299-W15-46	223	224	B1B7J5	R	9/9/2004																
299-W15-46	223	224	B1B7J6	R	9/9/2004																
299-W15-46	224	226.5	B17N73		9/9/2004	2.1	µg/kg	U					2.1	µg/kg	U			2.1	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	1.9	µg/kg	U					1.9	µg/kg	U			1.9	µg/kg	U	
			B17MM8	EB	9/23/2003	1	µg/L	U					1	µg/L	U			1	µg/L	U	
					TQL (µg/kg)	5				N/A				N/A				N/A			

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Bromomethane (74-83-9)				Butyraldehyde (123-72-8)				Carbon Dioxide (124-38-9)				Carbon disulfide (75-15-0)			
						8260				8260				GC, field				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	28.5	29.5	B17RM4		10/13/2003									0	%(vol)	U					
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	49.5	50	B17RM5		10/20/2003									0	%(vol)	U					
299-W15-46	49.5	50	B17RM6	R	10/20/2003									0	%(vol)	U					
299-W15-46	49.5	50	B17RM7	R	10/21/2003									0	%(vol)	U					
299-W15-46	49.5	50	B17RM8		10/21/2003									0	%(vol)	U					
299-W15-46	49.5	50	B18CX0	R	10/20/2003									0	%(vol)	U					
299-W15-46	49.5	50	B18CX1	R	10/21/2003									0	%(vol)	U					
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003									0.8	%(vol)						
299-W15-46	58.5	59.5	B17RN1		10/27/2003									0.7	%(vol)						
299-W15-46	58.5	59.5	B17RN2		10/27/2003									0.6	%(vol)						
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003									0.8	%(vol)						
299-W15-46	65	66	B17RN3	R	10/31/2003									0	%(vol)						
299-W15-46	65	66	B17RN4	R	10/31/2003									0	%(vol)	U					
299-W15-46	65	66	B17RN5		10/31/2003									0	%(vol)	U					
299-W15-46	65	66	B17RN6		10/31/2003									0	%(vol)	U					
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	65	66	B17X85		11/4/2003									0	%(vol)						
299-W15-46	65	66	B17X86	R	11/4/2003									0	%(vol)						
299-W15-46	65	66	B17X87	R	11/4/2003																
299-W15-46	65	66	B17X96		3/15/2004																
299-W15-46	65	66	B17X97	R	3/15/2004									0.2	%(vol)						
299-W15-46	66	67	B17X90		11/10/2003									3.2	%(vol)						
299-W15-46	66	67	B17X91		11/10/2003									3.1	%(vol)						
299-W15-46	66	67	B17X92	R	11/10/2003									3.2	%(vol)						
299-W15-46	66	67	B17X93	R	11/10/2003									3.2	%(vol)						
299-W15-46	66	67.5	B17X98	R	3/15/2004																
299-W15-46	81	82	B17XB1		3/22/2004									0.8	%(vol)						
299-W15-46	81	82	B17XB2	R	3/22/2004									0.8	%(vol)						
299-W15-46	81	82	B17XB3	R	3/22/2004																
299-W15-46	90	92.5	B17N52		3/23/2004	10	µg/kg	U											5	µg/kg	U
299-W15-46	90	92.5	B17N61		3/23/2004																
299-W15-46	90	92.5	B17XB6		3/23/2004									1.3	%(vol)						
299-W15-46	90	92.5	B17XB7	R	3/23/2004									1.3	%(vol)						
299-W15-46	90	92.5	B17XB8	R	3/23/2004																
299-W15-46	110	112	B17XB9		4/12/2004									2.4	%(vol)						

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Bromomethane (74-83-9)				Butyraldehyde (123-72-8)				Carbon Dioxide (124-38-9)				Carbon disulfide (75-15-0)			
						8260				8260				GC, field				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	110	112	B17XC0	R	4/12/2004									2.2	%(vol)						
299-W15-46	110	112	B17XC1	R	4/12/2004									2.2	%(vol)						
299-W15-46	110	112	B17XC3		4/12/2004									2	%(vol)						
299-W15-46	109.5	112	B18XR8		4/8/2004																
299-W15-46	109.5	112	B18XW3		4/8/2004					18	µg/kg										
299-W15-46	115	117.5	B191Y4		4/19/2004													11	µg/kg		
299-W15-46	115	117.5	B191Y4-A		4/19/2004																
299-W15-46	117	119.5	B17N60		4/21/2004	2.1	µg/kg	U										2.1	µg/kg	U	
299-W15-46	117	119.5	B17N64		4/21/2004																
299-W15-46	117	119.5	B17N64-A		4/21/2004																
299-W15-46	117	119.5	B17N68		4/21/2004																
299-W15-46	118	119.5	B17XC4		4/22/2004								0	%(vol)	U						
299-W15-46	118	119.5	B17XC5		4/22/2004								0	%(vol)	U						
299-W15-46	118	119.5	B17XC6		4/22/2004								0	%(vol)	U						
299-W15-46	118	119.5	B17XC7	R	4/22/2004								0	%(vol)	U						
299-W15-46	118	119.5	B17XC8	R	4/22/2004								0	%(vol)	U						
299-W15-46	119.5	122	B17N63		5/3/2004	2.1	µg/kg	U										2.1	µg/kg	U	
299-W15-46	119.5	122	B17XC9		5/3/2004								0	%(vol)	U						
299-W15-46	119.5	122	B17XD0		5/3/2004								0	%(vol)	U						
299-W15-46	119.5	122	B17XD1		5/3/2004								0	%(vol)	U						
299-W15-46	119.5	122	B17XD2	R	5/3/2004								0	%(vol)	U						
299-W15-46	119.5	122	B17XD3	R	5/3/2004								0	%(vol)	U						
299-W15-46	119.5	122	B18XT1		5/3/2004	31	µg/kg	J										11	µg/kg	U	
299-W15-46	141	143	B17XD4		8/16/2004																
299-W15-46	141	143	B17XD5		8/16/2004																
299-W15-46	141	143	B17XD6		8/16/2004																
299-W15-46	141	143	B17XD7	R	8/16/2004																
299-W15-46	141	143	B17XD8	R	8/16/2004																
299-W15-46	159	160	B17XD9		8/19/2004																
299-W15-46	159	160	B17XF0	R	8/19/2004																
299-W15-46	159	160	B17XF1	R	8/19/2004																
299-W15-46	159	160	B17XF2	R	8/19/2004																
299-W15-46	159	160	B17XF3	R	8/19/2004																
299-W15-46	174	176.5	B17N67		8/23/2004	2.1	µg/kg	U										2.1	µg/kg	U	
299-W15-46	184	186.3	B1B7J7		8/25/2004																
299-W15-46	184	186.3	B1B7J8		8/25/2004																

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Bromomethane (74-83-9)				Butyraldehyde (123-72-8)				Carbon Dioxide (124-38-9)				Carbon disulfide (75-15-0)			
						8260				8260				GC, field				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	184	186.3	B1B7J9		8/25/2004																
299-W15-46	184	186.3	B1B7K0	R	8/25/2004																
299-W15-46	184	186.3	B1B7K1	R	8/25/2004																
299-W15-46	184	186.5	B17N70		8/25/2004	2.1	µg/kg	U										2.1	µg/kg	U	
299-W15-46	184	186.5	B17N74		8/25/2004	2.1	µg/kg	U										2.1	µg/kg	U	
299-W15-46	223	224	B1B7J2		9/9/2004																
299-W15-46	223	224	B1B7J3		9/9/2004																
299-W15-46	223	224	B1B7J4		9/9/2004																
299-W15-46	223	224	B1B7J5	R	9/9/2004																
299-W15-46	223	224	B1B7J6	R	9/9/2004																
299-W15-46	224	226.5	B17N73		9/9/2004	2.1	µg/kg	U										2.1	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	1.9	µg/kg	U										1.9	µg/kg	U	
			B17MM8	EB	9/23/2003	1	µg/L	U										1	µg/L	U	
					TQL (µg/kg)		N/A			N/A					N/A				N/A		

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Carbon tetrachloride (56-23-5)				Chlorobenzene (108-90-7)				Chloroethane (75-00-3)			
						8260				B&K, field				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	28.5	29.5	B17RM4		10/13/2003					1	PPM(V/V)	U									
299-W15-46	47.5	50	B17N46		10/20/2003	14	µg/kg						0.83	µg/kg	U						
299-W15-46	49.5	50	B17RM5		10/20/2003					1	PPM(V/V)	U									
299-W15-46	49.5	50	B17RM6	R	10/20/2003					1	PPM(V/V)	U									
299-W15-46	49.5	50	B17RM7	R	10/21/2003					1	PPM(V/V)	U									
299-W15-46	49.5	50	B17RM8		10/21/2003					1	PPM(V/V)	U									
299-W15-46	49.5	50	B18CX0	R	10/20/2003					1	PPM(V/V)	U									
299-W15-46	49.5	50	B18CX1	R	10/21/2003					1	PPM(V/V)	U									
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003					222	PPM(V/V)										
299-W15-46	58.5	59.5	B17RN1		10/27/2003					231	PPM(V/V)										
299-W15-46	58.5	59.5	B17RN2		10/27/2003					220	PPM(V/V)										
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003					227	PPM(V/V)										
299-W15-46	65	66	B17RN3	R	10/31/2003					52.9	PPM(V/V)										
299-W15-46	65	66	B17RN4	R	10/31/2003					53.6	PPM(V/V)										
299-W15-46	65	66	B17RN5		10/31/2003					54.7	PPM(V/V)										
299-W15-46	65	66	B17RN6		10/31/2003					54.1	PPM(V/V)										
299-W15-46	63.5	66	B17TM6		10/29/2003	380000	µg/kg						150	µg/kg	U						
299-W15-46	65	66	B17X85		11/4/2003					13.1	PPM(V/V)										
299-W15-46	65	66	B17X86	R	11/4/2003					15.8	PPM(V/V)										
299-W15-46	65	66	B17X87	R	11/4/2003					15.3	PPM(V/V)										
299-W15-46	65	66	B17X96		3/15/2004					16.4	PPM(V/V)										
299-W15-46	65	66	B17X97	R	3/15/2004					18.3	PPM(V/V)										
299-W15-46	66	67	B17X90		11/10/2003					8540	PPM(V/V)										
299-W15-46	66	67	B17X91		11/10/2003					8450	PPM(V/V)										
299-W15-46	66	67	B17X92	R	11/10/2003					8550	PPM(V/V)										
299-W15-46	66	67	B17X93	R	11/10/2003					8560	PPM(V/V)										
299-W15-46	66	67.5	B17X98	R	3/15/2004					18.3	PPM(V/V)										
299-W15-46	81	82	B17XB1		3/22/2004					4870	PPM(V/V)										
299-W15-46	81	82	B17XB2	R	3/22/2004					4760	PPM(V/V)										
299-W15-46	81	82	B17XB3	R	3/22/2004					4790	PPM(V/V)										
299-W15-46	90	92.5	B17N52		3/23/2004	5	µg/kg	U					5	µg/kg	U			10	µg/kg	U	
299-W15-46	90	92.5	B17N61		3/23/2004	19	µg/kg						0.84	µg/kg	U						
299-W15-46	90	92.5	B17XB6		3/23/2004					5750	PPM(V/V)										
299-W15-46	90	92.5	B17XB7	R	3/23/2004					5770	PPM(V/V)										
299-W15-46	90	92.5	B17XB8	R	3/23/2004					5780	PPM(V/V)										
299-W15-46	110	112	B17XB9		4/12/2004					9700	PPM(V/V)										

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Carbon tetrachloride (56-23-5)				Chlorobenzene (108-90-7)				Chloroethane (75-00-3)			
						8260				B&K, field				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	110	112	B17XC0	R	4/12/2004					9310	PPM(V/V)										
299-W15-46	110	112	B17XC1	R	4/12/2004					9330	PPM(V/V)										
299-W15-46	110	112	B17XC3		4/12/2004					9240	PPM(V/V)										
299-W15-46	109.5	112	B18XR8		4/8/2004	240	µg/kg	U					140	µg/kg	U						
299-W15-46	109.5	112	B18XW3		4/8/2004	260	µg/kg						0.68	µg/kg	U						
299-W15-46	115	117.5	B191Y4		4/19/2004	290	µg/kg	J					0.98	µg/kg							
299-W15-46	115	117.5	B191Y4-A		4/19/2004	130	µg/kg	U					75	µg/kg	U						
299-W15-46	117	119.5	B17N60		4/21/2004	2.1	µg/kg	U					2.1	µg/kg	U		2.1	µg/kg	U		
299-W15-46	117	119.5	B17N64		4/21/2004	92	µg/kg						0.91	µg/kg	U						
299-W15-46	117	119.5	B17N64-A		4/21/2004	240	µg/kg						0.64	µg/kg	U						
299-W15-46	117	119.5	B17N68		4/21/2004	140	µg/kg	U					84	µg/kg	U						
299-W15-46	118	119.5	B17XC4		4/22/2004					4.05	PPM(V/V)										
299-W15-46	118	119.5	B17XC5		4/22/2004					3.99	PPM(V/V)										
299-W15-46	118	119.5	B17XC6		4/22/2004					3.94	PPM(V/V)										
299-W15-46	118	119.5	B17XC7	R	4/22/2004					4.33	PPM(V/V)										
299-W15-46	118	119.5	B17XC8	R	4/22/2004					4.33	PPM(V/V)										
299-W15-46	119.5	122	B17N63		5/3/2004	2.1	µg/kg	U					2.1	µg/kg	U		2.1	µg/kg	U		
299-W15-46	119.5	122	B17XC9		5/3/2004					25.6	PPM(V/V)	U									
299-W15-46	119.5	122	B17XD0		5/3/2004					26.7	PPM(V/V)										
299-W15-46	119.5	122	B17XD1		5/3/2004					27	PPM(V/V)										
299-W15-46	119.5	122	B17XD2	R	5/3/2004					27.5	PPM(V/V)										
299-W15-46	119.5	122	B17XD3	R	5/3/2004					27.5	PPM(V/V)										
299-W15-46	119.5	122	B18XT1		5/3/2004	11	µg/kg	U					11	µg/kg	U		11	µg/kg	U		
299-W15-46	141	143	B17XD4		8/16/2004					1.32	PPM(V/V)										
299-W15-46	141	143	B17XD5		8/16/2004					1	PPM(V/V)	U									
299-W15-46	141	143	B17XD6		8/16/2004					1.01	PPM(V/V)										
299-W15-46	141	143	B17XD7	R	8/16/2004					1.15	PPM(V/V)										
299-W15-46	141	143	B17XD8	R	8/16/2004					1.16	PPM(V/V)										
299-W15-46	159	160	B17XD9		8/19/2004					6.24	PPM(V/V)										
299-W15-46	159	160	B17XF0	R	8/19/2004					5.73	PPM(V/V)										
299-W15-46	159	160	B17XF1	R	8/19/2004					5.7	PPM(V/V)										
299-W15-46	159	160	B17XF2	R	8/19/2004					2.4	PPM(V/V)										
299-W15-46	159	160	B17XF3	R	8/19/2004					2.41	PPM(V/V)										
299-W15-46	174	176.5	B17N67		8/23/2004	2.1	µg/kg	U					2.1	µg/kg	U		2.1	µg/kg	U		
299-W15-46	184	186.3	B1B7J7		8/25/2004					8.81	PPM(V/V)										
299-W15-46	184	186.3	B1B7J8		8/25/2004					10.5	PPM(V/V)										

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Carbon tetrachloride (56-23-5)				Chlorobenzene (108-90-7)				Chloroethane (75-00-3)			
						8260				B&K, field				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	184	186.3	B1B7J9		8/25/2004					10.5	PPM(V/V)										
299-W15-46	184	186.3	B1B7K0	R	8/25/2004					10.5	PPM(V/V)										
299-W15-46	184	186.3	B1B7K1	R	8/25/2004					10.5	PPM(V/V)										
299-W15-46	184	186.5	B17N70		8/25/2004	2.1	µg/kg	U						2.1	µg/kg	U		2.1	µg/kg	U	
299-W15-46	184	186.5	B17N74		8/25/2004	2.1	µg/kg	U						2.1	µg/kg	U		2.1	µg/kg	U	
299-W15-46	223	224	B1B7J2		9/9/2004					16.9	PPM(V/V)										
299-W15-46	223	224	B1B7J3		9/9/2004					17	PPM(V/V)										
299-W15-46	223	224	B1B7J4		9/9/2004					17.1	PPM(V/V)										
299-W15-46	223	224	B1B7J5	R	9/9/2004					16.8	PPM(V/V)										
299-W15-46	223	224	B1B7J6	R	9/9/2004					16.8	PPM(V/V)										
299-W15-46	224	226.5	B17N73		9/9/2004	2.1	µg/kg	U						2.1	µg/kg	U		2.1	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	1.9	µg/kg	U						1.9	µg/kg	U		1.9	µg/kg	U	
			B17MM8	EB	9/23/2003	1	µg/L	U						1	µg/L	U		1	µg/L	U	
					TQL (µg/kg)		5				5				5				N/A		

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Chloroform (67-66-3)				Chloroform (67-66-3)				Chloromethane (74-87-3)				cis-1,2-Dichloroethylene (156-59-2)			
						8260				B&K, field				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	28.5	29.5	B17RM4		10/13/2003					1	PPM(V/V)	U									
299-W15-46	47.5	50	B17N46		10/20/2003	0.78	µg/kg	U						1.8	µg/kg	U					
299-W15-46	49.5	50	B17RM5		10/20/2003					1.97	PPM(V/V)										
299-W15-46	49.5	50	B17RM6	R	10/20/2003					1.24	PPM(V/V)										
299-W15-46	49.5	50	B17RM7	R	10/21/2003					1	PPM(V/V)	U									
299-W15-46	49.5	50	B17RM8		10/21/2003					1	PPM(V/V)	U									
299-W15-46	49.5	50	B18CX0	R	10/20/2003					1.19	PPM(V/V)										
299-W15-46	49.5	50	B18CX1	R	10/21/2003					1	PPM(V/V)	U									
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003					4.12	PPM(V/V)										
299-W15-46	58.5	59.5	B17RN1		10/27/2003					3.95	PPM(V/V)										
299-W15-46	58.5	59.5	B17RN2		10/27/2003					3.7	PPM(V/V)										
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003					4.13	PPM(V/V)										
299-W15-46	65	66	B17RN3	R	10/31/2003					1	PPM(V/V)	U									
299-W15-46	65	66	B17RN4	R	10/31/2003					1	PPM(V/V)	U									
299-W15-46	65	66	B17RN5		10/31/2003					1	PPM(V/V)	U									
299-W15-46	65	66	B17RN6		10/31/2003					1	PPM(V/V)	U									
299-W15-46	63.5	66	B17TM6		10/29/2003	4900	µg/kg							320	µg/kg	U					
299-W15-46	65	66	B17X85		11/4/2003					1	PPM(V/V)	U									
299-W15-46	65	66	B17X86	R	11/4/2003					1	PPM(V/V)	U									
299-W15-46	65	66	B17X87	R	11/4/2003					1	PPM(V/V)	U									
299-W15-46	65	66	B17X96		3/15/2004					1	PPM(V/V)	U									
299-W15-46	65	66	B17X97	R	3/15/2004					1	PPM(V/V)	U									
299-W15-46	66	67	B17X90		11/10/2003					125	PPM(V/V)										
299-W15-46	66	67	B17X91		11/10/2003					126	PPM(V/V)										
299-W15-46	66	67	B17X92	R	11/10/2003					130	PPM(V/V)										
299-W15-46	66	67	B17X93	R	11/10/2003					130	PPM(V/V)										
299-W15-46	66	67.5	B17X98	R	3/15/2004					1	PPM(V/V)	U									
299-W15-46	81	82	B17XB1		3/22/2004					9.41	PPM(V/V)										
299-W15-46	81	82	B17XB2	R	3/22/2004					9.78	PPM(V/V)										
299-W15-46	81	82	B17XB3	R	3/22/2004					9.73	PPM(V/V)										
299-W15-46	90	92.5	B17N52		3/23/2004	5	µg/kg	U						10	µg/kg	U			5	µg/kg	U
299-W15-46	90	92.5	B17N61		3/23/2004	0.96	µg/kg							1.8	µg/kg	U					
299-W15-46	90	92.5	B17XB6		3/23/2004					15.2	PPM(V/V)										
299-W15-46	90	92.5	B17XB7	R	3/23/2004					15.4	PPM(V/V)										
299-W15-46	90	92.5	B17XB8	R	3/23/2004					15.4	PPM(V/V)										
299-W15-46	110	112	B17XB9		4/12/2004					1.85	PPM(V/V)										

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Chloroform (67-66-3)				Chloroform (67-66-3)				Chloromethane (74-87-3)				cis-1,2- Dichloroethylene (156-59-2)			
						8260				B&K, field				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	110	112	B17XC0	R	4/12/2004					1.06	PPM(V/V)										
299-W15-46	110	112	B17XC1	R	4/12/2004					1.15	PPM(V/V)										
299-W15-46	110	112	B17XC3		4/12/2004					1.38	PPM(V/V)										
299-W15-46	109.5	112	B18XR8		4/8/2004	140	µg/kg	U						620	µg/kg	U					
299-W15-46	109.5	112	B18XW3		4/8/2004	15	µg/kg							1.5	µg/kg	U					
299-W15-46	115	117.5	B191Y4		4/19/2004	14	µg/kg							1.6	µg/kg	U					
299-W15-46	115	117.5	B191Y4-A		4/19/2004	71	µg/kg	U						160	µg/kg	U					
299-W15-46	117	119.5	B17N60		4/21/2004	2.1	µg/kg	U						2.1	µg/kg	U	2.1	µg/kg	U		
299-W15-46	117	119.5	B17N64		4/21/2004	8.7	µg/kg							2	µg/kg	U					
299-W15-46	117	119.5	B17N64-A		4/21/2004	13	µg/kg							1.4	µg/kg	U					
299-W15-46	117	119.5	B17N68		4/21/2004	80	µg/kg	U						180	µg/kg	U					
299-W15-46	118	119.5	B17XC4		4/22/2004					1	PPM(V/V)	U									
299-W15-46	118	119.5	B17XC5		4/22/2004					1	PPM(V/V)	U									
299-W15-46	118	119.5	B17XC6		4/22/2004					1	PPM(V/V)	U									
299-W15-46	118	119.5	B17XC7	R	4/22/2004					1	PPM(V/V)	U									
299-W15-46	118	119.5	B17XC8	R	4/22/2004					1	PPM(V/V)	U									
299-W15-46	119.5	122	B17N63		5/3/2004	2.1	µg/kg	U						2.1	µg/kg	U	2.1	µg/kg	U		
299-W15-46	119.5	122	B17XC9		5/3/2004					1.26	PPM(V/V)	U									
299-W15-46	119.5	122	B17XD0		5/3/2004					1.4	PPM(V/V)										
299-W15-46	119.5	122	B17XD1		5/3/2004					1.14	PPM(V/V)										
299-W15-46	119.5	122	B17XD2	R	5/3/2004					1.18	PPM(V/V)										
299-W15-46	119.5	122	B17XD3	R	5/3/2004					1.48	PPM(V/V)										
299-W15-46	119.5	122	B18XT1		5/3/2004	11	µg/kg	U						110	µg/kg						
299-W15-46	141	143	B17XD4		8/16/2004					1.86	PPM(V/V)										
299-W15-46	141	143	B17XD5		8/16/2004					1.43	PPM(V/V)										
299-W15-46	141	143	B17XD6		8/16/2004					1.91	PPM(V/V)										
299-W15-46	141	143	B17XD7	R	8/16/2004					2.45	PPM(V/V)										
299-W15-46	141	143	B17XD8	R	8/16/2004					2.35	PPM(V/V)										
299-W15-46	159	160	B17XD9		8/19/2004					2.71	PPM(V/V)										
299-W15-46	159	160	B17XF0	R	8/19/2004					2	PPM(V/V)										
299-W15-46	159	160	B17XF1	R	8/19/2004					2.34	PPM(V/V)										
299-W15-46	159	160	B17XF2	R	8/19/2004					1.34	PPM(V/V)										
299-W15-46	159	160	B17XF3	R	8/19/2004					1.32	PPM(V/V)										
299-W15-46	174	176.5	B17N67		8/23/2004	2.1	µg/kg	U						2.1	µg/kg	U	2.1	µg/kg	U		
299-W15-46	184	186.3	B1B7J7		8/25/2004					2.71	PPM(V/V)										
299-W15-46	184	186.3	B1B7J8		8/25/2004					2.42	PPM(V/V)										

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Chloroform (67-66-3)				Chloroform (67-66-3)				Chloromethane (74-87-3)				cis-1,2- Dichloroethylene (156-59-2)			
						8260				B&K, field				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	184	186.3	B1B7J9		8/25/2004					2.02	PPM(V/V)										
299-W15-46	184	186.3	B1B7K0	R	8/25/2004					1.76	PPM(V/V)										
299-W15-46	184	186.3	B1B7K1	R	8/25/2004					1.84	PPM(V/V)										
299-W15-46	184	186.5	B17N70		8/25/2004	2.1	µg/kg	U						2.1	µg/kg	U		2.1	µg/kg	U	
299-W15-46	184	186.5	B17N74		8/25/2004	2.1	µg/kg	U						2.1	µg/kg	U					
299-W15-46	223	224	B1B7J2		9/9/2004					4.95	PPM(V/V)										
299-W15-46	223	224	B1B7J3		9/9/2004					5.09	PPM(V/V)										
299-W15-46	223	224	B1B7J4		9/9/2004					4.75	PPM(V/V)										
299-W15-46	223	224	B1B7J5	R	9/9/2004					5.03	PPM(V/V)										
299-W15-46	223	224	B1B7J6	R	9/9/2004					4.86	PPM(V/V)										
299-W15-46	224	226.5	B17N73		9/9/2004	2.1	µg/kg	U						2.1	µg/kg	U		2.1	µg/kg	U	
299-W15-46	226.5	229	B17NL5		9/9/2004	1.9	µg/kg	U						1.9	µg/kg	U		1.9	µg/kg	U	
			B17MM8	EB	9/23/2003	1	µg/L	U						1	µg/L	U					
					TQL (µg/kg)		5			5				5				10			

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	cis-1,3-Dichloropropene (10061-01-5)				Dibromochloromethane (124-48-1)				Ethylbenzene (100-41-4)				Hexachloroethane (67-72-1)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	28.5	29.5	B17RM4		10/13/2003																
299-W15-46	47.5	50	B17N46		10/20/2003									1.1	µg/kg	U					
299-W15-46	49.5	50	B17RM5		10/20/2003																
299-W15-46	49.5	50	B17RM6	R	10/20/2003																
299-W15-46	49.5	50	B17RM7	R	10/21/2003																
299-W15-46	49.5	50	B17RM8		10/21/2003																
299-W15-46	49.5	50	B18CX0	R	10/20/2003																
299-W15-46	49.5	50	B18CX1	R	10/21/2003																
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003																
299-W15-46	58.5	59.5	B17RN1		10/27/2003																
299-W15-46	58.5	59.5	B17RN2		10/27/2003																
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003																
299-W15-46	65	66	B17RN3	R	10/31/2003																
299-W15-46	65	66	B17RN4	R	10/31/2003																
299-W15-46	65	66	B17RN5		10/31/2003																
299-W15-46	65	66	B17RN6		10/31/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003									190	µg/kg	U					
299-W15-46	65	66	B17X85		11/4/2003																
299-W15-46	65	66	B17X86	R	11/4/2003																
299-W15-46	65	66	B17X87	R	11/4/2003																
299-W15-46	65	66	B17X96		3/15/2004																
299-W15-46	65	66	B17X97	R	3/15/2004																
299-W15-46	66	67	B17X90		11/10/2003																
299-W15-46	66	67	B17X91		11/10/2003																
299-W15-46	66	67	B17X92	R	11/10/2003																
299-W15-46	66	67	B17X93	R	11/10/2003																
299-W15-46	66	67.5	B17X98	R	3/15/2004																
299-W15-46	81	82	B17XB1		3/22/2004																
299-W15-46	81	82	B17XB2	R	3/22/2004																
299-W15-46	81	82	B17XB3	R	3/22/2004																
299-W15-46	90	92.5	B17N52		3/23/2004	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U					
299-W15-46	90	92.5	B17N61		3/23/2004									1.1	µg/kg	U					
299-W15-46	90	92.5	B17XB6		3/23/2004																
299-W15-46	90	92.5	B17XB7	R	3/23/2004																
299-W15-46	90	92.5	B17XB8	R	3/23/2004																
299-W15-46	110	112	B17XB9		4/12/2004																

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	cis-1,3-Dichloropropene (10061-01-5)				Dibromochloromethane (124-48-1)				Ethylbenzene (100-41-4)				Hexachloroethane (67-72-1)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	110	112	B17XC0	R	4/12/2004																
299-W15-46	110	112	B17XC1	R	4/12/2004																
299-W15-46	110	112	B17XC3		4/12/2004																
299-W15-46	109.5	112	B18XR8		4/8/2004								180	µg/kg	U						
299-W15-46	109.5	112	B18XW3		4/8/2004								0.88	µg/kg	U		5.2	µg/kg			
299-W15-46	115	117.5	B191Y4		4/19/2004								0.97	µg/kg	U						
299-W15-46	115	117.5	B191Y4-A		4/19/2004								97	µg/kg	U						
299-W15-46	117	119.5	B17N60		4/21/2004	2.1	µg/kg	U		2.1	µg/kg	U	2.1	µg/kg	U						
299-W15-46	117	119.5	B17N64		4/21/2004								1.2	µg/kg	U						
299-W15-46	117	119.5	B17N64-A		4/21/2004								0.82	µg/kg	U		15	µg/kg			
299-W15-46	117	119.5	B17N68		4/21/2004								110	µg/kg	U						
299-W15-46	118	119.5	B17XC4		4/22/2004																
299-W15-46	118	119.5	B17XC5		4/22/2004																
299-W15-46	118	119.5	B17XC6		4/22/2004																
299-W15-46	118	119.5	B17XC7	R	4/22/2004																
299-W15-46	118	119.5	B17XC8	R	4/22/2004																
299-W15-46	119.5	122	B17N63		5/3/2004	2.1	µg/kg	U		2.1	µg/kg	U	2.1	µg/kg	U						
299-W15-46	119.5	122	B17XC9		5/3/2004																
299-W15-46	119.5	122	B17XD0		5/3/2004																
299-W15-46	119.5	122	B17XD1		5/3/2004																
299-W15-46	119.5	122	B17XD2	R	5/3/2004																
299-W15-46	119.5	122	B17XD3	R	5/3/2004																
299-W15-46	119.5	122	B18XT1		5/3/2004	11	µg/kg	U		11	µg/kg	U	11	µg/kg	U						
299-W15-46	141	143	B17XD4		8/16/2004																
299-W15-46	141	143	B17XD5		8/16/2004																
299-W15-46	141	143	B17XD6		8/16/2004																
299-W15-46	141	143	B17XD7	R	8/16/2004																
299-W15-46	141	143	B17XD8	R	8/16/2004																
299-W15-46	159	160	B17XD9		8/19/2004																
299-W15-46	159	160	B17XF0	R	8/19/2004																
299-W15-46	159	160	B17XF1	R	8/19/2004																
299-W15-46	159	160	B17XF2	R	8/19/2004																
299-W15-46	159	160	B17XF3	R	8/19/2004																
299-W15-46	174	176.5	B17N67		8/23/2004	2.1	µg/kg	U		2.1	µg/kg	U	2.1	µg/kg	U						
299-W15-46	184	186.3	B1B7J7		8/25/2004																
299-W15-46	184	186.3	B1B7J8		8/25/2004																

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	cis-1,3-Dichloropropene (10061-01-5)				Dibromochloromethane (124-48-1)				Ethylbenzene (100-41-4)				Hexachloroethane (67-72-1)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	184	186.3	B1B7J9		8/25/2004																
299-W15-46	184	186.3	B1B7K0	R	8/25/2004																
299-W15-46	184	186.3	B1B7K1	R	8/25/2004																
299-W15-46	184	186.5	B17N70		8/25/2004	2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U					
299-W15-46	184	186.5	B17N74		8/25/2004	2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U					
299-W15-46	223	224	B1B7J2		9/9/2004																
299-W15-46	223	224	B1B7J3		9/9/2004																
299-W15-46	223	224	B1B7J4		9/9/2004																
299-W15-46	223	224	B1B7J5	R	9/9/2004																
299-W15-46	223	224	B1B7J6	R	9/9/2004																
299-W15-46	224	226.5	B17N73		9/9/2004	2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U					
299-W15-46	226.5	229	B17NL5		9/9/2004	1.9	µg/kg	U		1.9	µg/kg	U		1.9	µg/kg	U					
			B17MM8	EB	9/23/2003	1	µg/L	U		1	µg/L	U		1	µg/L	U					
					TQL (µg/kg)		N/A				N/A				5				N/A		

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Hexachloroethane (67-72-1)				Hexanal (66-25-1)				Hexane (110-54-3)				Methylene chloride (75-09-2)			
							8270				8260				8260				8260			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003	222-S												1.4	µg/kg	U		
299-W15-46	63.5	66	B17TM6		10/29/2003	222-S												250	µg/kg	U		
299-W15-46	90	92.5	B17N52		3/23/2004	RLNP	350	µg/kg	U					2	µg/kg	J		12	µg/kg			
299-W15-46	90	92.5	B17N61		3/23/2004	222-S												1.4	µg/kg	U		
299-W15-46	110	112	B17XB9		4/12/2004	FIELD																
299-W15-46	110	112	B17XC0	R	4/12/2004	FIELD																
299-W15-46	110	112	B17XC1	R	4/12/2004	FIELD																
299-W15-46	110	112	B17XC3		4/12/2004	FIELD																
299-W15-46	109.5	112	B18XR8		4/8/2004	222-S												240	µg/kg	U		
299-W15-46	109.5	112	B18XW3		4/8/2004	222-S												1.1	µg/kg	U		
299-W15-46	115	117.5	B191Y4		4/19/2004	222-S												1.2	µg/kg	U		
299-W15-46	115	117.5	B191Y4-A		4/19/2004	222-S												120	µg/kg	U		
299-W15-46	115	117.5	B191Y7		4/19/2004	RLNP	330	µg/kg	U													
299-W15-46	117	119.5	B17N60		4/21/2004	WSCF	490	µg/kg	U					2.1	µg/kg	U		2.1	µg/kg	U		
299-W15-46	117	119.5	B17N64		4/21/2004	222-S												1.5	µg/kg	U		
299-W15-46	117	119.5	B17N64-A		4/21/2004	222-S				13	µg/kg							1.1	µg/kg	U		
299-W15-46	117	119.5	B17N68		4/21/2004	222-S												140	µg/kg	U		
299-W15-46	118	119.5	B17XC4		4/22/2004	FIELD																
299-W15-46	118	119.5	B17XC5		4/22/2004	FIELD																
299-W15-46	118	119.5	B17XC6		4/22/2004	FIELD																
299-W15-46	118	119.5	B17XC7	R	4/22/2004	FIELD																
299-W15-46	118	119.5	B17XC8	R	4/22/2004	FIELD																
299-W15-46	119.5	122	B17N63		5/3/2004	WSCF	490	µg/kg	U					2.1	µg/kg	U		2.1	µg/kg	U		
299-W15-46	119.5	122	B17N65		5/3/2004	RLNP	380	µg/kg	U													
299-W15-46	119.5	122	B17XC9		5/3/2004	FIELD																
299-W15-46	119.5	122	B17XD0		5/3/2004	FIELD																
299-W15-46	119.5	122	B17XD1		5/3/2004	FIELD																
299-W15-46	119.5	122	B17XD2	R	5/3/2004	FIELD																
299-W15-46	119.5	122	B17XD3	R	5/3/2004	FIELD																
299-W15-46	119.5	122	B18XT1		5/3/2004	WSCF								11	µg/kg	U		20	µg/kg	J		
299-W15-46	141	143	B17XD4		8/16/2004	FIELD																
299-W15-46	141	143	B17XD5		8/16/2004	FIELD																
299-W15-46	141	143	B17XD6		8/16/2004	FIELD																
299-W15-46	141	143	B17XD7	R	8/16/2004	FIELD																
299-W15-46	141	143	B17XD8	R	8/16/2004	FIELD																
299-W15-46	159	160	B17XD9		8/19/2004	FIELD																
299-W15-46	159	160	B17XF0	R	8/19/2004	FIELD																

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Methylene chloride (75-09-2)				n-Butylbenzene (104-51-8)				Nitromethane (75-52-5)				n-Valeraldehyde (110-62-3)			
						B&K, field				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	90	92.5	B17N52		3/23/2004					5	µg/kg	U									
299-W15-46	90	92.5	B17N61		3/23/2004																
299-W15-46	110	112	B17XB9		4/12/2004	36.8	PPM(V/V)														
299-W15-46	110	112	B17XC0	R	4/12/2004	29.6	PPM(V/V)														
299-W15-46	110	112	B17XC1	R	4/12/2004	30.6	PPM(V/V)														
299-W15-46	110	112	B17XC3		4/12/2004	37	PPM(V/V)														
299-W15-46	109.5	112	B18XR8		4/8/2004																
299-W15-46	109.5	112	B18XW3		4/8/2004							5.5	µg/kg								
299-W15-46	115	117.5	B191Y4		4/19/2004																
299-W15-46	115	117.5	B191Y4-A		4/19/2004																
299-W15-46	115	117.5	B191Y7		4/19/2004																
299-W15-46	117	119.5	B17N60		4/21/2004					2.1	µg/kg	U									
299-W15-46	117	119.5	B17N64		4/21/2004																
299-W15-46	117	119.5	B17N64-A		4/21/2004														8.9	µg/kg	
299-W15-46	117	119.5	B17N68		4/21/2004																
299-W15-46	118	119.5	B17XC4		4/22/2004	1.08	PPM(V/V)	U													
299-W15-46	118	119.5	B17XC5		4/22/2004	1.41	PPM(V/V)														
299-W15-46	118	119.5	B17XC6		4/22/2004	1.04	PPM(V/V)														
299-W15-46	118	119.5	B17XC7	R	4/22/2004	2.42	PPM(V/V)														
299-W15-46	118	119.5	B17XC8	R	4/22/2004	2.2	PPM(V/V)														
299-W15-46	119.5	122	B17N63		5/3/2004					2.1	µg/kg	U									
299-W15-46	119.5	122	B17N65		5/3/2004																
299-W15-46	119.5	122	B17XC9		5/3/2004	4.28	PPM(V/V)														
299-W15-46	119.5	122	B17XD0		5/3/2004	4.42	PPM(V/V)														
299-W15-46	119.5	122	B17XD1		5/3/2004	3.75	PPM(V/V)														
299-W15-46	119.5	122	B17XD2	R	5/3/2004	4.56	PPM(V/V)														
299-W15-46	119.5	122	B17XD3	R	5/3/2004	4.42	PPM(V/V)														
299-W15-46	119.5	122	B18XT1		5/3/2004					11	µg/kg	U									
299-W15-46	141	143	B17XD4		8/16/2004	3.21	PPM(V/V)														
299-W15-46	141	143	B17XD5		8/16/2004	3.02	PPM(V/V)														
299-W15-46	141	143	B17XD6		8/16/2004	3.11	PPM(V/V)														
299-W15-46	141	143	B17XD7	R	8/16/2004	3.01	PPM(V/V)														
299-W15-46	141	143	B17XD8	R	8/16/2004	3.25	PPM(V/V)														
299-W15-46	159	160	B17XD9		8/19/2004	6.26	PPM(V/V)														
299-W15-46	159	160	B17XF0	R	8/19/2004	7.02	PPM(V/V)														

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Styrene (100-42-5)				Tetrachloroethene (127-18-4)				Tetrahydrofuran (109-99-9)				Toluene (108-88-3)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003					0.76	µg/kg	U					0.7	µg/kg	U		
299-W15-46	63.5	66	B17TM6		10/29/2003					17000	µg/kg						130	µg/kg	U		
299-W15-46	90	92.5	B17N52		3/23/2004	5	µg/kg	U		5	µg/kg	U					5	µg/kg	U		
299-W15-46	90	92.5	B17N61		3/23/2004					0.77	µg/kg	U		9.6	µg/kg	J		0.71	µg/kg	U	
299-W15-46	110	112	B17XB9		4/12/2004																
299-W15-46	110	112	B17XC0	R	4/12/2004																
299-W15-46	110	112	B17XC1	R	4/12/2004																
299-W15-46	110	112	B17XC3		4/12/2004																
299-W15-46	109.5	112	B18XR8		4/8/2004					130	µg/kg	U					120	µg/kg	U		
299-W15-46	109.5	112	B18XW3		4/8/2004					0.94	µg/kg			112	µg/kg			0.57	µg/kg	U	
299-W15-46	115	117.5	B191Y4		4/19/2004	2.9	µg/kg			1.6	µg/kg			51	µg/kg			0.97	µg/kg		
299-W15-46	115	117.5	B191Y4-A		4/19/2004					69	µg/kg	U						63	µg/kg	U	
299-W15-46	115	117.5	B191Y7		4/19/2004																
299-W15-46	117	119.5	B17N60		4/21/2004	2.1	µg/kg	U		2.1	µg/kg	U						2.1	µg/kg	U	
299-W15-46	117	119.5	B17N64		4/21/2004					2	µg/kg			93	µg/kg			1.3	µg/kg		
299-W15-46	117	119.5	B17N64-A		4/21/2004					5.4	µg/kg			36	µg/kg			0.54	µg/kg	U	
299-W15-46	117	119.5	B17N68		4/21/2004					77	µg/kg	U						71	µg/kg	U	
299-W15-46	118	119.5	B17XC4		4/22/2004																
299-W15-46	118	119.5	B17XC5		4/22/2004																
299-W15-46	118	119.5	B17XC6		4/22/2004																
299-W15-46	118	119.5	B17XC7	R	4/22/2004																
299-W15-46	118	119.5	B17XC8	R	4/22/2004																
299-W15-46	119.5	122	B17N63		5/3/2004	2.1	µg/kg	U		2.1	µg/kg	U						2.1	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004																
299-W15-46	119.5	122	B17XC9		5/3/2004																
299-W15-46	119.5	122	B17XD0		5/3/2004																
299-W15-46	119.5	122	B17XD1		5/3/2004																
299-W15-46	119.5	122	B17XD2	R	5/3/2004																
299-W15-46	119.5	122	B17XD3	R	5/3/2004																
299-W15-46	119.5	122	B18XT1		5/3/2004	11	µg/kg	U		11	µg/kg	U						11	µg/kg	U	
299-W15-46	141	143	B17XD4		8/16/2004																
299-W15-46	141	143	B17XD5		8/16/2004																
299-W15-46	141	143	B17XD6		8/16/2004																
299-W15-46	141	143	B17XD7	R	8/16/2004																
299-W15-46	141	143	B17XD8	R	8/16/2004																
299-W15-46	159	160	B17XD9		8/19/2004																
299-W15-46	159	160	B17XF0	R	8/19/2004																

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Styrene (100-42-5)				Tetrachloroethene (127-18-4)				Tetrahydrofuran (109-99-9)				Toluene (108-88-3)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	159	160	B17XF1	R	8/19/2004																
299-W15-46	159	160	B17XF2	R	8/19/2004																
299-W15-46	159	160	B17XF3	R	8/19/2004																
299-W15-46	174	176.5	B17N67		8/23/2004	2.1	µg/kg	U		2.1	µg/kg	U					2.1	µg/kg	U		
299-W15-46	184	186.3	B1B7J7		8/25/2004																
299-W15-46	184	186.3	B1B7J8		8/25/2004																
299-W15-46	184	186.3	B1B7J9		8/25/2004																
299-W15-46	184	186.3	B1B7K0	R	8/25/2004																
299-W15-46	184	186.3	B1B7K1	R	8/25/2004																
299-W15-46	184	186.5	B17N70		8/25/2004	3.4	µg/kg	J		2.1	µg/kg	U					2.1	µg/kg	U		
299-W15-46	184	186.5	B17N74		8/25/2004	2.1	µg/kg	U		2.1	µg/kg	U					2.1	µg/kg	U		
299-W15-46	223	224	B1B7J2		9/9/2004																
299-W15-46	223	224	B1B7J3		9/9/2004																
299-W15-46	223	224	B1B7J4		9/9/2004																
299-W15-46	223	224	B1B7J5	R	9/9/2004																
299-W15-46	223	224	B1B7J6	R	9/9/2004																
299-W15-46	224	226.5	B17N73		9/9/2004	2.1	µg/kg	U		2.1	µg/kg	U					2.1	µg/kg	U		
299-W15-46	226.5	229	B17NL5		9/9/2004	1.9	µg/kg	U		1.9	µg/kg	U					1.9	µg/kg	U		
			B17MM8	EB	9/23/2003	1	µg/L	U		1	µg/L	U					1	µg/L	U		
					TQL (µg/kg)		N/A			5				N/A			5				

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	trans-1,2-Dichloroethylene (156-60-5)				trans-1,3-Dichloropropene (10061-02-6)				Tribromoethylene (598-16-3)				Trichloroethene (79-01-6)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003												0.94	µg/kg	U		
299-W15-46	63.5	66	B17TM6		10/29/2003												170	µg/kg	U		
299-W15-46	90	92.5	B17N52		3/23/2004	5	µg/kg	U		5	µg/kg	U					5	µg/kg	U		
299-W15-46	90	92.5	B17N61		3/23/2004												0.95	µg/kg	U		
299-W15-46	110	112	B17XB9		4/12/2004																
299-W15-46	110	112	B17XC0	R	4/12/2004																
299-W15-46	110	112	B17XC1	R	4/12/2004																
299-W15-46	110	112	B17XC3		4/12/2004																
299-W15-46	109.5	112	B18XR8		4/8/2004												160	µg/kg	U		
299-W15-46	109.5	112	B18XW3		4/8/2004												0.77	µg/kg	U		
299-W15-46	115	117.5	B191Y4		4/19/2004												1.1	µg/kg			
299-W15-46	115	117.5	B191Y4-A		4/19/2004												85	µg/kg	U		
299-W15-46	115	117.5	B191Y7		4/19/2004																
299-W15-46	117	119.5	B17N60		4/21/2004	2.1	µg/kg	U		2.1	µg/kg	U					2.1	µg/kg	U		
299-W15-46	117	119.5	B17N64		4/21/2004												1	µg/kg	U		
299-W15-46	117	119.5	B17N64-A		4/21/2004							5.7	µg/kg				0.72	µg/kg	U		
299-W15-46	117	119.5	B17N68		4/21/2004												95	µg/kg	U		
299-W15-46	118	119.5	B17XC4		4/22/2004																
299-W15-46	118	119.5	B17XC5		4/22/2004																
299-W15-46	118	119.5	B17XC6		4/22/2004																
299-W15-46	118	119.5	B17XC7	R	4/22/2004																
299-W15-46	118	119.5	B17XC8	R	4/22/2004																
299-W15-46	119.5	122	B17N63		5/3/2004	2.1	µg/kg	U		2.1	µg/kg	U					2.1	µg/kg	U		
299-W15-46	119.5	122	B17N65		5/3/2004																
299-W15-46	119.5	122	B17XC9		5/3/2004																
299-W15-46	119.5	122	B17XD0		5/3/2004																
299-W15-46	119.5	122	B17XD1		5/3/2004																
299-W15-46	119.5	122	B17XD2	R	5/3/2004																
299-W15-46	119.5	122	B17XD3	R	5/3/2004																
299-W15-46	119.5	122	B18XT1		5/3/2004					11	µg/kg	U					11	µg/kg	U		
299-W15-46	141	143	B17XD4		8/16/2004																
299-W15-46	141	143	B17XD5		8/16/2004																
299-W15-46	141	143	B17XD6		8/16/2004																
299-W15-46	141	143	B17XD7	R	8/16/2004																
299-W15-46	141	143	B17XD8	R	8/16/2004																
299-W15-46	159	160	B17XD9		8/19/2004																
299-W15-46	159	160	B17XF0	R	8/19/2004																

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	trans-1,2-Dichloroethylene (156-60-5)				trans-1,3-Dichloropropene (10061-02-6)				Tribromoethylene (598-16-3)				Trichloroethene (79-01-6)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	159	160	B17XF1	R	8/19/2004																
299-W15-46	159	160	B17XF2	R	8/19/2004																
299-W15-46	159	160	B17XF3	R	8/19/2004																
299-W15-46	174	176.5	B17N67		8/23/2004	2.1	µg/kg	U		2.1	µg/kg	U					2.1	µg/kg	U		
299-W15-46	184	186.3	B1B7J7		8/25/2004																
299-W15-46	184	186.3	B1B7J8		8/25/2004																
299-W15-46	184	186.3	B1B7J9		8/25/2004																
299-W15-46	184	186.3	B1B7K0	R	8/25/2004																
299-W15-46	184	186.3	B1B7K1	R	8/25/2004																
299-W15-46	184	186.5	B17N70		8/25/2004	2.1	µg/kg	U		2.1	µg/kg	U					2.1	µg/kg	U		
299-W15-46	184	186.5	B17N74		8/25/2004					2.1	µg/kg	U					2.1	µg/kg	U		
299-W15-46	223	224	B1B7J2		9/9/2004																
299-W15-46	223	224	B1B7J3		9/9/2004																
299-W15-46	223	224	B1B7J4		9/9/2004																
299-W15-46	223	224	B1B7J5	R	9/9/2004																
299-W15-46	223	224	B1B7J6	R	9/9/2004																
299-W15-46	224	226.5	B17N73		9/9/2004	2.1	µg/kg	U		2.1	µg/kg	U					2.1	µg/kg	U		
299-W15-46	226.5	229	B17NL5		9/9/2004	1.9	µg/kg	U		1.9	µg/kg	U					1.9	µg/kg	U		
			B17MM8	EB	9/23/2003	1	µg/L	U		1	µg/L	U					1	µg/L	U		
					TQL (µg/kg)	10				N/A				N/A				5			

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Vinyl chloride (75-01-4)				Xylenes (total) (1330-20-7)			
						8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003	1.6	µg/kg	U		1.7	µg/kg	U	
299-W15-46	63.5	66	B17TM6		10/29/2003	290	µg/kg	U		310	µg/kg	U	
299-W15-46	90	92.5	B17N52		3/23/2004	10	µg/kg	U		5	µg/kg	U	
299-W15-46	90	92.5	B17N61		3/23/2004	1.7	µg/kg	U		1.8	µg/kg	U	
299-W15-46	110	112	B17XB9		4/12/2004								
299-W15-46	110	112	B17XC0	R	4/12/2004								
299-W15-46	110	112	B17XC1	R	4/12/2004								
299-W15-46	110	112	B17XC3		4/12/2004								
299-W15-46	109.5	112	B18XR8		4/8/2004	560	µg/kg	U		300	µg/kg	U	
299-W15-46	109.5	112	B18XW3		4/8/2004	1.3	µg/kg	U		1.4	µg/kg	U	
299-W15-46	115	117.5	B191Y4		4/19/2004	1.5	µg/kg	U		1.6	µg/kg	U	
299-W15-46	115	117.5	B191Y4-A		4/19/2004	150	µg/kg	U		160	µg/kg	U	
299-W15-46	115	117.5	B191Y7		4/19/2004								
299-W15-46	117	119.5	B17N60		4/21/2004	2.1	µg/kg	U		2.1	µg/kg	U	
299-W15-46	117	119.5	B17N64		4/21/2004	1.8	µg/kg	U		1.9	µg/kg	U	
299-W15-46	117	119.5	B17N64-A		4/21/2004	1.3	µg/kg	U		1.3	µg/kg	U	
299-W15-46	117	119.5	B17N68		4/21/2004	170	µg/kg	U		180	µg/kg	U	
299-W15-46	118	119.5	B17XC4		4/22/2004								
299-W15-46	118	119.5	B17XC5		4/22/2004								
299-W15-46	118	119.5	B17XC6		4/22/2004								
299-W15-46	118	119.5	B17XC7	R	4/22/2004								
299-W15-46	118	119.5	B17XC8	R	4/22/2004								
299-W15-46	119.5	122	B17N63		5/3/2004	2.1	µg/kg	U		2.1	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004								
299-W15-46	119.5	122	B17XC9		5/3/2004								
299-W15-46	119.5	122	B17XD0		5/3/2004								
299-W15-46	119.5	122	B17XD1		5/3/2004								
299-W15-46	119.5	122	B17XD2	R	5/3/2004								
299-W15-46	119.5	122	B17XD3	R	5/3/2004								
299-W15-46	119.5	122	B18XT1		5/3/2004	11	µg/kg	U		11	µg/kg	U	
299-W15-46	141	143	B17XD4		8/16/2004								
299-W15-46	141	143	B17XD5		8/16/2004								
299-W15-46	141	143	B17XD6		8/16/2004								
299-W15-46	141	143	B17XD7	R	8/16/2004								
299-W15-46	141	143	B17XD8	R	8/16/2004								
299-W15-46	159	160	B17XD9		8/19/2004								
299-W15-46	159	160	B17XF0	R	8/19/2004								

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Table B-5. Volatile Organic Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (40 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Vinyl chloride (75-01-4)				Xylenes (total) (1330-20-7)				
						8260				8260				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
299-W15-46	159	160	B17XF1	R	8/19/2004									
299-W15-46	159	160	B17XF2	R	8/19/2004									
299-W15-46	159	160	B17XF3	R	8/19/2004									
299-W15-46	174	176.5	B17N67		8/23/2004	2.1	µg/kg	U		2.1	µg/kg	U		
299-W15-46	184	186.3	B1B7J7		8/25/2004									
299-W15-46	184	186.3	B1B7J8		8/25/2004									
299-W15-46	184	186.3	B1B7J9		8/25/2004									
299-W15-46	184	186.3	B1B7K0	R	8/25/2004									
299-W15-46	184	186.3	B1B7K1	R	8/25/2004									
299-W15-46	184	186.5	B17N70		8/25/2004	2.1	µg/kg	U		2.1	µg/kg	U		
299-W15-46	184	186.5	B17N74		8/25/2004	2.1	µg/kg	U		2.1	µg/kg	U		
299-W15-46	223	224	B1B7J2		9/9/2004									
299-W15-46	223	224	B1B7J3		9/9/2004									
299-W15-46	223	224	B1B7J4		9/9/2004									
299-W15-46	223	224	B1B7J5	R	9/9/2004									
299-W15-46	223	224	B1B7J6	R	9/9/2004									
299-W15-46	224	226.5	B17N73		9/9/2004	2.1	µg/kg	U		2.1	µg/kg	U		
299-W15-46	226.5	229	B17NL5		9/9/2004	1.9	µg/kg	U		1.9	µg/kg	U		
			B17MM8	EB	9/23/2003	1	µg/L	U		1	µg/L	U		
					TQL (µg/kg)		N/A				5			

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Table B-6. Physical Property Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Percent passing 3 inch sieve (PAS3IN)				Percent passing 1.5 inch sieve (PAS1.5IN)				Percent passing 3/4 inch sieve (PAS3/4IN)				Percent passing 3/8 inch sieve (PAS3/8IN)			
							D422				D422				D422				D422			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003	222-S																
299-W15-46	63.5	66	B17TM6		10/29/2003	222-S																
299-W15-46	90	92.5	B17N52		3/23/2004	RLNP																
299-W15-46	90	92.5	B17N53		3/23/2004	SHAW	100	%			100	%			100	%			100	%		
299-W15-46	109.5	112	B18XP8		4/8/2004	222-S																
299-W15-46	115	117.5	B191Y6		4/19/2004	SHAW	100	%			100	%			100	%			100	%		
299-W15-46	117	119.5	B17N60		4/21/2004	WSCF																
299-W15-46	117	119.5	B17T82		4/21/2004	SHAW	100	%			100	%			100	%			91.1	%		
299-W15-46	119.5	122	B17N63		5/3/2004	WSCF																
299-W15-46	119.5	122	B17N65		5/3/2004	RLNP																
299-W15-46	119.5	122	B17RM3		5/3/2004	SHAW	100	%			100	%			94	%			87.4	%		
299-W15-46	174	176.5	B17N67		8/23/2004	WSCF																
299-W15-46	174	176.5	B17N69		8/23/2004	RLNP																
299-W15-46	184	186.5	B17N70		8/25/2004	WSCF																
299-W15-46	184	186.5	B17N72		8/25/2004	RLNP																
299-W15-46	184	186.5	B17T84		8/25/2004	SHAW	100	%			100	%			81.8	%			50.8	%		
299-W15-46	224	226.5	B17N73		9/9/2004	WSCF																
299-W15-46	224	226.5	B17NL3		9/9/2004	RLNP																
299-W15-46	224	226.5	B17NL4		9/9/2004	SHAW	100	%			100	%			85.7	%			65	%		
299-W15-46	226.5	229	B17NL5		9/9/2004	WSCF																
299-W15-46	226.5	229	B17NL7		9/9/2004	RLNP																
			B17MM8	EB	9/23/2003	WSCF																

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Table B-6. Physical Property Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Percent passing No.4 sieve (PAS#4)				Percent passing No.10 sieve (PAS#10)				Percent passing No.20 sieve (PAS#20)				Percent passing No.40 sieve (PAS#40)			
						D422				D422				D422				D422			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	90	92.5	B17N52		3/23/2004																
299-W15-46	90	92.5	B17N53		3/23/2004	100	%			99.5	%			91.7	%			69.8	%		
299-W15-46	109.5	112	B18XR8		4/8/2004																
299-W15-46	115	117.5	B191Y6		4/19/2004	100	%			100	%			100	%			100	%		
299-W15-46	117	119.5	B17N60		4/21/2004																
299-W15-46	117	119.5	B17T82		4/21/2004	82.9	%			68.3	%			56.5	%			51.1	%		
299-W15-46	119.5	122	B17N63		5/3/2004																
299-W15-46	119.5	122	B17N65		5/3/2004																
299-W15-46	119.5	122	B17RM3		5/3/2004	79.6	%			69.7	%			57.9	%			49.5	%		
299-W15-46	174	176.5	B17N67		8/23/2004																
299-W15-46	174	176.5	B17N69		8/23/2004																
299-W15-46	184	186.5	B17N70		8/25/2004																
299-W15-46	184	186.5	B17N72		8/25/2004																
299-W15-46	184	186.5	B17T84		8/25/2004	36.8	%			30.7	%			27.4	%			25.2	%		
299-W15-46	224	226.5	B17N73		9/9/2004																
299-W15-46	224	226.5	B17NL3		9/9/2004																
299-W15-46	224	226.5	B17NL4		9/9/2004	44.9	%			38.4	%			33.6	%			29	%		
299-W15-46	226.5	229	B17NL5		9/9/2004																
299-W15-46	226.5	229	B17NL7		9/9/2004																
			B17MM8	EB	9/23/2003																

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Table B-6. Physical Property Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Percent passing No.60 sieve (PAS#60)				Percent passing No.100 sieve (PAS#100)				Percent passing No.140 sieve (PAS#140)				Percent passing No.200 sieve (PAS#200)			
						D422				D422				D422				D422			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	90	92.5	B17N52		3/23/2004																
299-W15-46	90	92.5	B17N53		3/23/2004	49.4	%			36	%			28.1	%			18.9	%		
299-W15-46	109.5	112	B18XR8		4/8/2004																
299-W15-46	115	117.5	B191Y6		4/19/2004	99.1	%			96.2	%			90.8	%			75.5	%		
299-W15-46	117	119.5	B17N60		4/21/2004																
299-W15-46	117	119.5	B17T82		4/21/2004	48.5	%			46.2	%			44.9	%			42.4	%		
299-W15-46	119.5	122	B17N63		5/3/2004																
299-W15-46	119.5	122	B17N65		5/3/2004																
299-W15-46	119.5	122	B17RM3		5/3/2004	43.9	%			39	%			36	%			32.7	%		
299-W15-46	174	176.5	B17N67		8/23/2004																
299-W15-46	174	176.5	B17N69		8/23/2004																
299-W15-46	184	186.5	B17N70		8/25/2004																
299-W15-46	184	186.5	B17N72		8/25/2004																
299-W15-46	184	186.5	B17T84		8/25/2004	23.4	%			20.7	%			16.6	%			12	%		
299-W15-46	224	226.5	B17N73		9/9/2004																
299-W15-46	224	226.5	B17NL3		9/9/2004																
299-W15-46	224	226.5	B17NL4		9/9/2004	22.4	%			17.3	%			15	%			13.1	%		
299-W15-46	226.5	229	B17NL5		9/9/2004																
299-W15-46	226.5	229	B17NL7		9/9/2004																
			B17MM8	EB	9/23/2003																

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Table B-6. Physical Property Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Bulk density - dry (BULKDENSITY-DRY)				Bulk density - wet (BULKDENSITY-WET)				Cation Exchange Capacity (CEC)				Hydraulic Conductivity (HYDCON)			
						D2937				D2937				9081				D5084			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	90	92.5	B17N52		3/23/2004								2.8	mEQ/100g							
299-W15-46	90	92.5	B17N53		3/23/2004	1676	kg/m3			1759	kg/m3						0.000016	cm/s			
299-W15-46	109.5	112	B18XR8		4/8/2004																
299-W15-46	115	117.5	B191Y6		4/19/2004																
299-W15-46	117	119.5	B17N60		4/21/2004																
299-W15-46	117	119.5	B17T82		4/21/2004	1430	kg/m3			1608	kg/m3						0.0000003	4	cm/s		
299-W15-46	119.5	122	B17N63		5/3/2004																
299-W15-46	119.5	122	B17N65		5/3/2004								11.2	mEQ/100g	D						
299-W15-46	119.5	122	B17RM3		5/3/2004	1898	kg/m3			2015	kg/m3						0.0000003	4	cm/s		
299-W15-46	174	176.5	B17N67		8/23/2004																
299-W15-46	174	176.5	B17N69		8/23/2004								7.4	mEQ/100g							
299-W15-46	184	186.5	B17N70		8/25/2004																
299-W15-46	184	186.5	B17N72		8/25/2004								18.4	mEQ/100g							
299-W15-46	184	186.5	B17T84		8/25/2004	2102	kg/m3			2150	kg/m3						0.0000008	1	cm/s		
299-W15-46	224	226.5	B17N73		9/9/2004																
299-W15-46	224	226.5	B17NL3		9/9/2004								13.2	mEQ/100g							
299-W15-46	224	226.5	B17NL4		9/9/2004	1752	kg/m3			1857	kg/m3						0.000029	cm/s			
299-W15-46	226.5	229	B17NL5		9/9/2004																
299-W15-46	226.5	229	B17NL7		9/9/2004								25.6	mEQ/100g							
			B17MM8	EB	9/23/2003																

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Table B-6. Physical Property Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Percent moisture (dry sample) (%MOISTURE-D)				Percent moisture (wet sample) (%MOISTURE)				Percent Solids (%SOLIDS)				pH Measurement (PH)			
						D2216				D2216				Gravimetry				150.1			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	47.5	50	B17N46		10/20/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003																
299-W15-46	90	92.5	B17N52		3/23/2004																
299-W15-46	90	92.5	B17N53		3/23/2004	4.4	%			4.2	%			95.8	%						
299-W15-46	109.5	112	B18XR8		4/8/2004																
299-W15-46	115	117.5	B191Y6		4/19/2004	23.6	%			19.1	%			80.9	%						
299-W15-46	117	119.5	B17N60		4/21/2004													7.41	pH		
299-W15-46	117	119.5	B17T82		4/21/2004	6.2	%			5.8	%			94.2	%						
299-W15-46	119.5	122	B17N63		5/3/2004													8.316	pH		
299-W15-46	119.5	122	B17N65		5/3/2004																
299-W15-46	119.5	122	B17RM3		5/3/2004	5.5	%			5.2	%			94.8	%						
299-W15-46	174	176.5	B17N67		8/23/2004													9.377	pH		
299-W15-46	174	176.5	B17N69		8/23/2004													9.379	pH		
299-W15-46	184	186.5	B17N70		8/25/2004																
299-W15-46	184	186.5	B17N72		8/25/2004																
299-W15-46	184	186.5	B17T84		8/25/2004	2.9	%			2.8	%			97.2	%						
299-W15-46	224	226.5	B17N73		9/9/2004													8.454	pH		
299-W15-46	224	226.5	B17NL3		9/9/2004																
299-W15-46	224	226.5	B17NL4		9/9/2004	6	%			5.7	%										
299-W15-46	226.5	229	B17NL5		9/9/2004													8.059	pH		
299-W15-46	226.5	229	B17NL7		9/9/2004																
			B17MM8	EB	9/23/2003													6.038	pH		

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Table B-6. Physical Property Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	pH Measurement (PH)				Specific Gravity (SPECGVTY)							
						9045				D854							
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ				
299-W15-46	47.5	50	B17N46		10/20/2003	6.5	pH										
299-W15-46	63.5	66	B17TM6		10/29/2003	3.86	pH										
299-W15-46	90	92.5	B17N52		3/23/2004	8.4	pH										
299-W15-46	90	92.5	B17N53		3/23/2004					2.7201	unitless						
299-W15-46	109.5	112	B18XR8		4/8/2004	5.97	pH										
299-W15-46	115	117.5	B191Y6		4/19/2004												
299-W15-46	117	119.5	B17N60		4/21/2004												
299-W15-46	117	119.5	B17T82		4/21/2004					2.7705	unitless						
299-W15-46	119.5	122	B17N63		5/3/2004												
299-W15-46	119.5	122	B17N65		5/3/2004												
299-W15-46	119.5	122	B17RM3		5/3/2004					2.8383	unitless						
299-W15-46	174	176.5	B17N67		8/23/2004												
299-W15-46	174	176.5	B17N69		8/23/2004												
299-W15-46	184	186.5	B17N70		8/25/2004												
299-W15-46	184	186.5	B17N72		8/25/2004												
299-W15-46	184	186.5	B17T84		8/25/2004					2.7326	unitless						
299-W15-46	224	226.5	B17N73		9/9/2004												
299-W15-46	224	226.5	B17NL3		9/9/2004												
299-W15-46	224	226.5	B17NL4		9/9/2004					2.7576	unitless						
299-W15-46	226.5	229	B17NL5		9/9/2004												
299-W15-46	226.5	229	B17NL7		9/9/2004												
			B17MM8	EB	9/23/2003												

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Table B-7. Wet Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)			
						335.2				9010				300				300			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	28.5	29.5	B17RM4		10/13/2003																
299-W15-46	47.5	50	B17N46		10/20/2003				624	µg/kg	U		7050	µg/kg			12100	µg/kg	U		
299-W15-46	47.5	50	B17N46-B		10/20/2003																
299-W15-46	49.5	50	B17RM5		10/20/2003																
299-W15-46	49.5	50	B17RM6	R	10/20/2003																
299-W15-46	49.5	50	B17RM7	R	10/21/2003																
299-W15-46	49.5	50	B17RM8		10/21/2003																
299-W15-46	49.5	50	B18CX0	R	10/20/2003																
299-W15-46	49.5	50	B18CX1	R	10/21/2003																
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003																
299-W15-46	58.5	59.5	B17RN1		10/27/2003																
299-W15-46	58.5	59.5	B17RN2		10/27/2003																
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003																
299-W15-46	65	66	B17RN3	R	10/31/2003																
299-W15-46	65	66	B17RN4	R	10/31/2003																
299-W15-46	65	66	B17RN5		10/31/2003																
299-W15-46	65	66	B17RN6		10/31/2003																
299-W15-46	63.5	66	B17TM6		10/29/2003				477	µg/kg	U		3020	µg/kg			12100	µg/kg	U		
299-W15-46	63.5	66	B17TM6-B		10/29/2003																
299-W15-46	65	66	B17X85		11/4/2003																
299-W15-46	65	66	B17X86	R	11/4/2003																
299-W15-46	65	66	B17X87	R	11/4/2003																
299-W15-46	65	66	B17X96		3/15/2004																
299-W15-46	65	66	B17X97	R	3/15/2004																
299-W15-46	66	67	B17X90		11/10/2003																
299-W15-46	66	67	B17X91		11/10/2003																
299-W15-46	66	67	B17X92	R	11/10/2003																
299-W15-46	66	67	B17X93	R	11/10/2003																
299-W15-46	66	67.5	B17X98	R	3/15/2004																
299-W15-46	81	82	B17XB1		3/22/2004																
299-W15-46	81	82	B17XB2	R	3/22/2004																
299-W15-46	81	82	B17XB3	R	3/22/2004																
299-W15-46	90	92.5	B17N52		3/23/2004				480	µg/kg	U		7800	µg/kg			1300	µg/kg	U		
299-W15-46	90	92.5	B17XB6		3/23/2004																
299-W15-46	90	92.5	B17XB7	R	3/23/2004																
299-W15-46	90	92.5	B17XB8	R	3/23/2004																
299-W15-46	110	112	B17XB9		4/12/2004																

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Table B-7. Wet Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)			
						335.2				9010				300				300			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	110	112	B17XC0	R	4/12/2004																
299-W15-46	110	112	B17XC1	R	4/12/2004																
299-W15-46	110	112	B17XC3		4/12/2004																
299-W15-46	109.5	112	B18XR8		4/8/2004					451	µg/kg	U		24900	µg/kg	U		249000	µg/kg	U	
299-W15-46	115	117.5	B191Y7		4/19/2004									2400	µg/kg	J		1200	µg/kg	U	
299-W15-46	117	119.5	B17N60		4/21/2004	200	µg/kg	U						3720	µg/kg			8280	µg/kg	UE	
299-W15-46	118	119.5	B17XC4		4/22/2004																
299-W15-46	118	119.5	B17XC5		4/22/2004																
299-W15-46	118	119.5	B17XC6		4/22/2004																
299-W15-46	118	119.5	B17XC7	R	4/22/2004																
299-W15-46	118	119.5	B17XC8	R	4/22/2004																
299-W15-46	119.5	122	B17N63		5/3/2004	200	µg/kg	U						5420	µg/kg			8430	µg/kg	U	
299-W15-46	119.5	122	B17N65		5/3/2004									6800	µg/kg			1400	µg/kg	U	
299-W15-46	119.5	122	B17XC9		5/3/2004																
299-W15-46	119.5	122	B17XD0		5/3/2004																
299-W15-46	119.5	122	B17XD1		5/3/2004																
299-W15-46	119.5	122	B17XD2	R	5/3/2004																
299-W15-46	119.5	122	B17XD3	R	5/3/2004																
299-W15-46	141	143	B17XD4		8/16/2004																
299-W15-46	141	143	B17XD5		8/16/2004																
299-W15-46	141	143	B17XD6		8/16/2004																
299-W15-46	141	143	B17XD7	R	8/16/2004																
299-W15-46	141	143	B17XD8	R	8/16/2004																
299-W15-46	159	160	B17XD9		8/19/2004																
299-W15-46	159	160	B17XF0	R	8/19/2004																
299-W15-46	159	160	B17XF1	R	8/19/2004																
299-W15-46	159	160	B17XF2	R	8/19/2004																
299-W15-46	159	160	B17XF3	R	8/19/2004																
299-W15-46	174	176.5	B17N67		8/23/2004	200	µg/kg	U						1150	µg/kg	U		8280	µg/kg	U	
299-W15-46	174	176.5	B17N69		8/23/2004																
299-W15-46	184	186.3	B1B7J7		8/25/2004																
299-W15-46	184	186.3	B1B7J8		8/25/2004																
299-W15-46	184	186.3	B1B7J9		8/25/2004																
299-W15-46	184	186.3	B1B7K0	R	8/25/2004																
299-W15-46	184	186.3	B1B7K1	R	8/25/2004																
299-W15-46	184	186.5	B17N70		8/25/2004	200	µg/kg	U						1150	µg/kg	U		8280	µg/kg	U	
299-W15-46	184	186.5	B17N72		8/25/2004																

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Table B-7. Wet Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)			
						335.2				9010				300				300			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	223	224	B1B7J2		9/9/2004																
299-W15-46	223	224	B1B7J3		9/9/2004																
299-W15-46	223	224	B1B7J4		9/9/2004																
299-W15-46	223	224	B1B7J5	R	9/9/2004																
299-W15-46	223	224	B1B7J6	R	9/9/2004																
299-W15-46	224	226.5	B17N73		9/9/2004	200	µg/kg	U					1150	µg/kg	U		8280	µg/kg	U		
299-W15-46	224	226.5	B17NL3		9/9/2004																
299-W15-46	226.5	229	B17NL5		9/9/2004	200	µg/kg	U					1150	µg/kg	U		8280	µg/kg	U		
299-W15-46	226.5	229	B17NL7		9/9/2004																
			B17MM8	EB	9/23/2003	4	µg/L	U					23	µg/L	U		166	µg/L	U		
			B17MM9	EB	9/23/2003																
					TQL (µg/kg)	N/A				N/A				5000				5000			

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Table B-7. Wet Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sulfate (14808-79-8)				Sulfide (18496-25-8)				Water (Vapor) (7732-18-5)			
						300				9030				PAA			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	28.5	29.5	B17RM4		10/13/2003									9640	PPM(V/V)		
299-W15-46	47.5	50	B17N46		10/20/2003	170000	µg/kg			10600	µg/kg	U					
299-W15-46	47.5	50	B17N46-B		10/20/2003												
299-W15-46	49.5	50	B17RM5		10/20/2003									12000	PPM(V/V)		
299-W15-46	49.5	50	B17RM6	R	10/20/2003									12300	PPM(V/V)		
299-W15-46	49.5	50	B17RM7	R	10/21/2003									9430	PPM(V/V)		
299-W15-46	49.5	50	B17RM8		10/21/2003									9450	PPM(V/V)		
299-W15-46	49.5	50	B18CX0	R	10/20/2003									12300	PPM(V/V)		
299-W15-46	49.5	50	B18CX1	R	10/21/2003									9510	PPM(V/V)		
299-W15-46	58.5	59.5	B17RN0	R	10/27/2003									5830	PPM(V/V)		
299-W15-46	58.5	59.5	B17RN1		10/27/2003									5560	PPM(V/V)		
299-W15-46	58.5	59.5	B17RN2		10/27/2003									5600	PPM(V/V)		
299-W15-46	58.5	59.5	B18CX3	R	10/27/2003									5850	PPM(V/V)		
299-W15-46	65	66	B17RN3	R	10/31/2003									2310	PPM(V/V)		
299-W15-46	65	66	B17RN4	R	10/31/2003									2310	PPM(V/V)		
299-W15-46	65	66	B17RN5		10/31/2003									2310	PPM(V/V)		
299-W15-46	65	66	B17RN6		10/31/2003									2290	PPM(V/V)		
299-W15-46	63.5	66	B17TM6		10/29/2003	456000	µg/kg			10600	µg/kg	U					
299-W15-46	63.5	66	B17TM6-B		10/29/2003												
299-W15-46	65	66	B17X85		11/4/2003									3410	PPM(V/V)		
299-W15-46	65	66	B17X86	R	11/4/2003									3450	PPM(V/V)		
299-W15-46	65	66	B17X87	R	11/4/2003									3480	PPM(V/V)		
299-W15-46	65	66	B17X96		3/15/2004									5690	PPM(V/V)		
299-W15-46	65	66	B17X97	R	3/15/2004									5640	PPM(V/V)		
299-W15-46	66	67	B17X90		11/10/2003									5980	PPM(V/V)		
299-W15-46	66	67	B17X91		11/10/2003									6060	PPM(V/V)		
299-W15-46	66	67	B17X92	R	11/10/2003									6230	PPM(V/V)		
299-W15-46	66	67	B17X93	R	11/10/2003									6240	PPM(V/V)		
299-W15-46	66	67.5	B17X98	R	3/15/2004									5650	PPM(V/V)		
299-W15-46	81	82	B17XB1		3/22/2004									6300	PPM(V/V)		
299-W15-46	81	82	B17XB2	R	3/22/2004									6410	PPM(V/V)		
299-W15-46	81	82	B17XB3	R	3/22/2004									6400	PPM(V/V)		
299-W15-46	90	92.5	B17N52		3/23/2004	8100	µg/kg			20600	µg/kg	U					
299-W15-46	90	92.5	B17XB6		3/23/2004									8220	PPM(V/V)		
299-W15-46	90	92.5	B17XB7	R	3/23/2004									8320	PPM(V/V)		
299-W15-46	90	92.5	B17XB8	R	3/23/2004									8290	PPM(V/V)		
299-W15-46	110	112	B17XB9		4/12/2004									9340	PPM(V/V)		

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Table B-7. Wet Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sulfate (14808-79-8)				Sulfide (18496-25-8)				Water (Vapor) (7732-18-5)			
						300				9030				PAA			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	110	112	B17XC0	R	4/12/2004									9500	PPM(V/V)		
299-W15-46	110	112	B17XC1	R	4/12/2004									9760	PPM(V/V)		
299-W15-46	110	112	B17XC3		4/12/2004									9990	PPM(V/V)		
299-W15-46	109.5	112	B18XR8		4/8/2004	287000	µg/kg	U		14600	µg/kg	U					
299-W15-46	115	117.5	B191Y7		4/19/2004	1200	µg/kg	U									
299-W15-46	117	119.5	B17N60		4/21/2004	11300	µg/kg										
299-W15-46	118	119.5	B17XC4		4/22/2004									9240	PPM(V/V)		
299-W15-46	118	119.5	B17XC5		4/22/2004									9510	PPM(V/V)		
299-W15-46	118	119.5	B17XC6		4/22/2004									9760	PPM(V/V)		
299-W15-46	118	119.5	B17XC7	R	4/22/2004									9700	PPM(V/V)		
299-W15-46	118	119.5	B17XC8	R	4/22/2004									9710	PPM(V/V)		
299-W15-46	119.5	122	B17N63		5/3/2004	34200	µg/kg										
299-W15-46	119.5	122	B17N65		5/3/2004	39700	µg/kg			23100	µg/kg	U					
299-W15-46	119.5	122	B17XC9		5/3/2004									11600	PPM(V/V)		
299-W15-46	119.5	122	B17XD0		5/3/2004									10900	PPM(V/V)		
299-W15-46	119.5	122	B17XD1		5/3/2004									11100	PPM(V/V)		
299-W15-46	119.5	122	B17XD2	R	5/3/2004									11100	PPM(V/V)		
299-W15-46	119.5	122	B17XD3	R	5/3/2004									11100	PPM(V/V)		
299-W15-46	141	143	B17XD4		8/16/2004									13700	PPM(V/V)		
299-W15-46	141	143	B17XD5		8/16/2004									13900	PPM(V/V)		
299-W15-46	141	143	B17XD6		8/16/2004									13900	PPM(V/V)		
299-W15-46	141	143	B17XD7	R	8/16/2004									13900	PPM(V/V)		
299-W15-46	141	143	B17XD8	R	8/16/2004									13800	PPM(V/V)		
299-W15-46	159	160	B17XD9		8/19/2004									10900	PPM(V/V)		
299-W15-46	159	160	B17XF0	R	8/19/2004									10800	PPM(V/V)		
299-W15-46	159	160	B17XF1	R	8/19/2004									10800	PPM(V/V)		
299-W15-46	159	160	B17XF2	R	8/19/2004									11100	PPM(V/V)		
299-W15-46	159	160	B17XF3	R	8/19/2004									11100	PPM(V/V)		
299-W15-46	174	176.5	B17N67		8/23/2004	17500	µg/kg	B									
299-W15-46	174	176.5	B17N69		8/23/2004					69300	µg/kg						
299-W15-46	184	186.3	B1B7J7		8/25/2004									15300	PPM(V/V)		
299-W15-46	184	186.3	B1B7J8		8/25/2004									16400	PPM(V/V)		
299-W15-46	184	186.3	B1B7J9		8/25/2004									16800	PPM(V/V)		
299-W15-46	184	186.3	B1B7K0	R	8/25/2004									16900	PPM(V/V)		
299-W15-46	184	186.3	B1B7K1	R	8/25/2004									16800	PPM(V/V)		
299-W15-46	184	186.5	B17N70		8/25/2004	10200	µg/kg	B									
299-W15-46	184	186.5	B17N72		8/25/2004					38700	µg/kg	U					

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Table B-7. Wet Chemistry Analysis Results for Borehole C3426 (216-Z-9, 299-W15-46) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sulfate (14808-79-8)				Sulfide (18496-25-8)				Water (Vapor) (7732-18-5)			
						300				9030				PAA			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-46	223	224	B1B7J2		9/9/2004									11200	PPM(V/V)		
299-W15-46	223	224	B1B7J3		9/9/2004									12100	PPM(V/V)		
299-W15-46	223	224	B1B7J4		9/9/2004									12100	PPM(V/V)		
299-W15-46	223	224	B1B7J5	R	9/9/2004									12500	PPM(V/V)		
299-W15-46	223	224	B1B7J6	R	9/9/2004									12400	PPM(V/V)		
299-W15-46	224	226.5	B17N73		9/9/2004	11200	$\mu\text{g}/\text{kg}$	B									
299-W15-46	224	226.5	B17NL3		9/9/2004				50500	$\mu\text{g}/\text{kg}$	U						
299-W15-46	226.5	229	B17NL5		9/9/2004	5000	$\mu\text{g}/\text{kg}$	U									
299-W15-46	226.5	229	B17NL7		9/9/2004				54800	$\mu\text{g}/\text{kg}$	U						
			B17MM8	EB	9/23/2003	100	$\mu\text{g}/\text{L}$	U									
			B17MM9	EB	9/23/2003				1000	$\mu\text{g}/\text{L}$	U						
					TQL ($\mu\text{g}/\text{kg}$)		5000			N/A					Not listed		

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Table B-8. Metal Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Aluminum (7429-90-5)				Antimony (7440-36-0)				Arsenic (7440-38-2)				Barium (7440-39-3)				
							6010				6010				6010				6010				
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	STLSL	6650000	µg/kg			700	µg/kg	B			5600	µg/kg			37300	µg/kg		
299-W15-48	67	69	B1HK27		3/20/2006	STLSL	7380000	µg/kg			730	µg/kg	B			4300	µg/kg			49300	µg/kg		
299-W15-48	70	72	B1HK32		3/22/2006	STLSL	7700000	µg/kg			760	µg/kg	B			4200	µg/kg			55900	µg/kg		
299-W15-48	100	102	B1HK52		4/4/2006	STLSL	12100000	µg/kg			1100	µg/kg				6900	µg/kg			53100	µg/kg		
299-W15-48	103	105	B1HK47	R	4/6/2006	STLSL	10600000	µg/kg			500	µg/kg	B			5500	µg/kg			44200	µg/kg		
299-W15-48	103	105	B1HL22	R	4/6/2006	STLSL	10100000	µg/kg			740	µg/kg	B			5400	µg/kg			41700	µg/kg		
299-W15-48	118.5	120.5	B1HK42		4/13/2006	STLSL	13000000	µg/kg			880	µg/kg	B			6200	µg/kg			77100	µg/kg		
299-W15-48	122.5	124.5	B1HK57		4/18/2006	STLSL																	
299-W15-48	122.5	124.5	B1HK57		4/18/2006	WSCF	12600000	µg/kg			2470	µg/kg	U			3000	µg/kg			66100	µg/kg		
299-W15-48	128.5	130.5	B1HK62		4/24/2006	WSCF	7150000	µg/kg			2340	µg/kg	U			2050	µg/kg	U		51900	µg/kg		
299-W15-48	128.5	130.5	B1HK62		4/24/2006	STLSL																	
299-W15-48	131.5	133	B1HK67		4/27/2006	WSCF	6080000	µg/kg			2470	µg/kg	U			8400	µg/kg	C		109000	µg/kg		
299-W15-48	131.5	133	B1HK67		4/27/2006	STLSL																	
299-W15-48	135	140	B1HK77	S	5/3/2006	STLSL																	
299-W15-48	135	140	B1HK77	S	5/3/2006	WSCF	6670000	µg/kg			2520	µg/kg	U			4390	µg/kg	C		77100	µg/kg		
299-W15-48	135	140	B1HL26	S	5/3/2006	RLNP																	
299-W15-48	135	140	B1HL26	S	5/3/2006	STLSL	8210000	µg/kg			2400	µg/kg				3300	µg/kg			108000	µg/kg		
			B1HKY0	EB	4/19/2006	WSCF	34.1	µg/L	C		36.8	µg/L	C			22	µg/L	U		4.2	µg/L		
						TQL (µg/kg)		N/A			N/A					10000				N/A			

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Table B-8. Metal Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Beryllium (7440-41-7)				Bismuth (7440-69-9)				Cadmium (7440-43-9)				Calcium (7440-70-2)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	310	µg/kg	B		53600	µg/kg			1200	µg/kg			2330000	µg/kg	C	
299-W15-48	67	69	B1HK27		3/20/2006	320	µg/kg	B		99600	µg/kg			3300	µg/kg			2240000	µg/kg	C	
299-W15-48	70	72	B1HK32		3/22/2006	310	µg/kg	B		95700	µg/kg			8200	µg/kg			3110000	µg/kg	C	
299-W15-48	100	102	B1HK52		4/4/2006	380	µg/kg	B		97900	µg/kg			6200	µg/kg			2790000	µg/kg	C	
299-W15-48	103	105	B1HK47	R	4/6/2006	330	µg/kg	B		86500	µg/kg			5400	µg/kg			2650000	µg/kg	C	
299-W15-48	103	105	B1HL22	R	4/6/2006	350	µg/kg	B		87800	µg/kg			5200	µg/kg			2560000	µg/kg	C	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	440	µg/kg	B		103000	µg/kg			30200	µg/kg			5320000	µg/kg	C	
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006	523	µg/kg			2170	µg/kg	U		118000	µg/kg			13200000	µg/kg		
299-W15-48	128.5	130.5	B1HK62		4/24/2006	226	µg/kg			2050	µg/kg	U		465	µg/kg			15200000	µg/kg		
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	131.5	133	B1HK67		4/27/2006	130	µg/kg			2170	µg/kg	U		99	µg/kg	U		209000000	µg/kg		
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006	216	µg/kg			2220	µg/kg	U		145	µg/kg			14700000	µg/kg		
299-W15-48	135	140	B1HL26	S	5/3/2006																
299-W15-48	135	140	B1HL26	S	5/3/2006	680	µg/kg			156000	µg/kg			140	µg/kg	U		17300000	µg/kg	C	
			B1HKY0	EB	4/19/2006	0.5	µg/L	U		33.6	µg/L			0.6	µg/L	U		111	µg/L		
					TQL (µg/kg)		N/A				N/A				500				N/A		

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Table B-8. Metal Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Chromium (7440-47-3)				Cobalt (7440-48-4)				Copper (7440-50-8)				Hexavalent Chromium (18540-29-9)			
						6010				6010				6010				7196			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	22800	µg/kg			7600	µg/kg			15300	µg/kg			450	µg/kg		
299-W15-48	67	69	B1HK27		3/20/2006	15200	µg/kg			6700	µg/kg			11800	µg/kg			160	µg/kg		U
299-W15-48	70	72	B1HK32		3/22/2006	14900	µg/kg			7800	µg/kg			9100	µg/kg			160	µg/kg		U
299-W15-48	100	102	B1HK52		4/4/2006	20200	µg/kg			9400	µg/kg			12800	µg/kg			160	µg/kg		U
299-W15-48	103	105	B1HK47	R	4/6/2006	16100	µg/kg			8100	µg/kg			11000	µg/kg			160	µg/kg		U
299-W15-48	103	105	B1HL22	R	4/6/2006	15200	µg/kg			7600	µg/kg			10500	µg/kg			160	µg/kg		U
299-W15-48	118.5	120.5	B1HK42		4/13/2006	18700	µg/kg			8700	µg/kg			13300	µg/kg			160	µg/kg		U
299-W15-48	122.5	124.5	B1HK57		4/18/2006													180	µg/kg		U
299-W15-48	122.5	124.5	B1HK57		4/18/2006	14800	µg/kg			9290	µg/kg			19900	µg/kg						
299-W15-48	128.5	130.5	B1HK62		4/24/2006	15200	µg/kg			6270	µg/kg			12900	µg/kg						
299-W15-48	128.5	130.5	B1HK62		4/24/2006													180	µg/kg		U
299-W15-48	131.5	133	B1HK67		4/27/2006	6650	µg/kg			5190	µg/kg			16900	µg/kg						
299-W15-48	131.5	133	B1HK67		4/27/2006													170	µg/kg		U
299-W15-48	135	140	B1HK77	S	5/3/2006													150	µg/kg		U
299-W15-48	135	140	B1HK77	S	5/3/2006	9060	µg/kg			10600	µg/kg			18700	µg/kg						
299-W15-48	135	140	B1HL26	S	5/3/2006													220	µg/kg		
299-W15-48	135	140	B1HL26	S	5/3/2006	15900	µg/kg			13600	µg/kg			15600	µg/kg						
			B1HKY0	EB	4/19/2006	11.5	µg/L	C		1.2	µg/L	U		13.8	µg/L	C		2	µg/L		U
					TQL (µg/kg)					1000				N/A				2500			500

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Table B-8. Metal Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Manganese (7439-96-5)				Mercury (7439-97-6)				Mercury (7439-97-6)				Nickel (7440-02-0)			
						6010				200.8				7471				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	170000	µg/kg							81.3	µg/kg			15400	µg/kg		
299-W15-48	67	69	B1HK27		3/20/2006	196000	µg/kg							180	µg/kg			20000	µg/kg		
299-W15-48	70	72	B1HK32		3/22/2006	245000	µg/kg							152	µg/kg			14200	µg/kg		
299-W15-48	100	102	B1HK52		4/4/2006	288000	µg/kg							799	µg/kg			23300	µg/kg		
299-W15-48	103	105	B1HK47	R	4/6/2006	244000	µg/kg							217	µg/kg			19900	µg/kg		
299-W15-48	103	105	B1HL22	R	4/6/2006	232000	µg/kg							210	µg/kg			18700	µg/kg		
299-W15-48	118.5	120.5	B1HK42		4/13/2006	321000	µg/kg							43.9	µg/kg			21000	µg/kg		
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006	508000	µg/kg	E		78	µg/kg	C						15700	µg/kg		
299-W15-48	128.5	130.5	B1HK62		4/24/2006	304000	µg/kg	E		47	µg/kg	C						13200	µg/kg		
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	131.5	133	B1HK67		4/27/2006	234000	µg/kg			84	µg/kg	C						7380	µg/kg		
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006	248000	µg/kg			65	µg/kg	C						5670	µg/kg		
299-W15-48	135	140	B1HL26	S	5/3/2006																
299-W15-48	135	140	B1HL26	S	5/3/2006	324000	µg/kg							40.5	µg/kg			11200	µg/kg		
			B1HKY0	EB	4/19/2006	1.4	µg/L			0.04	µg/L	U						1.4	µg/L	U	
					TQL (µg/kg)		N/A			200				200				4000			

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Table B-8. Metal Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Phosphorus (7723-14-0)				Potassium (7440-09-7)				Selenium (7782-49-2)				Silver (7440-22-4)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	533000	µg/kg			826000	µg/kg			310	µg/kg	B		200	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006	621000	µg/kg			828000	µg/kg	C		630	µg/kg	B		210	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006	897000	µg/kg			1360000	µg/kg	C		660	µg/kg	B		210	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006	704000	µg/kg			1850000	µg/kg			370	µg/kg	B		210	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006	637000	µg/kg			1450000	µg/kg			570	µg/kg	B		210	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006	628000	µg/kg			1350000	µg/kg			280	µg/kg	B		210	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	636000	µg/kg			1660000	µg/kg	C		550	µg/kg	B		210	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006	927000	µg/kg	C		1990000	µg/kg			1780	µg/kg	U		197	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006	1220000	µg/kg	C		1270000	µg/kg			1680	µg/kg	U		565	µg/kg		
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	131.5	133	B1HK67		4/27/2006	426000	µg/kg			530000	µg/kg			2930	µg/kg			638	µg/kg		
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006	778000	µg/kg			804000	µg/kg			1820	µg/kg	U		1230	µg/kg		
299-W15-48	135	140	B1HL26	S	5/3/2006																
299-W15-48	135	140	B1HL26	S	5/3/2006	798000	µg/kg			851000	µg/kg			180	µg/kg	U		210	µg/kg	U	
299-W15-48	135	140	B1HKY0	EB	4/19/2006	48	µg/L	U		110	µg/L	U		18	µg/L	U		1.8	µg/L	U	
					TQL (µg/kg)		10000			N/A				10000				2000			

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Table B-8. Metal Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sodium (7440-23-5)				Strontium (7440-24-6)				Uranium (7440-61-1)				Vanadium (7440-62-2)			
						6010				6010				200.8				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	154000	µg/kg			18300	µg/kg							26400	µg/kg		
299-W15-48	67	69	B1HK27		3/20/2006	144000	µg/kg			19600	µg/kg							31500	µg/kg		
299-W15-48	70	72	B1HK32		3/22/2006	169000	µg/kg			15900	µg/kg							27300	µg/kg		
299-W15-48	100	102	B1HK52		4/4/2006	1330000	µg/kg	C		18600	µg/kg							30400	µg/kg		
299-W15-48	103	105	B1HK47	R	4/6/2006	1110000	µg/kg	C		18600	µg/kg							26500	µg/kg		
299-W15-48	103	105	B1HL22	R	4/6/2006	1090000	µg/kg	C		16100	µg/kg							26000	µg/kg		
299-W15-48	118.5	120.5	B1HK42		4/13/2006	242000	µg/kg	C		29500	µg/kg							33900	µg/kg		
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006	1950000	µg/kg	U		30000	µg/kg							32700	µg/kg		
299-W15-48	128.5	130.5	B1HK62		4/24/2006	270000	µg/kg	E		37900	µg/kg							22200	µg/kg		
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	131.5	133	B1HK67		4/27/2006	395000	µg/kg	E		264000	µg/kg							25900	µg/kg		
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006	791000	µg/kg	E		45600	µg/kg							62100	µg/kg		
299-W15-48	135	140	B1HL26	S	5/3/2006																
299-W15-48	135	140	B1HL26	S	5/3/2006	1160000	µg/kg	C		56600	µg/kg							71400	µg/kg		
299-W15-48	135	140	B1HKY0	EB	4/19/2006	200	µg/L	U		1.3	µg/L	U		0.02	µg/L	U		2.9	µg/L	U	
					TQL (µg/kg)		N/A				N/A				N/A				N/A		

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Table B-8. Metal Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Zinc (7440-66-6)			
						6010			
						Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35600	$\mu\text{g}/\text{kg}$	C	
299-W15-48	67	69	B1HK27		3/20/2006	39200	$\mu\text{g}/\text{kg}$	C	
299-W15-48	70	72	B1HK32		3/22/2006	35600	$\mu\text{g}/\text{kg}$	C	
299-W15-48	100	102	B1HK52		4/4/2006	40500	$\mu\text{g}/\text{kg}$	C	
299-W15-48	103	105	B1HK47	R	4/6/2006	35000	$\mu\text{g}/\text{kg}$	C	
299-W15-48	103	105	B1HL22	R	4/6/2006	33800	$\mu\text{g}/\text{kg}$	C	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	37200	$\mu\text{g}/\text{kg}$	C	
299-W15-48	122.5	124.5	B1HK57		4/18/2006				
299-W15-48	122.5	124.5	B1HK57		4/18/2006	83700	$\mu\text{g}/\text{kg}$		
299-W15-48	128.5	130.5	B1HK62		4/24/2006	58000	$\mu\text{g}/\text{kg}$		
299-W15-48	128.5	130.5	B1HK62		4/24/2006				
299-W15-48	131.5	133	B1HK67		4/27/2006	59400	$\mu\text{g}/\text{kg}$		
299-W15-48	131.5	133	B1HK67		4/27/2006				
299-W15-48	135	140	B1HK77	S	5/3/2006				
299-W15-48	135	140	B1HK77	S	5/3/2006	84000	$\mu\text{g}/\text{kg}$		
299-W15-48	135	140	B1HL26	S	5/3/2006				
299-W15-48	135	140	B1HL26	S	5/3/2006	41900	$\mu\text{g}/\text{kg}$		
			B1HKY0	EB	4/19/2006	208	$\mu\text{g}/\text{L}$		
					TQL ($\mu\text{g}/\text{kg}$)		N/A		

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Table B-9. General Chemistry Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (13 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	2-(2-methyl-4-chlorophenoxy) propionic acid (93-65-2)				2,4,5-T(2,4,5-Trichlorophenoxyacetic acid) (93-76-5)				2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex (93-72-1)				2,4-D(2,4-Dichlorophenoxyacetic acid) (94-75-7)											
							8151				8151				8151				8151											
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ								
299-W15-48	99999	0.5	B1HL28		2/14/2006	STLSL	1300	µg/kg	U					5.3	µg/kg	U					3.5	µg/kg	U					31	µg/kg	U
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	STLSL																								
299-W15-48	67	69	B1HK27		3/20/2006	STLSL																								
299-W15-48	70	72	B1HK32		3/22/2006	STLSL																								
299-W15-48	100	102	B1HK52		4/4/2006	SHAW																								
299-W15-48	103	105	B1HK47	R	4/6/2006	STLSL																								
299-W15-48	103	105	B1HL22	R	4/6/2006	STLSL																								
299-W15-48	118.5	120.5	B1HK42		4/13/2006	STLSL																								
299-W15-48	122.5	124.5	B1HK57		4/18/2006	SHAW																								
299-W15-48	122.5	124.5	B1HK57		4/18/2006	WSCF																								
299-W15-48	128.5	130.5	B1HK62		4/24/2006	SHAW																								
299-W15-48	128.5	130.5	B1HK62		4/24/2006	WSCF																								
299-W15-48	131.5	133	B1HK67		4/27/2006	WSCF																								
299-W15-48	131.5	133	B1HK67		4/27/2006	SHAW																								
299-W15-48	135	140	B1HK77	S	5/3/2006	RLNP																								
299-W15-48	135	140	B1HL26	S	5/3/2006	STLSL																								
			B1HKY0	EB	4/19/2006	WSCF																								
			B1HKY0	EB	4/19/2006	STLSL	59	µg/L	U					0.17	µg/L	U					0.15	µg/L	U					1.3	µg/L	U
					TQL (µg/kg)					Not listed				Not listed							Not listed									

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Table B-9. General Chemistry Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (13 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid) (94-82-6)				2-Methyl-4 chlorophenoxyacetic acid (94-74-6)				4,4"-DDD (Dichlorodiphenyldichloroethane) (72-54-8)				4,4"-DDE (Dichlorodiphenyldichloroethylene) (72-55-9)			
						8151				8151				8081				8081			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	99999	0.5	B1HL28		2/14/2006	26	µg/kg	U		830	µg/kg	U		0.1	µg/kg	U		0.41	µg/kg	U	
299-W15-48	52.5	54.5	B1HKB3		3/13/2006																
299-W15-48	67	69	B1HK27		3/20/2006																
299-W15-48	70	72	B1HK32		3/22/2006																
299-W15-48	100	102	B1HK52		4/4/2006																
299-W15-48	103	105	B1HK47	R	4/6/2006																
299-W15-48	103	105	B1HL22	R	4/6/2006																
299-W15-48	118.5	120.5	B1HK42		4/13/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HL26	S	5/3/2006																
			B1HKY0	EB	4/19/2006																
			B1HKY0	EB	4/19/2006	1.5	µg/L	U		150	µg/L	U		0.003	µg/L	U		0.006	µg/L	U	
					TQL (µg/kg)	Not listed				Not listed				Not listed				Not listed			

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Table B-9. General Chemistry Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (13 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Aroclor-1016 (12674-11-2)				Aroclor-1221 (11104-28-2)				Aroclor-1232 (11141-16-5)				Aroclor-1242 (53469-21-9)			
						8082				8082				8082				8082			
						Conc'n	Units	Q	VQ												
299-W15-48	99999	0.5	B1HL28		2/14/2006																
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	6.4	µg/kg	U													
299-W15-48	67	69	B1HK27		3/20/2006	6.5	µg/kg	U													
299-W15-48	70	72	B1HK32		3/22/2006	6.5	µg/kg	U													
299-W15-48	100	102	B1HK52		4/4/2006																
299-W15-48	103	105	B1HK47	R	4/6/2006	6.5	µg/kg	U													
299-W15-48	103	105	B1HL22	R	4/6/2006	6.7	µg/kg	U													
299-W15-48	118.5	120.5	B1HK42		4/13/2006	6.7	µg/kg	U													
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006	12	µg/kg	U		23	µg/kg	U		12	µg/kg	U		12	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1HK62		4/24/2006	12	µg/kg	U		25	µg/kg	U		12	µg/kg	U		12	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006	11	µg/kg	U		23	µg/kg	U		11	µg/kg	U		11	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006	140	µg/kg	U													
299-W15-48	135	140	B1HL26	S	5/3/2006	6.5	µg/kg	U													
			B1HKY0	EB	4/19/2006	0.098	µg/L	U		0.2	µg/L	U		0.098	µg/L	U		0.098	µg/L	U	
			B1HKY0	EB	4/19/2006																
					TQL (µg/kg)					16.5				16.5				16.5			

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Table B-9. General Chemistry Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (13 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Aroclor-1248 (12672-29-6)				Aroclor-1254 (11097-69-1)				Aroclor-1260 (11096-82-5)				Aroclor-1262 (37324-23-5)			
						8082				8082				8082				8082			
						Conc'n	Units	Q	VQ												
299-W15-48	99999	0.5	B1HL28		2/14/2006																
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	6.4	µg/kg	U		4	µg/kg	U		4	µg/kg	U		4	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006	270	µg/kg			4	µg/kg	U		4	µg/kg	U		4	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006	1300	µg/kg			4	µg/kg	U		4	µg/kg	U		4	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006																
299-W15-48	103	105	B1HK47	R	4/6/2006	6.5	µg/kg	U		4	µg/kg	U		4	µg/kg	U		4	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006	6.7	µg/kg	U		4.1	µg/kg	U		4.1	µg/kg	U		4.1	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	6.7	µg/kg	U		4.1	µg/kg	U		4.1	µg/kg	U		4.1	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006	12	µg/kg	U													
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1HK62		4/24/2006	12	µg/kg	U													
299-W15-48	131.5	133	B1HK67		4/27/2006	11	µg/kg	U													
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006	140	µg/kg	U		140	µg/kg	U		140	µg/kg	U					
299-W15-48	135	140	B1HL26	S	5/3/2006	6.5	µg/kg	U		4	µg/kg	U		4	µg/kg	U		4	µg/kg	U	
			B1HKY0	EB	4/19/2006	0.098	µg/L	U													
			B1HKY0	EB	4/19/2006																
					TQL (µg/kg)		16.5				16.5				16.5				16.5		

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Table B-9. General Chemistry Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (13 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dalapon (75-99-0)				Delta-BHC (319-86-8)				Dicamba (1918-00-9)				Dichloroprop (120-36-5)			
						8151				8081				8151				8151			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	99999	0.5	B1HL28		2/14/2006	29	µg/kg	U		0.12	µg/kg	U		1.6	µg/kg	U		29	µg/kg	U	
299-W15-48	52.5	54.5	B1HKB3		3/13/2006																
299-W15-48	67	69	B1HK27		3/20/2006																
299-W15-48	70	72	B1HK32		3/22/2006																
299-W15-48	100	102	B1HK52		4/4/2006																
299-W15-48	103	105	B1HK47	R	4/6/2006																
299-W15-48	103	105	B1HL22	R	4/6/2006																
299-W15-48	118.5	120.5	B1HK42		4/13/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HL26	S	5/3/2006																
			B1HKY0	EB	4/19/2006																
			B1HKY0	EB	4/19/2006	2.6	µg/L	U		0.003	µg/L	U		0.17	µg/L	U		0.93	µg/L	U	
			TQL (µg/kg)																		

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Table B-9. General Chemistry Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (13 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dieldrin (60-57-1)				Dinoseb(2-secButyl-4,6 dinitrophenol) (88-85-7)				Endosulfan I (959-98-8)				Endosulfan II (33213-65-9)			
						8081				8151				8081				8081			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	99999	0.5	B1HL28		2/14/2006	0.29	µg/kg	U		6.3	µg/kg	U		0.13	µg/kg	U		0.1	µg/kg	U	
299-W15-48	52.5	54.5	B1HKB3		3/13/2006																
299-W15-48	67	69	B1HK27		3/20/2006																
299-W15-48	70	72	B1HK32		3/22/2006																
299-W15-48	100	102	B1HK52		4/4/2006																
299-W15-48	103	105	B1HK47	R	4/6/2006																
299-W15-48	103	105	B1HL22	R	4/6/2006																
299-W15-48	118.5	120.5	B1HK42		4/13/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HL26	S	5/3/2006																
			B1HKY0	EB	4/19/2006																
			B1HKY0	EB	4/19/2006	0.004	µg/L	U		0.6	µg/L	U		0.003	µg/L	U		0.003	µg/L	U	
					TQL (µg/kg)	Not listed				Not listed				Not listed				Not listed			

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Table B-9. General Chemistry Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (13 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Endosulfan sulfate (1031-07-8)			Endrin (72-20-8)			Endrin aldehyde (7421-93-4)				Endrin ketone (53494-70-5)			
						8081			8081			8081				8081			
						Conc'n	Units	Q VQ	Conc'n	Units	Q VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	99999	0.5	B1HL28		2/14/2006	0.25	µg/kg	U	0.21	µg/kg	U								
299-W15-48	52.5	54.5	B1HKB3		3/13/2006														
299-W15-48	67	69	B1HK27		3/20/2006														
299-W15-48	70	72	B1HK32		3/22/2006														
299-W15-48	100	102	B1HK52		4/4/2006														
299-W15-48	103	105	B1HK47	R	4/6/2006														
299-W15-48	103	105	B1HL22	R	4/6/2006														
299-W15-48	118.5	120.5	B1HK42		4/13/2006														
299-W15-48	122.5	124.5	B1HK57		4/18/2006														
299-W15-48	122.5	124.5	B1HK57		4/18/2006														
299-W15-48	128.5	130.5	B1HK62		4/24/2006														
299-W15-48	128.5	130.5	B1HK62		4/24/2006														
299-W15-48	131.5	133	B1HK67		4/27/2006														
299-W15-48	131.5	133	B1HK67		4/27/2006														
299-W15-48	135	140	B1HK77	S	5/3/2006														
299-W15-48	135	140	B1HL26	S	5/3/2006														
			B1HKY0	EB	4/19/2006														
			B1HKY0	EB	4/19/2006	0.008	µg/L	U	0.007	µg/L	U	0.003	µg/L	U	0.012	µg/L	U		
					TQL (µg/kg)	Not listed			Not listed			Not listed				Not listed			

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Table B-9. General Chemistry Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (13 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Gamma-BHC (Lindane) (58-89-9)				Gamma-Chlordane (5103-74-2)				Heptachlor (76-44-8)				Heptachlor epoxide (1024-57-3)			
						8081				8081				8081				8081			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	99999	0.5	B1HL28		2/14/2006	0.27	µg/kg	U					0.11	µg/kg	U		0.15	µg/kg	U		
299-W15-48	52.5	54.5	B1HKB3		3/13/2006																
299-W15-48	67	69	B1HK27		3/20/2006																
299-W15-48	70	72	B1HK32		3/22/2006																
299-W15-48	100	102	B1HK52		4/4/2006																
299-W15-48	103	105	B1HK47	R	4/6/2006																
299-W15-48	103	105	B1HL22	R	4/6/2006																
299-W15-48	118.5	120.5	B1HK42		4/13/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HL26	S	5/3/2006																
			B1HKY0	EB	4/19/2006																
			B1HKY0	EB	4/19/2006	0.003	µg/L	U		0.008	µg/L	U		0.005	µg/L	U		0.004	µg/L	U	
					TQL (µg/kg)	Not listed				Not listed				Not listed				Not listed			

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Table B-9. General Chemistry Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (13 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Total organic carbon (TOC)				Total organic carbon (TOC)				Total petroleum hydrocarbons - diesel range (TPHDIESEL)				Total petroleum hydrocarbons - kerosene range (TPHKEROSENE)			
						415.1				9060				WDOE TPH				WDOE TPH			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	99999	0.5	B1HL28		2/14/2006																
299-W15-48	52.5	54.5	B1HKB3		3/13/2006																
299-W15-48	67	69	B1HK27		3/20/2006					220000	µg/kg			1600	µg/kg	U		520	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006					641000	µg/kg			1600	µg/kg	U		530	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006					2780000	µg/kg			1600	µg/kg	U		530	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006					347000	µg/kg			1600	µg/kg	U		540	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006					183000	µg/kg			1600	µg/kg	U		530	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006					205000	µg/kg			1700	µg/kg	U		540	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006					957000	µg/kg			1700	µg/kg	U		550	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006					3660000	µg/kg										
299-W15-48	128.5	130.5	B1HK62		4/24/2006					25000	µg/kg	U									
299-W15-48	131.5	133	B1HK67		4/27/2006					23200	µg/kg	U									
299-W15-48	135	140	B1HK77	S	5/3/2006					1050000	µg/kg	U									
299-W15-48	135	140	B1HL26	S	5/3/2006	63400	µg/kg														
			B1HKY0	EB	4/19/2006									75	µg/L	U		75	µg/L	U	
			B1HKY0	EB	4/19/2006	470	µg/L	U													
					TQL (µg/kg)		N/A				N/A			5000				5000			

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Table B-9. General Chemistry Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (13 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toxaphene (8001-35-2)			
						8081			
						Conc'n	Units	Q	VQ
299-W15-48	99999	0.5	B1HL28		2/14/2006	7	µg/kg	U	
299-W15-48	52.5	54.5	B1HKB3		3/13/2006				
299-W15-48	67	69	B1HK27		3/20/2006				
299-W15-48	70	72	B1HK32		3/22/2006				
299-W15-48	100	102	B1HK52		4/4/2006				
299-W15-48	103	105	B1HK47	R	4/6/2006				
299-W15-48	103	105	B1HL22	R	4/6/2006				
299-W15-48	118.5	120.5	B1HK42		4/13/2006				
299-W15-48	118.5	120.5	B1HK42		4/13/2006				
299-W15-48	122.5	124.5	B1HK57		4/18/2006				
299-W15-48	128.5	130.5	B1HK62		4/24/2006				
299-W15-48	131.5	133	B1HK67		4/27/2006				
299-W15-48	135	140	B1HK77	S	5/3/2006				
299-W15-48	135	140	B1HL26	S	5/3/2006				
			B1HKY0	EB	4/19/2006				
			B1HKY0	EB	4/19/2006	0.19	µg/L	U	
					TQL (µg/kg)	Not listed			

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Table B-10. Radiochemical Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Antimony-125 (14234-35-6)					Cesium-134 (13967-70-9)					Cesium-137 (10045-97-3)				
						GEA					GEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-48	52.5	54.5	B1HK99		3/13/2006	1.6	pCi/g	U		1.6	1.6	pCi/g	U		1.6	1.2	pCi/g	U		1.2
299-W15-48	67	69	B1HK27		3/20/2006	0.38	pCi/g	U		0.38	0.2	pCi/g	U		0.2	0.383	pCi/g			0.17
299-W15-48	70	72	B1HK32		3/22/2006	0.84	pCi/g	U		0.84	0.47	pCi/g	U		0.47	0.632	pCi/g			0.38
299-W15-48	100	102	B1HK52		4/4/2006	0.34	pCi/g	U		0.34	0.2	pCi/g	U		0.2	0.325	pCi/g			0.17
299-W15-48	103	105	B1HK47	R	4/6/2006	0.27	pCi/g	U		0.27	0.17	pCi/g	U		0.17	0.408	pCi/g			0.14
299-W15-48	103	105	B1HL22	R	4/6/2006	0.35	pCi/g	U		0.35	0.18	pCi/g	U		0.18	0.291	pCi/g			0.17
299-W15-48	118.5	120.5	B1HK42		4/13/2006	0.53	pCi/g	U		0.53	0.35	pCi/g	U		0.35	0.396	pCi/g			0.29
299-W15-48	122.5	124.5	B1HK53		4/18/2006	0.02	pCi/g	U		0.036	0.06	pCi/g	U		0.06	0.005	pCi/g	U		0.013
299-W15-48	122.5	124.5	B1HK57		4/18/2006	5.3	pCi/g	U		5.3	2.6	pCi/g	U		2.6	2.1	pCi/g	U		2.1
299-W15-48	128.5	130.5	B1HK58		4/24/2006	-0.013	pCi/g	U		0.044	0.078	pCi/g	U		0.08	-0.003	pCi/g	U		0.016
299-W15-48	128.5	130.5	B1HK62		4/24/2006											0.091	pCi/g	U		0.091
299-W15-48	131.5	133	B1HK63		4/27/2006	-0.012	pCi/g	U		0.034	0.006	pCi/g	U		0.012	-0.006	pCi/g	U		0.01
299-W15-48	131.5	133	B1HK67		4/27/2006											0.062	pCi/g	U		0.062
299-W15-48	135	140	B1HK73		5/3/2006	0.025	pCi/g	U		0.05	0.034	pCi/g	U		0.04	-0.005	pCi/g	U		0.02
299-W15-48	135	140	B1HK77	S	5/3/2006	3.3	pCi/g	U		3.3	2.1	pCi/g	U		2.1	1.9	pCi/g	U		1.9
299-W15-48	135	140	B1HL26	S	5/3/2006	3.6	pCi/g	U		3.6	1.9	pCi/g	U		1.9	1.3	pCi/g	U		1.3
299-W15-48	135	140	B1HL26	S	5/3/2006															
			B1HKY0	EB	4/19/2006	10.6	pCi/L	U		22	0.494	pCi/L	U		7.6	-2.23	pCi/L	U		7.4
			B1HKY0	EB	4/19/2006															
					TQL (pCi/g)					N/A					N/A					0.1

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Table B-10. Radiochemical Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cobalt-60 (10198-40-0)					Europium-152 (14683-23-9)					Europium-154 (15585-10-1)				
						-GEA					GEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-48	52.5	54.5	B1HK99		3/13/2006	1.1	pCi/g	U		1.1	2.6	pCi/g	U		2.6	3.1	pCi/g	U		3.1
299-W15-48	67	69	B1HK27		3/20/2006	0.19	pCi/g	U		0.19	0.843	pCi/g			0.54	0.55	pCi/g	U		0.55
299-W15-48	70	72	B1HK32		3/22/2006	0.43	pCi/g	U		0.43	3.16	pCi/g			1	1.2	pCi/g	U		1.2
299-W15-48	100	102	B1HK52		4/4/2006	0.17	pCi/g	U		0.17	0.45	pCi/g	U		0.45	0.53	pCi/g	U		0.53
299-W15-48	103	105	B1HK47	R	4/6/2006	0.13	pCi/g	U		0.13	0.34	pCi/g	U		0.34	0.44	pCi/g	U		0.44
299-W15-48	103	105	B1HL22	R	4/6/2006	0.17	pCi/g	U		0.17	0.41	pCi/g	U		0.41	0.5	pCi/g	U		0.5
299-W15-48	118.5	120.5	B1HK42		4/13/2006	0.25	pCi/g	U		0.25	0.78	pCi/g	U		0.78	0.81	pCi/g	U		0.81
299-W15-48	122.5	124.5	B1HK53		4/18/2006	0	pCi/g	U		0.013	0	pCi/g	U		0.041	0.014	pCi/g	U		0.041
299-W15-48	122.5	124.5	B1HK57		4/18/2006	2.9	pCi/g	U		2.9	6	pCi/g	U		6	8.5	pCi/g	U		8.5
299-W15-48	128.5	130.5	B1HK58		4/24/2006	-0.004	pCi/g	U		0.015	-0.005	pCi/g	U		0.05	-0.011	pCi/g	U		0.045
299-W15-48	128.5	130.5	B1HK62		4/24/2006	0.13	pCi/g	U		0.13	0.2	pCi/g	U		0.2	0.4	pCi/g	U		0.4
299-W15-48	131.5	133	B1HK63		4/27/2006	-0.003	pCi/g	U		0.01	0.002	pCi/g	U		0.038	-0.003	pCi/g	U		0.03
299-W15-48	131.5	133	B1HK67		4/27/2006	0.067	pCi/g	U		0.067	0.16	pCi/g	U		0.16	0.2	pCi/g	U		0.2
299-W15-48	135	140	B1HK73		5/3/2006	0	pCi/g	U		0.017	0.01	pCi/g	U		0.056	-0.004	pCi/g	U		0.062
299-W15-48	135	140	B1HK77	S	5/3/2006	1.7	pCi/g	U		1.7	4.2	pCi/g	U		4.2	5.8	pCi/g	U		5.8
299-W15-48	135	140	B1HL26	S	5/3/2006	2.2	pCi/g	U		2.2	3.6	pCi/g	U		3.6	5.9	pCi/g	U		5.9
299-W15-48	135	140	B1HL26	S	5/3/2006															
			B1HKY0	EB	4/19/2006	-3.55	pCi/L	U		7.5	1.5	pCi/L	U		23	-10	pCi/L	U		18
			B1HKY0	EB	4/19/2006															
					TQL (pCi/g)					0.05					N/A					N/A

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Table B-10. Radiochemical Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Technetium-99 (14133-76-7)					Technetium-99 (14133-76-7)					Thorium-228 (14274-82-9)				
						Sep/GPC					TEVA/LSC					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-48	52.5	54.5	B1HK99		3/13/2006	14.3	pCi/g			4.1						1.5	pCi/g	U		1.5
299-W15-48	67	69	B1HK27		3/20/2006	71.1	pCi/g			9.8						0.836	pCi/g			0.39
299-W15-48	70	72	B1HK32		3/22/2006	272	pCi/g			73						1.4	pCi/g			0.76
299-W15-48	100	102	B1HK52		4/4/2006	22.1	pCi/g			17						0.924	pCi/g			0.2
299-W15-48	103	105	B1HK47	R	4/6/2006	7.61	pCi/g	U		26						0.87	pCi/g			0.23
299-W15-48	103	105	B1HL22	R	4/6/2006	2.15	pCi/g	U		26						0.97	pCi/g			0.29
299-W15-48	118.5	120.5	B1HK42		4/13/2006	-4.77	pCi/g	U		18						1.48	pCi/g			0.63
299-W15-48	122.5	124.5	B1HK53		4/18/2006															
299-W15-48	122.5	124.5	B1HK57		4/18/2006	0.823	pCi/g	U		2.8						3.3	pCi/g	U		3.3
299-W15-48	128.5	130.5	B1HK58		4/24/2006															
299-W15-48	128.5	130.5	B1HK62		4/24/2006	0.253	pCi/g	U		0.62						1.53	pCi/g			0.13
299-W15-48	131.5	133	B1HK63		4/27/2006															
299-W15-48	131.5	133	B1HK67		4/27/2006	0.196	pCi/g	U		0.55						0.291	pCi/g			0.08
299-W15-48	135	140	B1HK73		5/3/2006															
299-W15-48	135	140	B1HK77	S	5/3/2006	0.567	pCi/g	U		4.6						2.2	pCi/g	U		2.2
299-W15-48	135	140	B1HL26	S	5/3/2006											1.9	pCi/g	U		1.9
299-W15-48	135	140	B1HL26	S	5/3/2006					0.363	pCi/g	U		0.636						
			B1HKY0	EB	4/19/2006															
			B1HKY0	EB	4/19/2006															
					TQL (pCi/g)					15					15					N/A

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Table B-10. Radiochemical Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Thorium-228 (14274-82-9)					Thorium-228 (14274-82-9)					Thorium-230 (14269-63-7)				
						IX/Plate/AEA					IX/Prec/AEA					IX/Plate/AEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-48	52.5	54.5	B1HK99		3/13/2006	22.1	pCi/g	U		210					21.9	pCi/g	U		170	
299-W15-48	67	69	B1HK27		3/20/2006	58.1	pCi/g	U		640					-231	pCi/g	U		440	
299-W15-48	70	72	B1HK32		3/22/2006	166	pCi/g	U		460					102	pCi/g	U		270	
299-W15-48	100	102	B1HK52		4/4/2006	-58.1	pCi/g	U		440					-57.9	pCi/g	U		440	
299-W15-48	103	105	B1HK47	R	4/6/2006	0	pCi/g	U		470					-61.4	pCi/g	U		470	
299-W15-48	103	105	B1HL22	R	4/6/2006	-13	pCi/g	U		46					27.4	pCi/g	U		230	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	-20	pCi/g	U		82					-48.5	pCi/g	U		460	
299-W15-48	122.5	124.5	B1HK53		4/18/2006															
299-W15-48	122.5	124.5	B1HK57		4/18/2006	0.923	pCi/g			0.88					0.46	pCi/g	U		0.88	
299-W15-48	128.5	130.5	B1HK58		4/24/2006															
299-W15-48	128.5	130.5	B1HK62		4/24/2006	1.46	pCi/g			0.23					1.57	pCi/g	B		0.23	
299-W15-48	131.5	133	B1HK63		4/27/2006															
299-W15-48	131.5	133	B1HK67		4/27/2006	0.542	pCi/g			0.29					2.7	pCi/g	B		0.23	
299-W15-48	135	140	B1HK73		5/3/2006															
299-W15-48	135	140	B1HK77	S	5/3/2006	2.13	pCi/g	U		8.1					2.12	pCi/g	U		8.1	
299-W15-48	135	140	B1HL26	S	5/3/2006															
299-W15-48	135	140	B1HL26	S	5/3/2006						2.2	pCi/g		1.15						
			B1HKY0	EB	4/19/2006															
			B1HKY0	EB	4/19/2006	-0.018	pCi/L	U		0.17					-0.035	pCi/L	U		0.17	
					TQL (pCi/g)					N/A					N/A				N/A	

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Table B-10. Radiochemical Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Thorium-230 (14269-63-7)					Thorium-232 (TH-232)					Thorium-232 (TH-232)				
						IX/Prec/AEA					GEA					IX/Plate/AEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-48	52.5	54.5	B1HK99		3/13/2006					4	pCi/g	U		4	0	pCi/g	U	170		
299-W15-48	67	69	B1HK27		3/20/2006					1.1	pCi/g	U		1.1	-57.8	pCi/g	U	440		
299-W15-48	70	72	B1HK32		3/22/2006					1.64	pCi/g			1.3	-20.5	pCi/g	U	200		
299-W15-48	100	102	B1HK52		4/4/2006					0.7	pCi/g			0.69	57.9	pCi/g	U	440		
299-W15-48	103	105	B1HK47	R	4/6/2006					0.616	pCi/g			0.6	0	pCi/g	U	470		
299-W15-48	103	105	B1HL22	R	4/6/2006					0.77	pCi/g			0.67	-17.3	pCi/g	U	53		
299-W15-48	118.5	120.5	B1HK42		4/13/2006					1.36	pCi/g			1.2	-17.1	pCi/g	U	100		
299-W15-48	122.5	124.5	B1HK53		4/18/2006															
299-W15-48	122.5	124.5	B1HK57		4/18/2006					21	pCi/g	U		21	1.5	pCi/g		0.88		
299-W15-48	128.5	130.5	B1HK58		4/24/2006															
299-W15-48	128.5	130.5	B1HK62		4/24/2006					1.37	pCi/g			0.51	1.42	pCi/g		0.23		
299-W15-48	131.5	133	B1HK63		4/27/2006															
299-W15-48	131.5	133	B1HK67		4/27/2006					0.29	pCi/g	U		0.29	0.451	pCi/g		0.23		
299-W15-48	135	140	B1HK73		5/3/2006															
299-W15-48	135	140	B1HK77	S	5/3/2006					9	pCi/g	U		9	0	pCi/g	U	8.1		
299-W15-48	135	140	B1HL26	S	5/3/2006					7.2	pCi/g	U		7.2						
299-W15-48	135	140	B1HL26	S	5/3/2006	7.34	pCi/g		0.706											
			B1HKY0	EB	4/19/2006															
			B1HKY0	EB	4/19/2006										-0.018	pCi/L	U	0.14		
					TQL (pCi/g)		N/A				1					1				

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Table B-10. Radiochemical Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tritium (10028-17-8)				Tritium (10028-17-8)				Uranium-233/234 (U-233/234)					
						CombOx/LSC				Dist/LSC				IX/Prec/AEA					
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HK99		3/13/2006														
299-W15-48	67	69	B1HK27		3/20/2006	0.378	pCi/g	U		15									
299-W15-48	70	72	B1HK32		3/22/2006	-0.603	pCi/g	U		18									
299-W15-48	100	102	B1HK52		4/4/2006	-3.22	pCi/g	U		17									
299-W15-48	103	105	B1HK47	R	4/6/2006	5.58	pCi/g	U		15									
299-W15-48	103	105	B1HL22	R	4/6/2006	9.19	pCi/g	U		15									
299-W15-48	118.5	120.5	B1HK42		4/13/2006	4.07	pCi/g	U		14									
299-W15-48	122.5	124.5	B1HK53		4/18/2006									0.21	pCi/g				0.02
299-W15-48	122.5	124.5	B1HK57		4/18/2006	-0.249	pCi/g	U		2.9									
299-W15-48	128.5	130.5	B1HK58		4/24/2006									0.16	pCi/g				0.017
299-W15-48	128.5	130.5	B1HK62		4/24/2006	0.827	pCi/g	U		2.5									
299-W15-48	131.5	133	B1HK63		4/27/2006									0.68	pCi/g				0.02
299-W15-48	131.5	133	B1HK67		4/27/2006	-0.424	pCi/g	U		2.4									
299-W15-48	135	140	B1HK73		5/3/2006									0.18	pCi/g				0.013
299-W15-48	135	140	B1HK77	S	5/3/2006	-0.016	pCi/g	U		3									
299-W15-48	135	140	B1HL26	S	5/3/2006														
299-W15-48	135	140	B1HL26	S	5/3/2006														
			B1HKY0	EB	4/19/2006					11	pCi/L	U		210	0.047	pCi/L			0.044
			B1HKY0	EB	4/19/2006														
					TQL (pCi/g)					400				400					1

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Table B-10. Radiochemical Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Uranium-235 (15117-96-1)				
						Sep/Plate/AEA				
						Conc'n	Units	Q	VQ	MDA
299-W15-48	52.5	54.5	B1HK99		3/13/2006	0	pCi/g	U		77
299-W15-48	67	69	B1HK27		3/20/2006	79.8	pCi/g	U		610
299-W15-48	70	72	B1HK32		3/22/2006	0	pCi/g	U		470
299-W15-48	100	102	B1HK52		4/4/2006	21.6	pCi/g	U		83
299-W15-48	103	105	B1HK47	R	4/6/2006	-24.4	pCi/g	U		120
299-W15-48	103	105	B1HL22	R	4/6/2006	-10.8	pCi/g	U		82
299-W15-48	118.5	120.5	B1HK42		4/13/2006	-21.9	pCi/g	U		170
299-W15-48	122.5	124.5	B1HK53		4/18/2006					
299-W15-48	122.5	124.5	B1HK57		4/18/2006					
299-W15-48	128.5	130.5	B1HK58		4/24/2006					
299-W15-48	128.5	130.5	B1HK62		4/24/2006					
299-W15-48	131.5	133	B1HK63		4/27/2006					
299-W15-48	131.5	133	B1HK67		4/27/2006					
299-W15-48	135	140	B1HK73		5/3/2006					
299-W15-48	135	140	B1HK77	S	5/3/2006					
299-W15-48	135	140	B1HL26	S	5/3/2006	-0.294	pCi/g	U		2.2
299-W15-48	135	140	B1HL26	S	5/3/2006					
			B1HKY0	EB	4/19/2006					
			B1HKY0	EB	4/19/2006					
					TQL (pCi/g)				1	

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Table B-10. Radiochemical Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Uranium-238 (U-238)					Uranium-238 (U-238)					Uranium-238 (U-238)				
							GEA					IX/Prec/AEA					Sep/Plate/AEA				
							Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-48	52.5	54.5	B1HK99		3/13/2006	EBRLNE	120	pCi/g	U		120					0	pCi/g	U		64	
299-W15-48	67	69	B1HK27		3/20/2006	EBRLNE	21	pCi/g	U		21					66	pCi/g	U		500	
299-W15-48	70	72	B1HK32		3/22/2006	EBRLNE	43	pCi/g	U		43					0	pCi/g	U		380	
299-W15-48	100	102	B1HK52		4/4/2006	EBRLNE	17	pCi/g	U		17					-17.8	pCi/g	U		85	
299-W15-48	103	105	B1HK47	R	4/6/2006	EBRLNE	17	pCi/g	U		17					-10.1	pCi/g	U		77	
299-W15-48	103	105	B1HL22	R	4/6/2006	EBRLNE	19	pCi/g	U		19					-17.8	pCi/g	U		85	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	EBRLNE	27	pCi/g	U		27					18.1	pCi/g	U		140	
299-W15-48	122.5	124.5	B1HK53		4/18/2006	WSCF					0.24	pCi/g			0.005						
299-W15-48	122.5	124.5	B1HK57		4/18/2006	EBRLNE	350	pCi/g	U		350										
299-W15-48	128.5	130.5	B1HK58		4/24/2006	WSCF					0.18	pCi/g			0.004						
299-W15-48	128.5	130.5	B1HK62		4/24/2006	EBRLNE	14	pCi/g	U		14										
299-W15-48	131.5	133	B1HK63		4/27/2006	WSCF					0.56	pCi/g			0.005						
299-W15-48	131.5	133	B1HK67		4/27/2006	EBRLNE	7.6	pCi/g	U		7.6										
299-W15-48	135	140	B1HK73		5/3/2006	WSCF					0.2	pCi/g			0.013						
299-W15-48	135	140	B1HK77	S	5/3/2006	EBRLNE	220	pCi/g	U		220										
299-W15-48	135	140	B1HL26	S	5/3/2006	EBRLNE	180	pCi/g	U		180					0.728	pCi/g	U		1.9	
			B1HKY0	EB	4/19/2006	WSCF					0.01	pCi/L	U		0.013						
						TQL (pCi/g)					1				1					1	

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1-(2-Butoxyethoxy)ethanol (54446-78-5)				1,1"-Biphenyl (92-52-4)				1,2,4-Trichlorobenzene (120-82-1)				1,2-Benzenedicarboxylic acid butyl 2-ethylhexyl ester (85-69-8)									
							8270				8270				8270				8270									
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ						
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	STLSL					35	µg/kg	U					35	µg/kg	U								
299-W15-48	67	69	B1HK27		3/20/2006	STLSL					35	µg/kg	U					35	µg/kg	U								
299-W15-48	70	72	B1HK32		3/22/2006	STLSL					35	µg/kg	U					35	µg/kg	U								
299-W15-48	100	102	B1HK52		4/4/2006	STLSL					36	µg/kg	U					36	µg/kg	U								
299-W15-48	103	105	B1HK47	R	4/6/2006	STLSL					36	µg/kg	U					36	µg/kg	U								
299-W15-48	103	105	B1HL22	R	4/6/2006	STLSL					36	µg/kg	U					36	µg/kg	U								
299-W15-48	118.5	120.5	B1HK42		4/13/2006	STLSL					36	µg/kg	U					36	µg/kg	U								
299-W15-48	122.5	124.5	B1HK57		4/18/2006	WSCF												320	µg/kg	U								
299-W15-48	128.5	130.5	B1HK62		4/24/2006	WSCF												340	µg/kg	U								
299-W15-48	131.5	133	B1HK67		4/27/2006	WSCF												180	µg/kg	U								
299-W15-48	135	140	B1HK77	S	5/3/2006	RLNP												350	µg/kg	U								
299-W15-48	135	140	B1HL26	S	5/3/2006	STLSL					35	µg/kg	U					35	µg/kg	U								
			B1HKY0	EB	4/19/2006	WSCF	5.1	µg/L	J									2.5	µg/L	U				9	µg/L	J		
					TLQ (µg/kg)						N/A							N/A						N/A				

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,2-Dichlorobenzene (95-50-1)				1,3-Dichlorobenzene (541-73-1)				1,4-Dichlorobenzene (106-46-7)				2,4,5-Trichlorophenol (95-95-4)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006	450	µg/kg	U		570	µg/kg	U		480	µg/kg	U		160	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006	470	µg/kg	U		600	µg/kg	U		500	µg/kg	U		170	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006	260	µg/kg	U		320	µg/kg	U		300	µg/kg	U		180	µg/kg	U	
299-W15-48	135	140	B1HK77	S	5/3/2006	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		870	µg/kg	U	
299-W15-48	135	140	B1HL26	S	5/3/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
			B1HKY0	EB	4/19/2006	1.4	µg/L	U		1.2	µg/L	U		1.2	µg/L	U		0.59	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2,4,6-Trichlorophenol (88-06-2)				2,4-Dichlorophenol (120-83-2)				2,4-Dimethylphenol (105-67-9)				2,4-Dinitrophenol (51-28-5)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		350	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		350	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		350	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		360	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		350	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		360	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		360	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006	150	µg/kg	U		160	µg/kg	U		320	µg/kg	U		630	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006	160	µg/kg	U		170	µg/kg	U		340	µg/kg	U		660	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006	180	µg/kg	U		200	µg/kg	U		270	µg/kg	U		730	µg/kg	U	
299-W15-48	135	140	B1HK77	S	5/3/2006	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		870	µg/kg	U	
299-W15-48	135	140	B1HL26	S	5/3/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		350	µg/kg	U	
			B1HKY0	EB	4/19/2006	0.35	µg/L	U		1.9	µg/L	U		1.5	µg/L	U		0.5	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2,4-Dinitrotoluene (121-14-2)				2,6-Dinitrotoluene (606-20-2)				2-Chloronaphthalene (91-58-7)				2-Chlorophenol (95-57-8)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006	190	µg/kg	U		250	µg/kg	U		230	µg/kg	U		270	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006	200	µg/kg	U		260	µg/kg	U		250	µg/kg	U		290	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006	180	µg/kg	U		180	µg/kg	U		180	µg/kg	U		180	µg/kg	U	
299-W15-48	135	140	B1HK77	S	5/3/2006	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-48	135	140	B1HL26	S	5/3/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
			B1HKY0	EB	4/19/2006	0.36	µg/L	U		0.3	µg/L	U		3.5	µg/L	U		0.3	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Methylnaphthalene (91-57-6)				2-Methylphenol (cresol, o-) (95-48-7)				2-Nitroaniline (88-74-4)				2-Nitrophenol (88-75-5)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006	270	µg/kg	U		290	µg/kg	U		180	µg/kg	U		320	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006	280	µg/kg	U		310	µg/kg	U		190	µg/kg	U		340	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006	180	µg/kg	U		180	µg/kg	U		180	µg/kg	U		200	µg/kg	U	
299-W15-48	135	140	B1HK77	S	5/3/2006	350	µg/kg	U		350	µg/kg	U		870	µg/kg	U		350	µg/kg	U	
299-W15-48	135	140	B1HL26	S	5/3/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
			B1HKY0	EB	4/19/2006	3.3	µg/L	U		0.84	µg/L	U		0.36	µg/L	U		0.5	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	3,3'-Dichlorobenzidine (91-94-1)				3+4 Methylphenol (cresol, m+p) (65794-96-9)				3-Nitroaniline (99-09-2)				4,6-Dinitro-2- methylphenol (534-52-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35	µg/kg	U		70	µg/kg	U		35	µg/kg	U		350	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006	35	µg/kg	U		71	µg/kg	U		35	µg/kg	U		350	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006	35	µg/kg	U		71	µg/kg	U		35	µg/kg	U		350	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006	36	µg/kg	U		72	µg/kg	U		36	µg/kg	U		360	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006	36	µg/kg	U		71	µg/kg	U		36	µg/kg	U		350	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006	36	µg/kg	U		72	µg/kg	U		36	µg/kg	U		360	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	36	µg/kg	U		73	µg/kg	U		36	µg/kg	U		360	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006	120	µg/kg	U		380	µg/kg	U		210	µg/kg	U		450	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006	130	µg/kg	U		390	µg/kg	U		220	µg/kg	U		480	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006	390	µg/kg	U		180	µg/kg	U		220	µg/kg	U		390	µg/kg	U	
299-W15-48	135	140	B1HK77	S	5/3/2006	350	µg/kg	U						870	µg/kg	U		870	µg/kg	U	
299-W15-48	135	140	B1HL26	S	5/3/2006	35	µg/kg	U		71	µg/kg	U		35	µg/kg	U		350	µg/kg	U	
			B1HKY0	EB	4/19/2006	0.87	µg/L	U		1.6	µg/L	U		0.34	µg/L	U		0.42	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	4-Bromophenylphenylether (101-55-3)				4-Chloro-3-methylphenol (59-50-7)				4-Chloroaniline (106-47-8)				4-Chlorophenylphenyl ether (7005-72-3)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006	180	µg/kg	U		170	µg/kg	U		540	µg/kg	U		180	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006	190	µg/kg	U		180	µg/kg	U		560	µg/kg	U		190	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006	180	µg/kg	U		180	µg/kg	U		330	µg/kg	U		180	µg/kg	U	
299-W15-48	135	140	B1HK77	S	5/3/2006	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-48	135	140	B1HL26	S	5/3/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
			B1HKY0	EB	4/19/2006	2.6	µg/L	U		0.29	µg/L	U		0.2	µg/L	U		3.6	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	4-Methylphenol (cresol, p-) (106-44-5)				4-Nitroaniline (100-01-6)				4-Nitrophenol (100-02-7)				Acenaphthene (83-32-9)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006					350	μg/kg	U		350	μg/kg	U		35	μg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006					350	μg/kg	U		350	μg/kg	U		35	μg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006					350	μg/kg	U		350	μg/kg	U		35	μg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006					360	μg/kg	U		360	μg/kg	U		36	μg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006					350	μg/kg	U		350	μg/kg	U		36	μg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006					360	μg/kg	U		360	μg/kg	U		36	μg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006					360	μg/kg	U		360	μg/kg	U		36	μg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006					310	μg/kg	U		310	μg/kg	U		250	μg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006					330	μg/kg	U		320	μg/kg	U		260	μg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006					330	μg/kg	U		390	μg/kg	U		180	μg/kg	U	
299-W15-48	135	140	B1HK77	S	5/3/2006	350	μg/kg	U		870	μg/kg	U		870	μg/kg	U		350	μg/kg	U	
299-W15-48	135	140	B1HL26	S	5/3/2006					350	μg/kg	U		350	μg/kg	U		35	μg/kg	U	
			B1HKY0	EB	4/19/2006					1.4	μg/L	U		0.89	μg/L	U		3.3	μg/L	U	
					TQL (μg/kg)	N/A				N/A				N/A				N/A			

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Acenaphthylene (208-96-8)				Acetophenone (98-86-2)				Anthracene (120-12-7)				Atrazine (1912-24-9)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006	260	µg/kg	U						270	µg/kg	U					
299-W15-48	128.5	130.5	B1HK62		4/24/2006	280	µg/kg	U						290	µg/kg	U					
299-W15-48	131.5	133	B1HK67		4/27/2006	180	µg/kg	U						180	µg/kg	U					
299-W15-48	135	140	B1HK77	S	5/3/2006	350	µg/kg	U						350	µg/kg	U					
299-W15-48	135	140	B1HL26	S	5/3/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
			B1HKY0	EB	4/19/2006	3.2	µg/L	U						0.81	µg/L	U					
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Benzaldehyde (100-52-7)				Benzo(a)anthracene (56-55-3)				Benzo(a)pyrene (50-32-8)				Benzo(b)fluoranthene (205-99-2)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006					230	µg/kg	U		220	µg/kg	U		270	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006					240	µg/kg	U		230	µg/kg	U		280	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006					180	µg/kg	U		270	µg/kg	U		230	µg/kg	U	
299-W15-48	135	140	B1HK77	S	5/3/2006					350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-48	135	140	B1HL26	S	5/3/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
			B1HKY0	EB	4/19/2006					0.46	µg/L	U		0.59	µg/L	U		0.35	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Benzo(ghi)perylene (191-24-2)				Benzo(k)fluoranthene (207-08-9)				Bis(2-chloro-1-methylethyl)ether (108-60-1)				Bis(2-Chloroethoxy)methane (111-91-1)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	STLSL	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006	STLSL	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006	STLSL	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006	STLSL	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006	STLSL	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006	STLSL	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	STLSL	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006	WSCF	270	µg/kg	U		190	µg/kg	U		320	µg/kg	U		220	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006	WSCF	290	µg/kg	U		200	µg/kg	U		330	µg/kg	U		230	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006	WSCF	380	µg/kg	U		240	µg/kg	U		180	µg/kg	U		180	µg/kg	U	
299-W15-48	135	140	B1HK77	S	5/3/2006	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-48	135	140	B1HL26	S	5/3/2006	STLSL	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
			B1HKY0	EB	4/19/2006	WSCF	1.4	µg/L	U		0.4	µg/L	U		0.99	µg/L	U		0.42	µg/L	U	
						TQL (µg/kg)		N/A			N/A			N/A		N/A			N/A			

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Bis(2-chloroethyl) ether (111-44-4)				Bis(2-ethylhexyl) phthalate (117-81-7)				Butylbenzylphthalate (85-68-7)				Caprolactam (105-60-2)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006	35	µg/kg	U		120	µg/kg	J		35	µg/kg	U		35	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006	35	µg/kg	U		500	µg/kg			35	µg/kg	U		35	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006	36	µg/kg	U		56	µg/kg	J		36	µg/kg	U		36	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006	360	µg/kg	U		180	µg/kg	U		150	µg/kg	U					
299-W15-48	128.5	130.5	B1HK62		4/24/2006	380	µg/kg	U		190	µg/kg	U		160	µg/kg	U					
299-W15-48	131.5	133	B1HK67		4/27/2006	180	µg/kg	U		180	µg/kg	U		180	µg/kg	U					
299-W15-48	135	140	B1HK77	S	5/3/2006	350	µg/kg	U		34	µg/kg	JB		350	µg/kg	U					
299-W15-48	135	140	B1HL26	S	5/3/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
			B1HKY0	EB	4/19/2006	0.47	µg/L	U		1.7	µg/L	U		1	µg/L	U					
					TQL (µg/kg)		N/A				N/A				N/A					N/A	

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbazole (86-74-8)				Chrysene (218-01-9)				Cyclohexane (110-82-7)				Decamethylcyclopentasiloxane (541-02-6)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35	µg/kg	U		35	µg/kg	U									
299-W15-48	67	69	B1HK27		3/20/2006	35	µg/kg	U		35	µg/kg	U						220	µg/kg		
299-W15-48	70	72	B1HK32		3/22/2006	35	µg/kg	U		35	µg/kg	U									
299-W15-48	100	102	B1HK52		4/4/2006	36	µg/kg	U		36	µg/kg	U									
299-W15-48	103	105	B1HK47	R	4/6/2006	36	µg/kg	U		36	µg/kg	U									
299-W15-48	103	105	B1HL22	R	4/6/2006	36	µg/kg	U		36	µg/kg	U									
299-W15-48	118.5	120.5	B1HK42		4/13/2006	36	µg/kg	U		36	µg/kg	U									
299-W15-48	122.5	124.5	B1HK57		4/18/2006	280	µg/kg	U		250	µg/kg	U									
299-W15-48	128.5	130.5	B1HK62		4/24/2006	290	µg/kg	U		270	µg/kg	U									
299-W15-48	131.5	133	B1HK67		4/27/2006	180	µg/kg	U		180	µg/kg	U									
299-W15-48	135	140	B1HK77	S	5/3/2006	350	µg/kg	U		350	µg/kg	U	2000	µg/kg	JBN						
299-W15-48	135	140	B1HL26	S	5/3/2006	35	µg/kg	U		35	µg/kg	U									
			B1HKY0	EB	4/19/2006	0.74	µg/L	U		0.45	µg/L	U									
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dibenz[a,h]anthracene (53-70-3)				Dibenzofuran (132-64-9)				Dibutyl Butylphosphonate (78-46-6)				Diethylphthalate (84-66-2)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35	µg/kg	U		35	µg/kg	U					35	µg/kg	U		
299-W15-48	67	69	B1HK27		3/20/2006	35	µg/kg	U		35	µg/kg	U					35	µg/kg	U		
299-W15-48	70	72	B1HK32		3/22/2006	35	µg/kg	U		35	µg/kg	U					35	µg/kg	U		
299-W15-48	100	102	B1HK52		4/4/2006	36	µg/kg	U		36	µg/kg	U					36	µg/kg	U		
299-W15-48	103	105	B1HK47	R	4/6/2006	36	µg/kg	U		36	µg/kg	U					36	µg/kg	U		
299-W15-48	103	105	B1HL22	R	4/6/2006	36	µg/kg	U		36	µg/kg	U					36	µg/kg	U		
299-W15-48	118.5	120.5	B1HK42		4/13/2006	36	µg/kg	U		36	µg/kg	U					36	µg/kg	U		
299-W15-48	122.5	124.5	B1HK57		4/18/2006	330	µg/kg	U		220	µg/kg	U		300	µg/kg	U		600	µg/kg		
299-W15-48	128.5	130.5	B1HK62		4/24/2006	350	µg/kg	U		230	µg/kg	U		310	µg/kg	U		710	µg/kg		
299-W15-48	131.5	133	B1HK67		4/27/2006	390	µg/kg	U		180	µg/kg	U		180	µg/kg	U		600	µg/kg	B	
299-W15-48	135	140	B1HK77	S	5/3/2006	350	µg/kg	U		350	µg/kg	U						350	µg/kg	U	
299-W15-48	135	140	B1HL26	S	5/3/2006	35	µg/kg	U		35	µg/kg	U						35	µg/kg	U	
			B1HKY0	EB	4/19/2006	1.3	µg/L	U		3.6	µg/L	U		0.34	µg/L	U		0.47	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dimethyl phthalate (131-11-3)				Di-n-butylphthalate (84-74-2)				Di-n-octylphthalate (117-84-0)				Fluoranthene (206-44-0)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35	µg/kg	U		35	µg/kg	U		15	µg/kg	U		35	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006	35	µg/kg	U		35	µg/kg	U		16	µg/kg	U		35	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006	35	µg/kg	U		100	µg/kg	J		16	µg/kg	U		35	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006	36	µg/kg	U		36	µg/kg	U		16	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		16	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		16	µg/kg	U		36	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	36	µg/kg	U		38	µg/kg	J		16	µg/kg	U		36	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006	230	µg/kg	U		1300	µg/kg			300	µg/kg	U		290	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006	240	µg/kg	U		800	µg/kg			310	µg/kg	U		300	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006	180	µg/kg	U		510	µg/kg	B		180	µg/kg	U		180	µg/kg	U	
299-W15-48	135	140	B1HK77	S	5/3/2006	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-48	135	140	B1HL26	S	5/3/2006	35	µg/kg	U		35	µg/kg	U		16	µg/kg	U		35	µg/kg	U	
			B1HKY0	EB	4/19/2006	0.35	µg/L	U		0.36	µg/L	U		2	µg/L	U		0.51	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Fluorene (86-73-7)				Hexachlorobenzene (118-74-1)				Hexachlorobutadiene (87-68-3)				Hexachlorocyclopentadiene (77-47-4)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		350	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		350	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		350	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		360	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		350	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		360	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		360	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006	240	µg/kg	U		250	µg/kg	U		300	µg/kg	U		580	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006	260	µg/kg	U		260	µg/kg	U		310	µg/kg	U		610	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006	180	µg/kg	U		180	µg/kg	U		180	µg/kg	U		180	µg/kg	U	
299-W15-48	135	140	B1HK77	S	5/3/2006	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-48	135	140	B1HL26	S	5/3/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		350	µg/kg	U	
			B1HKY0	EB	4/19/2006	3	µg/L	U		1.1	µg/L	U		1.4	µg/L	U		0.62	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Indeno(1,2,3-cd)pyrene (193-39-5)				Isophorone (78-59-1)				Naphthalene (91-20-3)				Nitrobenzene (98-95-3)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006	290	µg/kg	U		300	µg/kg	U		290	µg/kg	U		300	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006	310	µg/kg	U		310	µg/kg	U		310	µg/kg	U		310	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006	390	µg/kg	U		180	µg/kg	U		180	µg/kg	U		180	µg/kg	U	
299-W15-48	135	140	B1HK77	S	5/3/2006	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-48	135	140	B1HL26	S	5/3/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
			B1HKY0	EB	4/19/2006	1.3	µg/L	U		0.36	µg/L	U		1	µg/L	U		0.84	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	n-Nitrosodi-n-dipropylamine (621-64-7)				n-Nitrosodiphenylamine (86-30-6)				Octadecanoic acid (57-11-4)				Pentachlorophenol (87-86-5)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35	µg/kg	U		35	µg/kg	U					350	µg/kg	U		
299-W15-48	67	69	B1HK27		3/20/2006	35	µg/kg	U		35	µg/kg	U		220	µg/kg			350	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006	35	µg/kg	U		35	µg/kg	U						350	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006	36	µg/kg	U		36	µg/kg	U						360	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006	36	µg/kg	U		36	µg/kg	U						350	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006	36	µg/kg	U		36	µg/kg	U						360	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	36	µg/kg	U		36	µg/kg	U						360	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006	270	µg/kg	U		260	µg/kg	U						260	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006	280	µg/kg	U		270	µg/kg	U						270	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006	180	µg/kg	U		190	µg/kg	U						470	µg/kg	U	
299-W15-48	135	140	B1HK77	S	5/3/2006	350	µg/kg	U		350	µg/kg	U						870	µg/kg	U	
299-W15-48	135	140	B1HL26	S	5/3/2006	35	µg/kg	U		35	µg/kg	U						350	µg/kg	U	
			B1HKY0	EB	4/19/2006	0.37	µg/L	U		0.56	µg/L	U						0.53	µg/L	U	
					TQL (µg/kg)	N/A				N/A				N/A				N/A			

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Table B-11. Semi-Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Phenanthrene (85-01-8)				Phenol (108-95-2)				Pyrene (129-00-0)				Tributyl phosphate (126-73-8)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		35	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		120000	µg/kg		
299-W15-48	70	72	B1HK32		3/22/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		3000000	µg/kg	D	
299-W15-48	100	102	B1HK52		4/4/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		46000	µg/kg	D	
299-W15-48	103	105	B1HK47	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		49	µg/kg	J	
299-W15-48	103	105	B1HL22	R	4/6/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		36	µg/kg	U	
299-W15-48	118.5	120.5	B1HK42		4/13/2006	36	µg/kg	U		36	µg/kg	U		36	µg/kg	U		4200	µg/kg		
299-W15-48	122.5	124.5	B1HK57		4/18/2006	250	µg/kg	U		250	µg/kg	U		1300	µg/kg	U		98	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006	270	µg/kg	U		260	µg/kg	U		1400	µg/kg	U		100	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006	180	µg/kg	U		180	µg/kg	U		180	µg/kg	U		180	µg/kg	U	
299-W15-48	135	140	B1HK77	S	5/3/2006	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		63	µg/kg	J	
299-W15-48	135	140	B1HL26	S	5/3/2006	35	µg/kg	U		35	µg/kg	U		35	µg/kg	U		84	µg/kg	J	
			B1HKY0	EB	4/19/2006	1.1	µg/L	U		0.69	µg/L	U		0.34	µg/L	U		0.32	µg/L	U	
					TQL (µg/kg)	N/A				330				N/A				3300			

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1,2,2-Tetrachloroethane (79-34-5)				1,1,2-Trichloroethane (79-00-5)				1,1-Dichloroethane (75-34-3)								
							8260				8260				8260				8260								
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ					
299-W15-48	52.5	54.5	B1HKB1		3/13/2006	STLSL	0.55	µg/kg	U				0.66	µg/kg	U			0.5	µg/kg	U			0.68	µg/kg	U		
299-W15-48	52.5	54.5	B1K8W8	R	3/14/2006	FIELD																					
299-W15-48	52.5	54.5	B1K8W9	R	3/14/2006	FIELD																					
299-W15-48	52.5	54.5	B1K8X0	R	3/14/2006	FIELD																					
299-W15-48	52.5	54.5	B1K8X1	R	3/14/2006	FIELD																					
299-W15-48	52.5	54.5	B1K945		3/14/2006	FIELD																					
299-W15-48	52.5	54.5	B1K946		3/14/2006	FIELD																					
299-W15-48	52.5	54.5	B1K947		3/14/2006	FIELD																					
299-W15-48	67	69	B1HK24		3/20/2006	STLSL	47	µg/kg	U				15	µg/kg	U			60	µg/kg	U			81	µg/kg	U		
299-W15-48	67	69	B1HK25		3/20/2006	STLSL	0.17	µg/kg	U				3.8	µg/kg	J			0.48	µg/kg	U			0.19	µg/kg	U		
299-W15-48	70	72	B1HK29		3/22/2006	STLSL	44	µg/kg	U				14	µg/kg	U			57	µg/kg	U			77	µg/kg	U		
299-W15-48	70	72	B1HK30		3/22/2006	STLSL	0.17	µg/kg	U				0.31	µg/kg	U			0.5	µg/kg	U			0.19	µg/kg	U		
299-W15-48	70	72	B1K8X2	R	3/23/2006	FIELD																					
299-W15-48	70	72	B1K8X3	R	3/23/2006	FIELD																					
299-W15-48	70	72	B1K8X4	R	3/23/2006	FIELD																					
299-W15-48	70	72	B1K8X5	R	3/23/2006	FIELD																					
299-W15-48	70	72	B1K943		3/23/2006	FIELD																					
299-W15-48	70	72	B1K944		3/23/2006	FIELD																					
299-W15-48	73	75	B1HK34		3/27/2006	STLSL	52	µg/kg	U				17	µg/kg	U			67	µg/kg	U			90	µg/kg	U		
299-W15-48	73	75	B1HK35		3/27/2006	STLSL	0.22	µg/kg	U				5.1	µg/kg	J			0.63	µg/kg	U			0.24	µg/kg	U		
299-W15-48	100	102	B1HK49		4/4/2006	STLSL	46	µg/kg	U				24	µg/kg	JB			59	µg/kg	U			80	µg/kg	U		
299-W15-48	100	102	B1HK50		4/4/2006	STLSL	0.21	µg/kg	U				0.37	µg/kg	U			0.61	µg/kg	U			0.24	µg/kg	U		
299-W15-48	100	102	B1K8X6	R	4/4/2006	FIELD																					
299-W15-48	100	102	B1K8X7	R	4/4/2006	FIELD																					
299-W15-48	100	102	B1K8X8	R	4/4/2006	FIELD																					
299-W15-48	100	102	B1K8X9	R	4/4/2006	FIELD																					
299-W15-48	103	105	B1HK44	R	4/6/2006	STLSL	47	µg/kg	U				15	µg/kg	U			60	µg/kg	U			81	µg/kg	U		
299-W15-48	103	105	B1HK45	R	4/6/2006	STLSL	0.19	µg/kg	U				0.34	µg/kg	U			0.55	µg/kg	U			0.21	µg/kg	U		
299-W15-48	103	105	B1HL19	R	4/6/2006	STLSL	46	µg/kg	U				15	µg/kg	U			59	µg/kg	U			80	µg/kg	U		
299-W15-48	103	105	B1HL20	R	4/6/2006	STLSL	0.19	µg/kg	U				0.33	µg/kg	U			0.54	µg/kg	U			0.21	µg/kg	U		
299-W15-48	118.5	120.5	B1HK40		4/13/2006	STLSL	0.18	µg/kg	U				0.32	µg/kg	U			0.53	µg/kg	U			0.21	µg/kg	U		
299-W15-48	118.5	120.5	B1K8Y0	R	4/13/2006	FIELD																					
299-W15-48	118.5	120.5	B1K8Y1	R	4/13/2006	FIELD																					
299-W15-48	118.5	120.5	B1K8Y2	R	4/13/2006	FIELD																					
299-W15-48	118.5	120.5	B1K8Y3	R	4/13/2006	FIELD																					
299-W15-48	118.5	120.5	B1K8Y4	R	4/17/2006	FIELD																					
299-W15-48	118.5	120.5	B1K8Y5	R	4/17/2006	FIELD																					
299-W15-48	118.5	120.5	B1K8Y6	R	4/17/2006	FIELD																					
299-W15-48	118.5	120.5	B1K8Y7	R	4/17/2006	FIELD																					
299-W15-48	118.5	120.5	B1K941		4/17/2006	FIELD																					

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1,2,2-Tetrachloroethane (79-34-5)				1,1,2-Trichloroethane (79-00-5)				1,1-Dichloroethane (75-34-3)			
							8260				8260				8260				8260			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	135.3	140	B1K933		5/4/2006	FIELD																
299-W15-48	139.5	145.5	B1J7Y1		5/9/2006	WSCF																
299-W15-48	139.5	145.5	B1J7Y7		5/11/2006	WSCF																
299-W15-48	139.5	145.5	B1K918	R	5/9/2006	FIELD																
299-W15-48	139.5	145.5	B1K919	R	5/9/2006	FIELD																
299-W15-48	139.5	145.5	B1K920	R	5/9/2006	FIELD																
299-W15-48	139.5	145.5	B1K921	R	5/9/2006	FIELD																
299-W15-48	139.5	145.5	B1K922	R	5/11/2006	FIELD																
299-W15-48	139.5	145.5	B1K923	R	5/11/2006	FIELD																
299-W15-48	139.5	145.5	B1K924	R	5/11/2006	FIELD																
299-W15-48	139.5	145.5	B1K925	R	5/11/2006	FIELD																
299-W15-48	139.5	145.5	B1K926		5/11/2006	FIELD																
299-W15-48	139.5	145.5	B1K928		5/9/2006	FIELD																
299-W15-48	139.5	145.5	B1K929		5/9/2006	FIELD																
299-W15-48	99999	99999	B1K927		5/11/2006	FIELD																
299-W15-48	99999	99999	B1K930		5/8/2006	FIELD																
299-W15-48	99999	99999	B1K932		5/4/2006	FIELD																
299-W15-48	99999	99999	B1K938		4/25/2006	FIELD																
299-W15-48	99999	99999	B1K940		4/19/2006	FIELD																
			B1HKY0	EB	4/19/2006	WSCF	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
	99999	99999	B1HK26	FB	3/20/2006	STLSL	42	µg/kg	U		14	µg/kg	U		54	µg/kg	U		72	µg/kg	U	
	99999	99999	B1HK36	FB	3/27/2006	STLSL	42	µg/kg	U		14	µg/kg	U		54	µg/kg	U		72	µg/kg	U	
	99999	99999	B1HK51	FB	4/4/2006	STLSL	42	µg/kg	U		14	µg/kg	U		54	µg/kg	U		72	µg/kg	U	
	99999	99999	B1HK56	FB	4/18/2006	WSCF	250	µg/kg	U		250	µg/kg	U		250	µg/kg	U		250	µg/kg	U	
	99999	99999	B1HK61	FB	4/24/2006	WSCF	250	µg/kg	U		250	µg/kg	U		250	µg/kg	U		250	µg/kg	U	
	99999	99999	B1HK66	FB	4/27/2006	WSCF	130	µg/kg	U		130	µg/kg	U		130	µg/kg	U		130	µg/kg	U	
	99999	99999	B1HK76	FB	5/3/2006	RLNP	320	µg/kg	U		320	µg/kg	U		320	µg/kg	U		320	µg/kg	U	
	99999	99999	B1HKB2	FB	3/13/2006	STLSL	42	µg/kg	U		14	µg/kg	U		54	µg/kg	U		72	µg/kg	U	
	99999	99999	B1HL21	FB	4/6/2006	STLSL	42	µg/kg	U		14	µg/kg	U		54	µg/kg	U		72	µg/kg	U	
	99999	99999	B1HL25	FB	5/3/2006	STLSL	42	µg/kg	U		14	µg/kg	U		54	µg/kg	U		72	µg/kg	U	
			B1HKY9	TB	4/19/2006	WSCF	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1HL00	TB	4/25/2006	WSCF	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1HL01	TB	4/27/2006	WSCF	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1HL03	TB	5/3/2006	WSCF	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1HL07	TB	3/22/2006	STLSL	0.15	µg/L	U		0.14	µg/L	U		0.28	µg/L	U		0.95	µg/L	U	
			B1HL10	TB	4/6/2006	STLSL	0.15	µg/L	U		0.14	µg/L	U		0.28	µg/L	U		0.95	µg/L	U	
						TQL (µg/kg)		5			N/A				N/A						10	

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,1-Dichloroethene (75-35-4)				1,2,4- Trimethylbenzene (95-63-6)				1,2,4- Trimethylbenzene (95-63-6)				1,2-Dichloroethane (107-06-2)			
						8260				8260				8270				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB1		3/13/2006	0.67	µg/kg	U		0.37	µg/kg	U					0.56	µg/kg	U		
299-W15-48	52.5	54.5	B1K8W8	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8W9	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X0	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X1	R	3/14/2006																
299-W15-48	52.5	54.5	B1K945		3/14/2006																
299-W15-48	52.5	54.5	B1K946		3/14/2006																
299-W15-48	52.5	54.5	B1K947		3/14/2006																
299-W15-48	67	69	B1HK24		3/20/2006	65	µg/kg	U		33	µg/kg	U					90	µg/kg	U		
299-W15-48	67	69	B1HK25		3/20/2006	0.67	µg/kg	U		0.21	µg/kg	U					0.77	µg/kg	U		
299-W15-48	70	72	B1HK29		3/22/2006	61	µg/kg	U		32	µg/kg	U					85	µg/kg	U		
299-W15-48	70	72	B1HK30		3/22/2006	0.69	µg/kg	U		0.21	µg/kg	U					0.79	µg/kg	U		
299-W15-48	70	72	B1K8X2	R	3/23/2006																
299-W15-48	70	72	B1K8X3	R	3/23/2006																
299-W15-48	70	72	B1K8X4	R	3/23/2006																
299-W15-48	70	72	B1K8X5	R	3/23/2006																
299-W15-48	70	72	B1K943		3/23/2006																
299-W15-48	70	72	B1K944		3/23/2006																
299-W15-48	73	75	B1HK34		3/27/2006	72	µg/kg	U		37	µg/kg	U					100	µg/kg	U		
299-W15-48	73	75	B1HK35		3/27/2006	0.87	µg/kg	U		0.27	µg/kg	U					1	µg/kg	U		
299-W15-48	100	102	B1HK49		4/4/2006	64	µg/kg	U		33	µg/kg	U					89	µg/kg	U		
299-W15-48	100	102	B1HK50		4/4/2006	0.85	µg/kg	U		0.26	µg/kg	U					0.97	µg/kg	U		
299-W15-48	100	102	B1K8X6	R	4/4/2006																
299-W15-48	100	102	B1K8X7	R	4/4/2006																
299-W15-48	100	102	B1K8X8	R	4/4/2006																
299-W15-48	100	102	B1K8X9	R	4/4/2006																
299-W15-48	103	105	B1HK44	R	4/6/2006	65	µg/kg	U		33	µg/kg	U					90	µg/kg	U		
299-W15-48	103	105	B1HK45	R	4/6/2006	0.76	µg/kg	U		0.24	µg/kg	U					0.87	µg/kg	U		
299-W15-48	103	105	B1HL19	R	4/6/2006	64	µg/kg	U		33	µg/kg	U					88	µg/kg	U		
299-W15-48	103	105	B1HL20	R	4/6/2006	0.75	µg/kg	U		0.23	µg/kg	U					0.86	µg/kg	U		
299-W15-48	118.5	120.5	B1HK40		4/13/2006	0.74	µg/kg	U		0.23	µg/kg	U					0.84	µg/kg	U		
299-W15-48	118.5	120.5	B1K8Y0	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y1	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y2	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y3	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y4	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y5	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y6	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y7	R	4/17/2006																
299-W15-48	118.5	120.5	B1K941		4/17/2006																

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,1-Dichloroethene (75-35-4)				1,2,4-Trimethylbenzene (95-63-6)				1,2,4-Trimethylbenzene (95-63-6)				1,2-Dichloroethane (107-06-2)			
						8260				8260				8270				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	118.5	120.5	B1K942		4/17/2006																
299-W15-48	122.5	124.5	B1HK54		4/18/2006	12	µg/kg	U										12	µg/kg	U	
299-W15-48	122.5	124.5	B1HK55		4/18/2006	1.4	µg/kg	U										1.4	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006									120	µg/kg	U					
299-W15-48	122.5	124.5	B1K8Y8	R	4/19/2006																
299-W15-48	122.5	124.5	B1K8Y9	R	4/19/2006																
299-W15-48	122.5	124.5	B1K900	R	4/19/2006																
299-W15-48	122.5	124.5	B1K901	R	4/19/2006																
299-W15-48	128.5	130.5	B1HK59		4/24/2006	12	µg/kg	U										12	µg/kg	U	
299-W15-48	128.5	130.5	B1HK60		4/24/2006	1.3	µg/kg	U										1.3	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006									130	µg/kg	U					
299-W15-48	128.5	130.5	B1K902	R	4/25/2006																
299-W15-48	128.5	130.5	B1K903	R	4/25/2006																
299-W15-48	128.5	130.5	B1K904	R	4/25/2006																
299-W15-48	128.5	130.5	B1K905	R	4/25/2006																
299-W15-48	128.5	130.5	B1K937		4/25/2006																
299-W15-48	128.5	130.5	B1K939		4/25/2006																
299-W15-48	131.5	133	B1HK64		4/27/2006	120	µg/kg	U										120	µg/kg	U	
299-W15-48	131.5	133	B1HK65		4/27/2006	1.2	µg/kg	U										1.2	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006									180	µg/kg	U					
299-W15-48	131.5	133	B1K906	R	4/27/2006																
299-W15-48	131.5	133	B1K907	R	4/27/2006																
299-W15-48	131.5	133	B1K908	R	4/27/2006																
299-W15-48	131.5	133	B1K909	R	4/27/2006																
299-W15-48	131.5	133	B1K934		4/27/2006																
299-W15-48	131.5	133	B1K935		4/27/2006																
299-W15-48	131.5	133	B1K936		4/27/2006																
299-W15-48	135	140	B1HK74	S	5/3/2006	190	µg/kg	U										190	µg/kg	U	
299-W15-48	135	140	B1HK75	S	5/3/2006	3	µg/kg	U										3	µg/kg	U	
299-W15-48	135	140	B1HL24	S	5/3/2006	0.72	µg/kg	U		0.22	µg/kg	U						0.82	µg/kg	U	
299-W15-48	139.5	140	B1J7W6		5/8/2006																
299-W15-48	135.3	140	B1K910	R	5/4/2006																
299-W15-48	135.3	140	B1K911	R	5/4/2006																
299-W15-48	135.3	140	B1K912	R	5/4/2006																
299-W15-48	135.3	140	B1K913	R	5/4/2006																
299-W15-48	139.5	140	B1K914	R	5/8/2006																
299-W15-48	139.5	140	B1K915	R	5/8/2006																
299-W15-48	139.5	140	B1K916	R	5/8/2006																
299-W15-48	139.5	140	B1K917	R	5/8/2006																
299-W15-48	139.5	140	B1K931		5/8/2006																

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,1-Dichloroethene (75-35-4)				1,2,4-Trimethylbenzene (95-63-6)				1,2,4-Trimethylbenzene (95-63-6)				1,2-Dichloroethane (107-06-2)					
						8260				8260				8270				8260					
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ		
299-W15-48	135.3	140	B1K933		5/4/2006																		
299-W15-48	139.5	145.5	B1J7Y1		5/9/2006																		
299-W15-48	139.5	145.5	B1J7Y7		5/11/2006																		
299-W15-48	139.5	145.5	B1K918	R	5/9/2006																		
299-W15-48	139.5	145.5	B1K919	R	5/9/2006																		
299-W15-48	139.5	145.5	B1K920	R	5/9/2006																		
299-W15-48	139.5	145.5	B1K921	R	5/9/2006																		
299-W15-48	139.5	145.5	B1K922	R	5/11/2006																		
299-W15-48	139.5	145.5	B1K923	R	5/11/2006																		
299-W15-48	139.5	145.5	B1K924	R	5/11/2006																		
299-W15-48	139.5	145.5	B1K925	R	5/11/2006																		
299-W15-48	139.5	145.5	B1K926		5/11/2006																		
299-W15-48	139.5	145.5	B1K928		5/9/2006																		
299-W15-48	139.5	145.5	B1K929		5/9/2006																		
299-W15-48	99999	99999	B1K927		5/11/2006																		
299-W15-48	99999	99999	B1K930		5/8/2006																		
299-W15-48	99999	99999	B1K932		5/4/2006																		
299-W15-48	99999	99999	B1K938		4/25/2006																		
299-W15-48	99999	99999	B1K940		4/19/2006																		
			B1HKY0	EB	4/19/2006	1	µg/L	U						3.7	µg/L	U					1	µg/L	U
	99999	99999	B1HK26	FB	3/20/2006	58	µg/kg	U		30	µg/kg	U									80	µg/kg	U
	99999	99999	B1HK36	FB	3/27/2006	58	µg/kg	U		30	µg/kg	U									80	µg/kg	U
	99999	99999	B1HK51	FB	4/4/2006	58	µg/kg	U		30	µg/kg	U									80	µg/kg	U
	99999	99999	B1HK56	FB	4/18/2006	250	µg/kg	U													250	µg/kg	U
	99999	99999	B1HK61	FB	4/24/2006	250	µg/kg	U													250	µg/kg	U
	99999	99999	B1HK66	FB	4/27/2006	130	µg/kg	U													130	µg/kg	U
	99999	99999	B1HK76	FB	5/3/2006	320	µg/kg	U													320	µg/kg	U
	99999	99999	B1HKB2	FB	3/13/2006	58	µg/kg	U		30	µg/kg	U									80	µg/kg	U
	99999	99999	B1HL21	FB	4/6/2006	58	µg/kg	U		30	µg/kg	U									80	µg/kg	U
	99999	99999	B1HL25	FB	5/3/2006	58	µg/kg	U		30	µg/kg	U									80	µg/kg	U
			B1HKY9	TB	4/19/2006	1	µg/L	U													1	µg/L	U
			B1HL00	TB	4/25/2006	1	µg/L	U													1	µg/L	U
			B1HL01	TB	4/27/2006	1	µg/L	U													1	µg/L	U
			B1HL03	TB	5/3/2006	1	µg/L	U													1	µg/L	U
			B1HL07	TB	3/22/2006	0.55	µg/L	U		0.22	µg/L	U									0.44	µg/L	U
			B1HL10	TB	4/6/2006	0.55	µg/L	U		0.22	µg/L	U									0.44	µg/L	U
					TQL (µg/kg)					N/A													5

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,2-Dichloroethene (Total) (540-59-0)				1,2-Dichloropropane (78-87-5)				1-Butanol (71-36-3)				2-Butanone (78-93-3)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB1		3/13/2006	1.7	µg/kg	U		0.41	µg/kg	U		9.1	µg/kg	U		0.8	µg/kg	U	
299-W15-48	52.5	54.5	B1K8W8	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8W9	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X0	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X1	R	3/14/2006																
299-W15-48	52.5	54.5	B1K945		3/14/2006																
299-W15-48	52.5	54.5	B1K946		3/14/2006																
299-W15-48	52.5	54.5	B1K947		3/14/2006																
299-W15-48	67	69	B1HK24		3/20/2006	130	µg/kg	U		37	µg/kg	U		4000	µg/kg	J		1300	µg/kg		
299-W15-48	67	69	B1HK25		3/20/2006	0.6	µg/kg	U		0.38	µg/kg	U		75	µg/kg	J		180	µg/kg		
299-W15-48	70	72	B1HK29		3/22/2006	120	µg/kg	U		35	µg/kg	U		4000	µg/kg	J		1400	µg/kg		
299-W15-48	70	72	B1HK30		3/22/2006	0.62	µg/kg	U		0.4	µg/kg	U		34	µg/kg	U		390	µg/kg	E	
299-W15-48	70	72	B1K8X2	R	3/23/2006																
299-W15-48	70	72	B1K8X3	R	3/23/2006																
299-W15-48	70	72	B1K8X4	R	3/23/2006																
299-W15-48	70	72	B1K8X5	R	3/23/2006																
299-W15-48	70	72	B1K943		3/23/2006																
299-W15-48	70	72	B1K944		3/23/2006																
299-W15-48	73	75	B1HK34		3/27/2006	140	µg/kg	U		41	µg/kg	U		5700	µg/kg	J		1400	µg/kg		
299-W15-48	73	75	B1HK35		3/27/2006	0.78	µg/kg	U		0.5	µg/kg	U		140	µg/kg			86	µg/kg		
299-W15-48	100	102	B1HK49		4/4/2006	130	µg/kg	U		37	µg/kg	U		4200	µg/kg			130	µg/kg	J	
299-W15-48	100	102	B1HK50		4/4/2006	0.76	µg/kg	U		0.49	µg/kg	U		3800	µg/kg	E		120	µg/kg		
299-W15-48	100	102	B1K8X6	R	4/4/2006																
299-W15-48	100	102	B1K8X7	R	4/4/2006																
299-W15-48	100	102	B1K8X8	R	4/4/2006																
299-W15-48	100	102	B1K8X9	R	4/4/2006																
299-W15-48	103	105	B1HK44	R	4/6/2006	130	µg/kg	U		37	µg/kg	U		4400	µg/kg	J		120	µg/kg	U	
299-W15-48	103	105	B1HK45	R	4/6/2006	0.68	µg/kg	U		0.44	µg/kg	U		2500	µg/kg	E		68	µg/kg		
299-W15-48	103	105	B1HL19	R	4/6/2006	130	µg/kg	U		36	µg/kg	U		5000	µg/kg	J		120	µg/kg	U	
299-W15-48	103	105	B1HL20	R	4/6/2006	0.67	µg/kg	U		0.43	µg/kg	U		3200	µg/kg	E		110	µg/kg		
299-W15-48	118.5	120.5	B1HK40		4/13/2006	0.66	µg/kg	U		0.42	µg/kg	U		36	µg/kg	U		75	µg/kg		
299-W15-48	118.5	120.5	B1K8Y0	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y1	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y2	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y3	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y4	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y5	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y6	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y7	R	4/17/2006																
299-W15-48	118.5	120.5	B1K941		4/17/2006																

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,2-Dichloroethene (Total) (540-59-0)				1,2-Dichloropropane (78-87-5)				1-Butanol (71-36-3)				2-Butanone (78-93-3)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	118.5	120.5	B1K942		4/17/2006																
299-W15-48	122.5	124.5	B1HK54		4/18/2006	12	µg/kg	U		12	µg/kg	U		240	µg/kg	U		1700	µg/kg		
299-W15-48	122.5	124.5	B1HK55		4/18/2006	1.4	µg/kg	U		1.4	µg/kg	U		27	µg/kg	U		240	µg/kg	E	
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1K8Y8	R	4/19/2006																
299-W15-48	122.5	124.5	B1K8Y9	R	4/19/2006																
299-W15-48	122.5	124.5	B1K900	R	4/19/2006																
299-W15-48	122.5	124.5	B1K901	R	4/19/2006																
299-W15-48	128.5	130.5	B1HK59		4/24/2006	12	µg/kg	U		12	µg/kg	U		240	µg/kg	U		1500	µg/kg		
299-W15-48	128.5	130.5	B1HK60		4/24/2006	1.3	µg/kg	U		1.3	µg/kg	U		26	µg/kg	U		39	µg/kg		
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1K902	R	4/25/2006																
299-W15-48	128.5	130.5	B1K903	R	4/25/2006																
299-W15-48	128.5	130.5	B1K904	R	4/25/2006																
299-W15-48	128.5	130.5	B1K905	R	4/25/2006																
299-W15-48	128.5	130.5	B1K937		4/25/2006																
299-W15-48	128.5	130.5	B1K939		4/25/2006																
299-W15-48	131.5	133	B1HK64		4/27/2006	120	µg/kg	U		120	µg/kg	U		2300	µg/kg	U		1300	µg/kg		
299-W15-48	131.5	133	B1HK65		4/27/2006	1.2	µg/kg	U		1.2	µg/kg	U		25	µg/kg	U		18	µg/kg		
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	131.5	133	B1K906	R	4/27/2006																
299-W15-48	131.5	133	B1K907	R	4/27/2006																
299-W15-48	131.5	133	B1K908	R	4/27/2006																
299-W15-48	131.5	133	B1K909	R	4/27/2006																
299-W15-48	131.5	133	B1K934		4/27/2006																
299-W15-48	131.5	133	B1K935		4/27/2006																
299-W15-48	131.5	133	B1K936		4/27/2006																
299-W15-48	135	140	B1HK74	S	5/3/2006	190	µg/kg	U		190	µg/kg	U		9300	µg/kg	U		760	µg/kg		
299-W15-48	135	140	B1HK75	S	5/3/2006	3	µg/kg	U		3	µg/kg	U		170	µg/kg	U		7	µg/kg	U	
299-W15-48	135	140	B1HL24	S	5/3/2006	0.64	µg/kg	U		0.41	µg/kg	U		35	µg/kg	U		2.1	µg/kg	J	
299-W15-48	139.5	140	B1J7W6		5/8/2006																
299-W15-48	135.3	140	B1K910	R	5/4/2006																
299-W15-48	135.3	140	B1K911	R	5/4/2006																
299-W15-48	135.3	140	B1K912	R	5/4/2006																
299-W15-48	135.3	140	B1K913	R	5/4/2006																
299-W15-48	139.5	140	B1K914	R	5/8/2006																
299-W15-48	139.5	140	B1K915	R	5/8/2006																
299-W15-48	139.5	140	B1K916	R	5/8/2006																
299-W15-48	139.5	140	B1K917	R	5/8/2006																
299-W15-48	139.5	140	B1K931		5/8/2006																

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Butanone (78-93-3)				2-Butanone (78-93-3)				2-Butanone (78-93-3)				2-Hexanone (591-78-6)			
						B&K, field				MIRAN, field				TO-15				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB1		3/13/2006													1.1	µg/kg	U	
299-W15-48	52.5	54.5	B1K8W8	R	3/14/2006	3.73	PPM(V/V)														
299-W15-48	52.5	54.5	B1K8W9	R	3/14/2006	3.31	PPM(V/V)														
299-W15-48	52.5	54.5	B1K8X0	R	3/14/2006	3.65	PPM(V/V)														
299-W15-48	52.5	54.5	B1K8X1	R	3/14/2006	3.32	PPM(V/V)														
299-W15-48	52.5	54.5	B1K945		3/14/2006																
299-W15-48	52.5	54.5	B1K946		3/14/2006																
299-W15-48	52.5	54.5	B1K947		3/14/2006																
299-W15-48	67	69	B1HK24		3/20/2006													130	µg/kg	U	
299-W15-48	67	69	B1HK25		3/20/2006													1.2	µg/kg	U	
299-W15-48	70	72	B1HK29		3/22/2006													120	µg/kg	U	
299-W15-48	70	72	B1HK30		3/22/2006													2.3	µg/kg	J	
299-W15-48	70	72	B1K8X2	R	3/23/2006	1	PPM(V/V)	U													
299-W15-48	70	72	B1K8X3	R	3/23/2006	1.13	PPM(V/V)														
299-W15-48	70	72	B1K8X4	R	3/23/2006	1.14	PPM(V/V)														
299-W15-48	70	72	B1K8X5	R	3/23/2006	1.19	PPM(V/V)														
299-W15-48	70	72	B1K943		3/23/2006																
299-W15-48	70	72	B1K944		3/23/2006																
299-W15-48	73	75	B1HK34		3/27/2006													150	µg/kg	U	
299-W15-48	73	75	B1HK35		3/27/2006													2.4	µg/kg	J	
299-W15-48	100	102	B1HK49		4/4/2006													130	µg/kg	U	
299-W15-48	100	102	B1HK50		4/4/2006													1.6	µg/kg	U	
299-W15-48	100	102	B1K8X6	R	4/4/2006	6.02	PPM(V/V)														
299-W15-48	100	102	B1K8X7	R	4/4/2006	6.2	PPM(V/V)														
299-W15-48	100	102	B1K8X8	R	4/4/2006	6.05	PPM(V/V)														
299-W15-48	100	102	B1K8X9	R	4/4/2006	5.97	PPM(V/V)														
299-W15-48	103	105	B1HK44	R	4/6/2006													130	µg/kg	U	
299-W15-48	103	105	B1HK45	R	4/6/2006													1.4	µg/kg	U	
299-W15-48	103	105	B1HL19	R	4/6/2006													130	µg/kg	U	
299-W15-48	103	105	B1HL20	R	4/6/2006													1.4	µg/kg	U	
299-W15-48	118.5	120.5	B1HK40		4/13/2006																
299-W15-48	118.5	120.5	B1K8Y0	R	4/13/2006	8.56	PPM(V/V)														
299-W15-48	118.5	120.5	B1K8Y1	R	4/13/2006	8.42	PPM(V/V)														
299-W15-48	118.5	120.5	B1K8Y2	R	4/13/2006	8.61	PPM(V/V)														
299-W15-48	118.5	120.5	B1K8Y3	R	4/13/2006	8.58	PPM(V/V)														
299-W15-48	118.5	120.5	B1K8Y4	R	4/17/2006	2.14	PPM(V/V)														
299-W15-48	118.5	120.5	B1K8Y5	R	4/17/2006	2.14	PPM(V/V)														
299-W15-48	118.5	120.5	B1K8Y6	R	4/17/2006	2.17	PPM(V/V)														
299-W15-48	118.5	120.5	B1K8Y7	R	4/17/2006	2.18	PPM(V/V)														
299-W15-48	118.5	120.5	B1K941		4/17/2006																

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Pentanone (107-87-9)				2-Pentanone, 4-Methyl (108-10-1)				Acetic acid, methyl ester (79-20-9)				Acetone (67-64-1)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB1		3/13/2006					0.85	µg/kg	U						5.2	µg/kg	U	
299-W15-48	52.5	54.5	B1K8W8	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8W9	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X0	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X1	R	3/14/2006																
299-W15-48	52.5	54.5	B1K945		3/14/2006																
299-W15-48	52.5	54.5	B1K946		3/14/2006																
299-W15-48	52.5	54.5	B1K947		3/14/2006																
299-W15-48	67	69	B1HK24		3/20/2006					55	µg/kg	U						1600	µg/kg		
299-W15-48	67	69	B1HK25		3/20/2006					0.89	µg/kg	U						18	µg/kg	J	
299-W15-48	70	72	B1HK29		3/22/2006					52	µg/kg	U						1500	µg/kg		
299-W15-48	70	72	B1HK30		3/22/2006					0.92	µg/kg	U						41	µg/kg		
299-W15-48	70	72	B1K8X2	R	3/23/2006																
299-W15-48	70	72	B1K8X3	R	3/23/2006																
299-W15-48	70	72	B1K8X4	R	3/23/2006																
299-W15-48	70	72	B1K8X5	R	3/23/2006																
299-W15-48	70	72	B1K943		3/23/2006																
299-W15-48	70	72	B1K944		3/23/2006																
299-W15-48	73	75	B1HK34		3/27/2006					61	µg/kg	U						1500	µg/kg		
299-W15-48	73	75	B1HK35		3/27/2006					1.2	µg/kg	U						9.1	µg/kg	J	
299-W15-48	100	102	B1HK49		4/4/2006					54	µg/kg	U						300	µg/kg	JB	
299-W15-48	100	102	B1HK50		4/4/2006					1.1	µg/kg	U						31	µg/kg	B	
299-W15-48	100	102	B1K8X6	R	4/4/2006																
299-W15-48	100	102	B1K8X7	R	4/4/2006																
299-W15-48	100	102	B1K8X8	R	4/4/2006																
299-W15-48	100	102	B1K8X9	R	4/4/2006																
299-W15-48	103	105	B1HK44	R	4/6/2006					55	µg/kg	U						54	µg/kg	U	
299-W15-48	103	105	B1HK45	R	4/6/2006					1	µg/kg	U						21	µg/kg	JB	
299-W15-48	103	105	B1HL19	R	4/6/2006					54	µg/kg	U						53	µg/kg	U	
299-W15-48	103	105	B1HL20	R	4/6/2006					0.99	µg/kg	U						30	µg/kg	B	
299-W15-48	118.5	120.5	B1HK40		4/13/2006					0.97	µg/kg	U						27	µg/kg		
299-W15-48	118.5	120.5	B1K8Y0	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y1	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y2	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y3	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y4	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y5	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y6	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y7	R	4/17/2006																
299-W15-48	118.5	120.5	B1K941		4/17/2006																

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Pentanone (107-87-9)				2-Pentanone, 4-Methyl (108-10-1)				Acetic acid, methyl ester (79-20-9)				Acetone (67-64-1)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	118.5	120.5	B1K942		4/17/2006																
299-W15-48	122.5	124.5	B1HK54		4/18/2006					12	µg/kg	U		12000	µg/kg	J		360	µg/kg		
299-W15-48	122.5	124.5	B1HK55		4/18/2006					1.4	µg/kg	U						130	µg/kg		
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1K8Y8	R	4/19/2006																
299-W15-48	122.5	124.5	B1K8Y9	R	4/19/2006																
299-W15-48	122.5	124.5	B1K900	R	4/19/2006																
299-W15-48	122.5	124.5	B1K901	R	4/19/2006																
299-W15-48	128.5	130.5	B1HK59		4/24/2006					12	µg/kg	U						1500	µg/kg		
299-W15-48	128.5	130.5	B1HK60		4/24/2006					1.3	µg/kg	U						67	µg/kg		
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1K902	R	4/25/2006																
299-W15-48	128.5	130.5	B1K903	R	4/25/2006																
299-W15-48	128.5	130.5	B1K904	R	4/25/2006																
299-W15-48	128.5	130.5	B1K905	R	4/25/2006																
299-W15-48	128.5	130.5	B1K937		4/25/2006																
299-W15-48	128.5	130.5	B1K939		4/25/2006																
299-W15-48	131.5	133	B1HK64		4/27/2006					120	µg/kg	U						2900	µg/kg		
299-W15-48	131.5	133	B1HK65		4/27/2006					1.2	µg/kg	U						37	µg/kg		
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	131.5	133	B1K906	R	4/27/2006																
299-W15-48	131.5	133	B1K907	R	4/27/2006																
299-W15-48	131.5	133	B1K908	R	4/27/2006																
299-W15-48	131.5	133	B1K909	R	4/27/2006																
299-W15-48	131.5	133	B1K934		4/27/2006																
299-W15-48	131.5	133	B1K935		4/27/2006																
299-W15-48	131.5	133	B1K936		4/27/2006																
299-W15-48	135	140	B1HK74	S	5/3/2006					370	µg/kg	U		200	µg/kg	NJ		900	µg/kg		
299-W15-48	135	140	B1HK75	S	5/3/2006					7	µg/kg	U						19	µg/kg		
299-W15-48	135	140	B1HL24	S	5/3/2006					0.95	µg/kg	U						6.1	µg/kg	J	
299-W15-48	139.5	140	B1J7W6		5/8/2006																
299-W15-48	135.3	140	B1K910	R	5/4/2006																
299-W15-48	135.3	140	B1K911	R	5/4/2006																
299-W15-48	135.3	140	B1K912	R	5/4/2006																
299-W15-48	135.3	140	B1K913	R	5/4/2006																
299-W15-48	139.5	140	B1K914	R	5/8/2006																
299-W15-48	139.5	140	B1K915	R	5/8/2006																
299-W15-48	139.5	140	B1K916	R	5/8/2006																
299-W15-48	139.5	140	B1K917	R	5/8/2006																
299-W15-48	139.5	140	B1K931		5/8/2006																

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Pentanone (107-87-9)				2-Pentanone, 4-Methyl (108-10-1)				Acetic acid, methyl ester (79-20-9)				Acetone (67-64-1)				
						8260				8260				8260				8260				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
299-W15-48	135.3	140	B1K933		5/4/2006																	
299-W15-48	139.5	145.5	B1J7Y1		5/9/2006																	
299-W15-48	139.5	145.5	B1J7Y7		5/11/2006																	
299-W15-48	139.5	145.5	B1K918	R	5/9/2006																	
299-W15-48	139.5	145.5	B1K919	R	5/9/2006																	
299-W15-48	139.5	145.5	B1K920	R	5/9/2006																	
299-W15-48	139.5	145.5	B1K921	R	5/9/2006																	
299-W15-48	139.5	145.5	B1K922	R	5/11/2006																	
299-W15-48	139.5	145.5	B1K923	R	5/11/2006																	
299-W15-48	139.5	145.5	B1K924	R	5/11/2006																	
299-W15-48	139.5	145.5	B1K925	R	5/11/2006																	
299-W15-48	139.5	145.5	B1K926		5/11/2006																	
299-W15-48	139.5	145.5	B1K928		5/9/2006																	
299-W15-48	139.5	145.5	B1K929		5/9/2006																	
299-W15-48	99999	99999	B1K927		5/11/2006																	
299-W15-48	99999	99999	B1K930		5/8/2006																	
299-W15-48	99999	99999	B1K932		5/4/2006																	
299-W15-48	99999	99999	B1K938		4/25/2006																	
299-W15-48	99999	99999	B1K940		4/19/2006																	
			B1HKY0	EB	4/19/2006	1	µg/L	U		1	µg/L	U					1	µg/L	U			
	99999	99999	B1HK26	FB	3/20/2006					49	µg/kg	U					1300	µg/kg				
	99999	99999	B1HK36	FB	3/27/2006					49	µg/kg	U					1400	µg/kg				
	99999	99999	B1HK51	FB	4/4/2006					49	µg/kg	U					1000	µg/kg				
	99999	99999	B1HK56	FB	4/18/2006					250	µg/kg	U					3700	µg/kg				
	99999	99999	B1HK61	FB	4/24/2006					250	µg/kg	U					3300	µg/kg				
	99999	99999	B1HK66	FB	4/27/2006					130	µg/kg	U					1700	µg/kg				
	99999	99999	B1HK76	FB	5/3/2006					640	µg/kg	U		300	µg/kg	NJ		1600	µg/kg			
	99999	99999	B1HKB2	FB	3/13/2006					49	µg/kg	U					1700	µg/kg			B	
	99999	99999	B1HL21	FB	4/6/2006					49	µg/kg	U					1400	µg/kg				
	99999	99999	B1HL25	FB	5/3/2006					49	µg/kg	U					1200	µg/kg				
			B1HKY9	TB	4/19/2006					1	µg/L	U					16	µg/L				
			B1HL00	TB	4/25/2006					1	µg/L	U					1	µg/L	U			
			B1HL01	TB	4/27/2006					1	µg/L	U					1	µg/L	U			
			B1HL03	TB	5/3/2006					1	µg/L	U					1	µg/L	U			
			B1HL07	TB	3/22/2006					1.6	µg/L	U					25	µg/L				
			B1HL10	TB	4/6/2006					1.6	µg/L	U					16	µg/L	JB			
					TQL (µg/kg)					N/A												20

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Acetone (67-64-1)				Acetonitrile (75-05-8)				Benzene (71-43-2)				Bromodichloromethane (75-27-4)			
						TO-15				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB1		3/13/2006					9	µg/kg	U		0.44	µg/kg	U		0.32	µg/kg	U	
299-W15-48	52.5	54.5	B1K8W8	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8W9	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X0	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X1	R	3/14/2006																
299-W15-48	52.5	54.5	B1K945		3/14/2006																
299-W15-48	52.5	54.5	B1K946		3/14/2006																
299-W15-48	52.5	54.5	B1K947		3/14/2006																
299-W15-48	67	69	B1HK24		3/20/2006					960	µg/kg	J		55	µg/kg	U		33	µg/kg	U	
299-W15-48	67	69	B1HK25		3/20/2006					5.2	µg/kg	U		0.72	µg/kg	J		0.14	µg/kg	U	
299-W15-48	70	72	B1HK29		3/22/2006					1300	µg/kg	J		52	µg/kg	U		31	µg/kg	U	
299-W15-48	70	72	B1HK30		3/22/2006					5.4	µg/kg	U		3.7	µg/kg	J		0.14	µg/kg	U	
299-W15-48	70	72	B1K8X2	R	3/23/2006																
299-W15-48	70	72	B1K8X3	R	3/23/2006																
299-W15-48	70	72	B1K8X4	R	3/23/2006																
299-W15-48	70	72	B1K8X5	R	3/23/2006																
299-W15-48	70	72	B1K943		3/23/2006																
299-W15-48	70	72	B1K944		3/23/2006																
299-W15-48	73	75	B1HK34		3/27/2006					550	µg/kg	U		61	µg/kg	U		37	µg/kg	U	
299-W15-48	73	75	B1HK35		3/27/2006					6.8	µg/kg	U		0.29	µg/kg	U		0.18	µg/kg	U	
299-W15-48	100	102	B1HK49		4/4/2006					490	µg/kg	U		54	µg/kg	U		32	µg/kg	U	
299-W15-48	100	102	B1HK50		4/4/2006					15	µg/kg	J		0.29	µg/kg	U		0.17	µg/kg	U	
299-W15-48	100	102	B1K8X6	R	4/4/2006																
299-W15-48	100	102	B1K8X7	R	4/4/2006																
299-W15-48	100	102	B1K8X8	R	4/4/2006																
299-W15-48	100	102	B1K8X9	R	4/4/2006																
299-W15-48	103	105	B1HK44	R	4/6/2006					500	µg/kg	U		55	µg/kg	U		33	µg/kg	U	
299-W15-48	103	105	B1HK45	R	4/6/2006					13	µg/kg	J		1	µg/kg	J		0.16	µg/kg	U	
299-W15-48	103	105	B1HL19	R	4/6/2006					480	µg/kg	U		54	µg/kg	U		32	µg/kg	U	
299-W15-48	103	105	B1HL20	R	4/6/2006					14	µg/kg	J		0.87	µg/kg	J		0.15	µg/kg	U	
299-W15-48	118.5	120.5	B1HK40		4/13/2006					5.7	µg/kg	U		1.4	µg/kg	J		0.15	µg/kg	U	
299-W15-48	118.5	120.5	B1K8Y0	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y1	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y2	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y3	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y4	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y5	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y6	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y7	R	4/17/2006																
299-W15-48	118.5	120.5	B1K941		4/17/2006																

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Acetone (67-64-1)				Acetonitrile (75-05-8)				Benzene (71-43-2)				Bromodichloromethane (75-27-4)			
						TO-15				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	118.5	120.5	B1K942		4/17/2006																
299-W15-48	122.5	124.5	B1HK54		4/18/2006				24	µg/kg	U		12	µg/kg	U		12	µg/kg	U		
299-W15-48	122.5	124.5	B1HK55		4/18/2006				2.7	µg/kg	U		1.4	µg/kg	U		1.4	µg/kg	U		
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1K8Y8	R	4/19/2006																
299-W15-48	122.5	124.5	B1K8Y9	R	4/19/2006																
299-W15-48	122.5	124.5	B1K900	R	4/19/2006																
299-W15-48	122.5	124.5	B1K901	R	4/19/2006																
299-W15-48	128.5	130.5	B1HK59		4/24/2006				24	µg/kg	U		12	µg/kg	U		12	µg/kg	U		
299-W15-48	128.5	130.5	B1HK60		4/24/2006				2.6	µg/kg	U		1.3	µg/kg	U		1.3	µg/kg	U		
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1K902	R	4/25/2006																
299-W15-48	128.5	130.5	B1K903	R	4/25/2006																
299-W15-48	128.5	130.5	B1K904	R	4/25/2006																
299-W15-48	128.5	130.5	B1K905	R	4/25/2006																
299-W15-48	128.5	130.5	B1K937		4/25/2006																
299-W15-48	128.5	130.5	B1K939		4/25/2006																
299-W15-48	131.5	133	B1HK64		4/27/2006				230	µg/kg	U		120	µg/kg	U		120	µg/kg	U		
299-W15-48	131.5	133	B1HK65		4/27/2006				64	µg/kg			1.2	µg/kg	U		1.2	µg/kg	U		
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	131.5	133	B1K906	R	4/27/2006																
299-W15-48	131.5	133	B1K907	R	4/27/2006																
299-W15-48	131.5	133	B1K908	R	4/27/2006																
299-W15-48	131.5	133	B1K909	R	4/27/2006																
299-W15-48	131.5	133	B1K934		4/27/2006																
299-W15-48	131.5	133	B1K935		4/27/2006																
299-W15-48	131.5	133	B1K936		4/27/2006																
299-W15-48	135	140	B1HK74	S	5/3/2006				750	µg/kg	U		190	µg/kg	U		190	µg/kg	U		
299-W15-48	135	140	B1HK75	S	5/3/2006				13	µg/kg	U		3	µg/kg	U		3	µg/kg	U		
299-W15-48	135	140	B1HL24	S	5/3/2006				6.6	µg/kg	J		0.24	µg/kg	U		0.15	µg/kg	U		
299-W15-48	139.5	140	B1J7W6		5/8/2006	0.4	PPM(V/V)	U													
299-W15-48	135.3	140	B1K910	R	5/4/2006																
299-W15-48	135.3	140	B1K911	R	5/4/2006																
299-W15-48	135.3	140	B1K912	R	5/4/2006																
299-W15-48	135.3	140	B1K913	R	5/4/2006																
299-W15-48	139.5	140	B1K914	R	5/8/2006																
299-W15-48	139.5	140	B1K915	R	5/8/2006																
299-W15-48	139.5	140	B1K916	R	5/8/2006																
299-W15-48	139.5	140	B1K917	R	5/8/2006																
299-W15-48	139.5	140	B1K931		5/8/2006																

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Bromoform (75-25-2)				Bromomethane (74-83-9)				Butanoic Acid Methyl Ester (623-42-7)				Carbon Dioxide (124-38-9)			
						8260				8260				8260				MIRAN, field			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB1		3/13/2006	0.65	µg/kg	U		0.76	µg/kg	U									
299-W15-48	52.5	54.5	B1K8W8	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8W9	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X0	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X1	R	3/14/2006																
299-W15-48	52.5	54.5	B1K945		3/14/2006													3960	PPM(V/V)		
299-W15-48	52.5	54.5	B1K946		3/14/2006													1880	PPM(V/V)		
299-W15-48	52.5	54.5	B1K947		3/14/2006													2610	PPM(V/V)		
299-W15-48	67	69	B1HK24		3/20/2006	54	µg/kg	U		69	µg/kg	U									
299-W15-48	67	69	B1HK25		3/20/2006	0.2	µg/kg	U		0.43	µg/kg	U									
299-W15-48	70	72	B1HK29		3/22/2006	51	µg/kg	U		65	µg/kg	U									
299-W15-48	70	72	B1HK30		3/22/2006	0.2	µg/kg	U		0.45	µg/kg	U									
299-W15-48	70	72	B1K8X2	R	3/23/2006																
299-W15-48	70	72	B1K8X3	R	3/23/2006																
299-W15-48	70	72	B1K8X4	R	3/23/2006																
299-W15-48	70	72	B1K8X5	R	3/23/2006																
299-W15-48	70	72	B1K943		3/23/2006													121	PPM(V/V)		
299-W15-48	70	72	B1K944		3/23/2006													151	PPM(V/V)		
299-W15-48	73	75	B1HK34		3/27/2006	60	µg/kg	U		77	µg/kg	U									
299-W15-48	73	75	B1HK35		3/27/2006	0.26	µg/kg	U		0.56	µg/kg	U									
299-W15-48	100	102	B1HK49		4/4/2006	53	µg/kg	U		68	µg/kg	U									
299-W15-48	100	102	B1HK50		4/4/2006	0.25	µg/kg	U		0.55	µg/kg	U									
299-W15-48	100	102	B1K8X6	R	4/4/2006																
299-W15-48	100	102	B1K8X7	R	4/4/2006																
299-W15-48	100	102	B1K8X8	R	4/4/2006																
299-W15-48	100	102	B1K8X9	R	4/4/2006																
299-W15-48	103	105	B1HK44	R	4/6/2006	54	µg/kg	U		69	µg/kg	U									
299-W15-48	103	105	B1HK45	R	4/6/2006	0.22	µg/kg	U		0.49	µg/kg	U									
299-W15-48	103	105	B1HL19	R	4/6/2006	53	µg/kg	U		68	µg/kg	U									
299-W15-48	103	105	B1HL20	R	4/6/2006	0.22	µg/kg	U		0.48	µg/kg	U									
299-W15-48	118.5	120.5	B1HK40		4/13/2006	0.22	µg/kg	U		0.48	µg/kg	U									
299-W15-48	118.5	120.5	B1K8Y0	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y1	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y2	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y3	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y4	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y5	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y6	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y7	R	4/17/2006																
299-W15-48	118.5	120.5	B1K941		4/17/2006																

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Bromoform (75-25-2)				Bromomethane (74-83-9)				Butanoic Acid Methyl Ester (623-42-7)				Carbon Dioxide (124-38-9)				
						8260				8260				8260				MIRAN, field				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
299-W15-48	135.3	140	B1K933		5/4/2006													2800	PPM(V/V)	J		
299-W15-48	139.5	145.5	B1J7Y1		5/9/2006																	
299-W15-48	139.5	145.5	B1J7Y7		5/11/2006																	
299-W15-48	139.5	145.5	B1K918	R	5/9/2006																	
299-W15-48	139.5	145.5	B1K919	R	5/9/2006																	
299-W15-48	139.5	145.5	B1K920	R	5/9/2006																	
299-W15-48	139.5	145.5	B1K921	R	5/9/2006																	
299-W15-48	139.5	145.5	B1K922	R	5/11/2006																	
299-W15-48	139.5	145.5	B1K923	R	5/11/2006																	
299-W15-48	139.5	145.5	B1K924	R	5/11/2006																	
299-W15-48	139.5	145.5	B1K925	R	5/11/2006																	
299-W15-48	139.5	145.5	B1K926		5/11/2006													3424	PPM(V/V)	J		
299-W15-48	139.5	145.5	B1K928		5/9/2006													368	PPM(V/V)			
299-W15-48	139.5	145.5	B1K929		5/9/2006													360	PPM(V/V)			
299-W15-48	99999	99999	B1K927		5/11/2006													4057	PPM(V/V)	J		
299-W15-48	99999	99999	B1K930		5/8/2006													3790	PPM(V/V)	J		
299-W15-48	99999	99999	B1K932		5/4/2006													2530	PPM(V/V)	J		
299-W15-48	99999	99999	B1K938		4/25/2006													62900	PPM(V/V)			
299-W15-48	99999	99999	B1K940		4/19/2006													30100	PPM(V/V)			
			B1HKY0	EB	4/19/2006	1	µg/L	U		1	µg/L	U										
	99999	99999	B1HK26	FB	3/20/2006	48	µg/kg	U		62	µg/kg	U										
	99999	99999	B1HK36	FB	3/27/2006	48	µg/kg	U		62	µg/kg	U										
	99999	99999	B1HK51	FB	4/4/2006	48	µg/kg	U		62	µg/kg	U										
	99999	99999	B1HK56	FB	4/18/2006	250	µg/kg	U		250	µg/kg	U										
	99999	99999	B1HK61	FB	4/24/2006	250	µg/kg	U		250	µg/kg	U										
	99999	99999	B1HK66	FB	4/27/2006	130	µg/kg	U		130	µg/kg	U										
	99999	99999	B1HK76	FB	5/3/2006	320	µg/kg	U		640	µg/kg	U										
	99999	99999	B1HKB2	FB	3/13/2006	48	µg/kg	U		62	µg/kg	U										
	99999	99999	B1HL21	FB	4/6/2006	48	µg/kg	U		62	µg/kg	U										
	99999	99999	B1HL25	FB	5/3/2006	48	µg/kg	U		62	µg/kg	U										
			B1HKY9	TB	4/19/2006	1	µg/L	U		1	µg/L	U										
			B1HL00	TB	4/25/2006	1	µg/L	U		1	µg/L	U										
			B1HL01	TB	4/27/2006	1	µg/L	U		1	µg/L	U										
			B1HL03	TB	5/3/2006	1	µg/L	U		1	µg/L	U										
			B1HL07	TB	3/22/2006	0.24	µg/L	U		0.31	µg/L	U										
			B1HL10	TB	4/6/2006	0.24	µg/L	U		0.31	µg/L	U										
			TQL (µg/kg)				N/A				N/A								N/A			0.001

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon disulfide (75-15-0)				Carbon tetrachloride (56-23-5)				Carbon tetrachloride (56-23-5)				Carbon tetrachloride (56-23-5)			
						8260				8260				B&K, field				MIRAN, field			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB1		3/13/2006	0.57	µg/kg	U		0.26	µg/kg	U									
299-W15-48	52.5	54.5	B1K8W8	R	3/14/2006								6.26	PPM(V/V)							
299-W15-48	52.5	54.5	B1K8W9	R	3/14/2006								5.9	PPM(V/V)							
299-W15-48	52.5	54.5	B1K8X0	R	3/14/2006								6.19	PPM(V/V)							
299-W15-48	52.5	54.5	B1K8X1	R	3/14/2006								5.97	PPM(V/V)							
299-W15-48	52.5	54.5	B1K945		3/14/2006											49.5	PPM(V/V)	J			
299-W15-48	52.5	54.5	B1K946		3/14/2006											17.98	PPM(V/V)	J			
299-W15-48	52.5	54.5	B1K947		3/14/2006											25.7	PPM(V/V)				
299-W15-48	67	69	B1HK24		3/20/2006	74	µg/kg	U		2600	µg/kg										
299-W15-48	67	69	B1HK25		3/20/2006	0.27	µg/kg	U		270	µg/kg	E									
299-W15-48	70	72	B1HK29		3/22/2006	69	µg/kg	U		520	µg/kg										
299-W15-48	70	72	B1HK30		3/22/2006	0.28	µg/kg	U		35	µg/kg										
299-W15-48	70	72	B1K8X2	R	3/23/2006								1.61	PPM(V/V)							
299-W15-48	70	72	B1K8X3	R	3/23/2006								1.55	PPM(V/V)							
299-W15-48	70	72	B1K8X4	R	3/23/2006								1.54	PPM(V/V)							
299-W15-48	70	72	B1K8X5	R	3/23/2006								1.56	PPM(V/V)							
299-W15-48	70	72	B1K943		3/23/2006											1.64	PPM(V/V)				
299-W15-48	70	72	B1K944		3/23/2006											2.2	PPM(V/V)				
299-W15-48	73	75	B1HK34		3/27/2006	82	µg/kg	U		1500	µg/kg										
299-W15-48	73	75	B1HK35		3/27/2006	0.35	µg/kg	U		750	µg/kg	E									
299-W15-48	100	102	B1HK49		4/4/2006	72	µg/kg	U		58	µg/kg	U									
299-W15-48	100	102	B1HK50		4/4/2006	0.34	µg/kg	U		0.19	µg/kg	U									
299-W15-48	100	102	B1K8X6	R	4/4/2006								17.8	PPM(V/V)							
299-W15-48	100	102	B1K8X7	R	4/4/2006								17.7	PPM(V/V)							
299-W15-48	100	102	B1K8X8	R	4/4/2006								17.4	PPM(V/V)							
299-W15-48	100	102	B1K8X9	R	4/4/2006								17.3	PPM(V/V)							
299-W15-48	103	105	B1HK44	R	4/6/2006	74	µg/kg	U		59	µg/kg	U									
299-W15-48	103	105	B1HK45	R	4/6/2006	0.3	µg/kg	U		0.17	µg/kg	U									
299-W15-48	103	105	B1HL19	R	4/6/2006	72	µg/kg	U		57	µg/kg	U									
299-W15-48	103	105	B1HL20	R	4/6/2006	0.3	µg/kg	U		0.16	µg/kg	U									
299-W15-48	118.5	120.5	B1HK40		4/13/2006	0.29	µg/kg	U		0.83	µg/kg	J									
299-W15-48	118.5	120.5	B1K8Y0	R	4/13/2006								5.81	PPM(V/V)							
299-W15-48	118.5	120.5	B1K8Y1	R	4/13/2006								5.8	PPM(V/V)							
299-W15-48	118.5	120.5	B1K8Y2	R	4/13/2006								5.82	PPM(V/V)							
299-W15-48	118.5	120.5	B1K8Y3	R	4/13/2006								5.81	PPM(V/V)							
299-W15-48	118.5	120.5	B1K8Y4	R	4/17/2006								1.67	PPM(V/V)	U						
299-W15-48	118.5	120.5	B1K8Y5	R	4/17/2006								1.61	PPM(V/V)							
299-W15-48	118.5	120.5	B1K8Y6	R	4/17/2006								1.64	PPM(V/V)							
299-W15-48	118.5	120.5	B1K8Y7	R	4/17/2006								1.65	PPM(V/V)							
299-W15-48	118.5	120.5	B1K941		4/17/2006											1.83	PPM(V/V)				

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon disulfide (75-15-0)				Carbon tetrachloride (56-23-5)				Carbon tetrachloride (56-23-5)				Carbon tetrachloride (56-23-5)			
						8260				8260				B&K, field				MIRAN, field			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	118.5	120.5	B1K942		4/17/2006													2.2	PPM(V/V)		
299-W15-48	122.5	124.5	B1HK54		4/18/2006	12	µg/kg	U		470	µg/kg										
299-W15-48	122.5	124.5	B1HK55		4/18/2006	1.4	µg/kg	U		150	µg/kg	E									
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1K8Y8	R	4/19/2006									387	PPM(V/V)						
299-W15-48	122.5	124.5	B1K8Y9	R	4/19/2006									383	PPM(V/V)						
299-W15-48	122.5	124.5	B1K900	R	4/19/2006									394	PPM(V/V)						
299-W15-48	122.5	124.5	B1K901	R	4/19/2006									390	PPM(V/V)						
299-W15-48	128.5	130.5	B1HK59		4/24/2006	12	µg/kg	U		6300	µg/kg										
299-W15-48	128.5	130.5	B1HK60		4/24/2006	1.3	µg/kg	U		150	µg/kg	E									
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1K902	R	4/25/2006									377	PPM(V/V)						
299-W15-48	128.5	130.5	B1K903	R	4/25/2006									384	PPM(V/V)						
299-W15-48	128.5	130.5	B1K904	R	4/25/2006									403	PPM(V/V)						
299-W15-48	128.5	130.5	B1K905	R	4/25/2006									397	PPM(V/V)						
299-W15-48	128.5	130.5	B1K937		4/25/2006													432	PPM(V/V)		
299-W15-48	128.5	130.5	B1K939		4/25/2006													230.1	PPM(V/V)		J
299-W15-48	131.5	133	B1HK64		4/27/2006	120	µg/kg	U		1300	µg/kg										
299-W15-48	131.5	133	B1HK65		4/27/2006	1.2	µg/kg	U		4100	µg/kg										
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	131.5	133	B1K906	R	4/27/2006									61.9	PPM(V/V)						
299-W15-48	131.5	133	B1K907	R	4/27/2006									62.1	PPM(V/V)						
299-W15-48	131.5	133	B1K908	R	4/27/2006									63.6	PPM(V/V)						
299-W15-48	131.5	133	B1K909	R	4/27/2006									63.4	PPM(V/V)						
299-W15-48	131.5	133	B1K934		4/27/2006													17.2	PPM(V/V)		J
299-W15-48	131.5	133	B1K935		4/27/2006													27	PPM(V/V)		J
299-W15-48	131.5	133	B1K936		4/27/2006													55.7	PPM(V/V)		J
299-W15-48	135	140	B1HK74	S	5/3/2006	190	µg/kg	U		190	µg/kg	U									
299-W15-48	135	140	B1HK75	S	5/3/2006	3	µg/kg	U		3	µg/kg	U									
299-W15-48	135	140	B1HL24	S	5/3/2006	0.28	µg/kg	U		0.16	µg/kg	U									
299-W15-48	139.5	140	B1J7W6		5/8/2006																
299-W15-48	135.3	140	B1K910	R	5/4/2006									1.46	PPM(V/V)						
299-W15-48	135.3	140	B1K911	R	5/4/2006									2.28	PPM(V/V)						
299-W15-48	135.3	140	B1K912	R	5/4/2006									1.85	PPM(V/V)						
299-W15-48	135.3	140	B1K913	R	5/4/2006									1.76	PPM(V/V)						
299-W15-48	139.5	140	B1K914	R	5/8/2006									313	PPM(V/V)						
299-W15-48	139.5	140	B1K915	R	5/8/2006									100	PPM(V/V)	U					
299-W15-48	139.5	140	B1K916	R	5/8/2006									100	PPM(V/V)	U					
299-W15-48	139.5	140	B1K917	R	5/8/2006									317	PPM(V/V)						
299-W15-48	139.5	140	B1K931		5/8/2006													125.9	PPM(V/V)		J

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon disulfide (75-15-0)				Carbon tetrachloride (56-23-5)				Carbon tetrachloride (56-23-5)				Carbon tetrachloride (56-23-5)			
						8260				8260				B&K, field				MIRAN, field			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	135.3	140	B1K933		5/4/2006													67.31	PPM(V/V)	J	
299-W15-48	139.5	145.5	B1J7Y1		5/9/2006																
299-W15-48	139.5	145.5	B1J7Y7		5/11/2006																
299-W15-48	139.5	145.5	B1K918	R	5/9/2006								1	PPM(V/V)	U						
299-W15-48	139.5	145.5	B1K919	R	5/9/2006								1	PPM(V/V)	U						
299-W15-48	139.5	145.5	B1K920	R	5/9/2006								1	PPM(V/V)	U						
299-W15-48	139.5	145.5	B1K921	R	5/9/2006								1	PPM(V/V)	U						
299-W15-48	139.5	145.5	B1K922	R	5/11/2006								8.03	PPM(V/V)							
299-W15-48	139.5	145.5	B1K923	R	5/11/2006								7.87	PPM(V/V)							
299-W15-48	139.5	145.5	B1K924	R	5/11/2006								7.97	PPM(V/V)							
299-W15-48	139.5	145.5	B1K925	R	5/11/2006								7.91	PPM(V/V)							
299-W15-48	139.5	145.5	B1K926		5/11/2006												9.21	PPM(V/V)	J		
299-W15-48	139.5	145.5	B1K928		5/9/2006												0.05	PPM(V/V)	U		
299-W15-48	139.5	145.5	B1K929		5/9/2006												0.05	PPM(V/V)	U		
299-W15-48	99999	99999	B1K927		5/11/2006												9.66	PPM(V/V)	J		
299-W15-48	99999	99999	B1K930		5/8/2006												107.25	PPM(V/V)	J		
299-W15-48	99999	99999	B1K932		5/4/2006												56.74	PPM(V/V)	J		
299-W15-48	99999	99999	B1K938		4/25/2006												431	PPM(V/V)			
299-W15-48	99999	99999	B1K940		4/19/2006												112	PPM(V/V)	J		
			B1HKY0	EB	4/19/2006	1	µg/L	U		1	µg/L	U									
	99999	99999	B1HK26	FB	3/20/2006	65	µg/kg	U		52	µg/kg	U									
	99999	99999	B1HK36	FB	3/27/2006	65	µg/kg	U		52	µg/kg	U									
	99999	99999	B1HK51	FB	4/4/2006	65	µg/kg	U		52	µg/kg	U									
	99999	99999	B1HK56	FB	4/18/2006	250	µg/kg	U		250	µg/kg	U									
	99999	99999	B1HK61	FB	4/24/2006	250	µg/kg	U		250	µg/kg	U									
	99999	99999	B1HK66	FB	4/27/2006	130	µg/kg	U		130	µg/kg	U									
	99999	99999	B1HK76	FB	5/3/2006	320	µg/kg	U		320	µg/kg	U									
	99999	99999	B1HKB2	FB	3/13/2006	65	µg/kg	U		52	µg/kg	U									
	99999	99999	B1HL21	FB	4/6/2006	65	µg/kg	U		52	µg/kg	U									
	99999	99999	B1HL25	FB	5/3/2006	65	µg/kg	U		52	µg/kg	U									
			B1HKY9	TB	4/19/2006	1	µg/L	U		1	µg/L	U									
			B1HL00	TB	4/25/2006	1	µg/L	U		1	µg/L	U									
			B1HL01	TB	4/27/2006	1	µg/L	U		1	µg/L	U									
			B1HL03	TB	5/3/2006	1	µg/L	U		1	µg/L	U									
			B1HL07	TB	3/22/2006	0.39	µg/L	U		0.9	µg/L	U									
			B1HL10	TB	4/6/2006	0.39	µg/L	U		0.9	µg/L	U									
					TQL (µg/kg)		N/A			5				5				5			

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chlorobenzene (108-90-7)				Chloroethane (75-00-3)				Chloroform (67-66-3)			
						TO-15				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB1		3/13/2006					0.57	µg/kg	U		0.78	µg/kg	U		0.52	µg/kg	U	
299-W15-48	52.5	54.5	B1K8W8	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8W9	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X0	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X1	R	3/14/2006																
299-W15-48	52.5	54.5	B1K945		3/14/2006																
299-W15-48	52.5	54.5	B1K946		3/14/2006																
299-W15-48	52.5	54.5	B1K947		3/14/2006																
299-W15-48	67	69	B1HK24		3/20/2006					36	µg/kg	U		24	µg/kg	U		110	µg/kg	J	
299-W15-48	67	69	B1HK25		3/20/2006					0.13	µg/kg	U		0.55	µg/kg	U		16	µg/kg		
299-W15-48	70	72	B1HK29		3/22/2006					34	µg/kg	U		22	µg/kg	U		76	µg/kg	J	
299-W15-48	70	72	B1HK30		3/22/2006					0.13	µg/kg	U		0.57	µg/kg	U		2.2	µg/kg	J	
299-W15-48	70	72	B1K8X2	R	3/23/2006																
299-W15-48	70	72	B1K8X3	R	3/23/2006																
299-W15-48	70	72	B1K8X4	R	3/23/2006																
299-W15-48	70	72	B1K8X5	R	3/23/2006																
299-W15-48	70	72	B1K943		3/23/2006																
299-W15-48	70	72	B1K944		3/23/2006																
299-W15-48	73	75	B1HK34		3/27/2006					40	µg/kg	U		26	µg/kg	U		53	µg/kg	U	
299-W15-48	73	75	B1HK35		3/27/2006					0.17	µg/kg	U		0.72	µg/kg	U		34	µg/kg		
299-W15-48	100	102	B1HK49		4/4/2006					35	µg/kg	U		23	µg/kg	U		47	µg/kg	U	
299-W15-48	100	102	B1HK50		4/4/2006					0.16	µg/kg	U		0.7	µg/kg	U		0.29	µg/kg	U	
299-W15-48	100	102	B1K8X6	R	4/4/2006																
299-W15-48	100	102	B1K8X7	R	4/4/2006																
299-W15-48	100	102	B1K8X8	R	4/4/2006																
299-W15-48	100	102	B1K8X9	R	4/4/2006																
299-W15-48	103	105	B1HK44	R	4/6/2006					36	µg/kg	U		24	µg/kg	U		47	µg/kg	U	
299-W15-48	103	105	B1HK45	R	4/6/2006					0.15	µg/kg	U		0.63	µg/kg	U		0.26	µg/kg	U	
299-W15-48	103	105	B1HL19	R	4/6/2006					35	µg/kg	U		23	µg/kg	U		46	µg/kg	U	
299-W15-48	103	105	B1HL20	R	4/6/2006					0.14	µg/kg	U		0.62	µg/kg	U		0.25	µg/kg	U	
299-W15-48	118.5	120.5	B1HK40		4/13/2006					0.14	µg/kg	U		0.61	µg/kg	U		0.25	µg/kg	U	
299-W15-48	118.5	120.5	B1K8Y0	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y1	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y2	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y3	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y4	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y5	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y6	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y7	R	4/17/2006																
299-W15-48	118.5	120.5	B1K941		4/17/2006																

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chlorobenzene (108-90-7)				Chloroethane (75-00-3)				Chloroform (67-66-3)			
						TO-15				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	118.5	120.5	B1K942		4/17/2006																
299-W15-48	122.5	124.5	B1HK54		4/18/2006					12	µg/kg	U		12	µg/kg	U		24	µg/kg	J	
299-W15-48	122.5	124.5	B1HK55		4/18/2006					1.4	µg/kg	U		1.4	µg/kg	U		9.3	µg/kg		
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1K8Y8	R	4/19/2006																
299-W15-48	122.5	124.5	B1K8Y9	R	4/19/2006																
299-W15-48	122.5	124.5	B1K900	R	4/19/2006																
299-W15-48	122.5	124.5	B1K901	R	4/19/2006																
299-W15-48	128.5	130.5	B1HK59		4/24/2006					12	µg/kg	U		12	µg/kg	U		170	µg/kg		
299-W15-48	128.5	130.5	B1HK60		4/24/2006					1.3	µg/kg	U		1.3	µg/kg	U		250	µg/kg	E	
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1K902	R	4/25/2006																
299-W15-48	128.5	130.5	B1K903	R	4/25/2006																
299-W15-48	128.5	130.5	B1K904	R	4/25/2006																
299-W15-48	128.5	130.5	B1K905	R	4/25/2006																
299-W15-48	128.5	130.5	B1K937		4/25/2006																
299-W15-48	128.5	130.5	B1K939		4/25/2006																
299-W15-48	131.5	133	B1HK64		4/27/2006					120	µg/kg	U		120	µg/kg	U		120	µg/kg	U	
299-W15-48	131.5	133	B1HK65		4/27/2006					1.2	µg/kg	U		1.2	µg/kg	U		360	µg/kg		
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	131.5	133	B1K906	R	4/27/2006																
299-W15-48	131.5	133	B1K907	R	4/27/2006																
299-W15-48	131.5	133	B1K908	R	4/27/2006																
299-W15-48	131.5	133	B1K909	R	4/27/2006																
299-W15-48	131.5	133	B1K934		4/27/2006																
299-W15-48	131.5	133	B1K935		4/27/2006																
299-W15-48	131.5	133	B1K936		4/27/2006																
299-W15-48	135	140	B1HK74	S	5/3/2006					190	µg/kg	U		370	µg/kg	U		190	µg/kg	U	
299-W15-48	135	140	B1HK75	S	5/3/2006					3	µg/kg	U		7	µg/kg	U		3	µg/kg	U	
299-W15-48	135	140	B1HL24	S	5/3/2006					0.14	µg/kg	U		0.59	µg/kg	U		0.24	µg/kg	U	
299-W15-48	139.5	140	B1J7W6		5/8/2006	150	PPM(VV)														
299-W15-48	135.3	140	B1K910	R	5/4/2006																
299-W15-48	135.3	140	B1K911	R	5/4/2006																
299-W15-48	135.3	140	B1K912	R	5/4/2006																
299-W15-48	135.3	140	B1K913	R	5/4/2006																
299-W15-48	139.5	140	B1K914	R	5/8/2006																
299-W15-48	139.5	140	B1K915	R	5/8/2006																
299-W15-48	139.5	140	B1K916	R	5/8/2006																
299-W15-48	139.5	140	B1K917	R	5/8/2006																
299-W15-48	139.5	140	B1K931		5/8/2006																

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Chloroform (67-66-3)				Chloroform (67-66-3)				Chloroform (67-66-3)				Chloromethane (74-87-3)			
						B&K, field				MIRAN, field				TO-15				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB1		3/13/2006													0.97	µg/kg	U	
299-W15-48	52.5	54.5	B1K8W8	R	3/14/2006	2.69	PPM(V/V)														
299-W15-48	52.5	54.5	B1K8W9	R	3/14/2006	2.65	PPM(V/V)														
299-W15-48	52.5	54.5	B1K8X0	R	3/14/2006	2.9	PPM(V/V)														
299-W15-48	52.5	54.5	B1K8X1	R	3/14/2006	2.62	PPM(V/V)														
299-W15-48	52.5	54.5	B1K945		3/14/2006					0.07	PPM(V/V)	U									
299-W15-48	52.5	54.5	B1K946		3/14/2006					0.07	PPM(V/V)	U									
299-W15-48	52.5	54.5	B1K947		3/14/2006					9.28	PPM(V/V)										
299-W15-48	67	69	B1HK24		3/20/2006													57	µg/kg	U	
299-W15-48	67	69	B1HK25		3/20/2006													0.25	µg/kg	U	
299-W15-48	70	72	B1HK29		3/22/2006													54	µg/kg	U	
299-W15-48	70	72	B1HK30		3/22/2006													0.25	µg/kg	U	
299-W15-48	70	72	B1K8X2	R	3/23/2006	1.36	PPM(V/V)														
299-W15-48	70	72	B1K8X3	R	3/23/2006	1.12	PPM(V/V)														
299-W15-48	70	72	B1K8X4	R	3/23/2006	1.1	PPM(V/V)														
299-W15-48	70	72	B1K8X5	R	3/23/2006	1.15	PPM(V/V)														
299-W15-48	70	72	B1K943		3/23/2006					0.07	PPM(V/V)	U									
299-W15-48	70	72	B1K944		3/23/2006					0.07	PPM(V/V)	U									
299-W15-48	73	75	B1HK34		3/27/2006													63	µg/kg	U	
299-W15-48	73	75	B1HK35		3/27/2006													0.32	µg/kg	U	
299-W15-48	100	102	B1HK49		4/4/2006													56	µg/kg	U	
299-W15-48	100	102	B1HK50		4/4/2006													0.31	µg/kg	U	
299-W15-48	100	102	B1K8X6	R	4/4/2006	2.16	PPM(V/V)														
299-W15-48	100	102	B1K8X7	R	4/4/2006	1.51	PPM(V/V)														
299-W15-48	100	102	B1K8X8	R	4/4/2006	1.49	PPM(V/V)														
299-W15-48	100	102	B1K8X9	R	4/4/2006	1.71	PPM(V/V)														
299-W15-48	103	105	B1HK44	R	4/6/2006													57	µg/kg	U	
299-W15-48	103	105	B1HK45	R	4/6/2006													0.28	µg/kg	U	
299-W15-48	103	105	B1HL19	R	4/6/2006													56	µg/kg	U	
299-W15-48	103	105	B1HL20	R	4/6/2006													0.27	µg/kg	U	
299-W15-48	118.5	120.5	B1HK40		4/13/2006													0.27	µg/kg	U	
299-W15-48	118.5	120.5	B1K8Y0	R	4/13/2006	5.2	PPM(V/V)														
299-W15-48	118.5	120.5	B1K8Y1	R	4/13/2006	5.27	PPM(V/V)														
299-W15-48	118.5	120.5	B1K8Y2	R	4/13/2006	5.02	PPM(V/V)														
299-W15-48	118.5	120.5	B1K8Y3	R	4/13/2006	5.18	PPM(V/V)														
299-W15-48	118.5	120.5	B1K8Y4	R	4/17/2006	2	PPM(V/V)														
299-W15-48	118.5	120.5	B1K8Y5	R	4/17/2006	1.95	PPM(V/V)														
299-W15-48	118.5	120.5	B1K8Y6	R	4/17/2006	1.72	PPM(V/V)														
299-W15-48	118.5	120.5	B1K8Y7	R	4/17/2006	1.68	PPM(V/V)														
299-W15-48	118.5	120.5	B1K941		4/17/2006					0.07	PPM(V/V)	U									

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Decane (124-18-5)				Dibromochloromethane (124-48-1)				Ethylbenzene (100-41-4)				Hexachloroethane (67-72-1)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	135	140	B1HK74	S	5/3/2006					190	µg/kg	U		190	µg/kg	U					
299-W15-48	135	140	B1HK75	S	5/3/2006					3	µg/kg	U		3	µg/kg	U					
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HL24	S	5/3/2006					0.36	µg/kg	U		0.18	µg/kg	U					
299-W15-48	135	140	B1HL26	S	5/3/2006																
299-W15-48	139.5	140	B1J7W6		5/8/2006																
299-W15-48	135.3	140	B1K910	R	5/4/2006																
299-W15-48	135.3	140	B1K911	R	5/4/2006																
299-W15-48	135.3	140	B1K912	R	5/4/2006																
299-W15-48	135.3	140	B1K913	R	5/4/2006																
299-W15-48	139.5	140	B1K914	R	5/8/2006																
299-W15-48	139.5	140	B1K915	R	5/8/2006																
299-W15-48	139.5	140	B1K916	R	5/8/2006																
299-W15-48	139.5	140	B1K931		5/8/2006																
299-W15-48	135.3	140	B1K933		5/4/2006																
299-W15-48	139.5	145.5	B1J7Y1		5/9/2006																
299-W15-48	139.5	145.5	B1J7Y7		5/11/2006																
299-W15-48	139.5	145.5	B1K918	R	5/9/2006																
299-W15-48	139.5	145.5	B1K919	R	5/9/2006																
299-W15-48	139.5	145.5	B1K920	R	5/9/2006																
299-W15-48	139.5	145.5	B1K921	R	5/9/2006																
299-W15-48	139.5	145.5	B1K922	R	5/11/2006																
299-W15-48	139.5	145.5	B1K923	R	5/11/2006																
299-W15-48	139.5	145.5	B1K924	R	5/11/2006																
299-W15-48	139.5	145.5	B1K925	R	5/11/2006																
299-W15-48	139.5	145.5	B1K926		5/11/2006																
299-W15-48	139.5	145.5	B1K928		5/9/2006																
299-W15-48	139.5	145.5	B1K929		5/9/2006																
299-W15-48	99999	99999	B1K927		5/11/2006																
299-W15-48	99999	99999	B1K930		5/8/2006																
299-W15-48	99999	99999	B1K932		5/4/2006																
299-W15-48	99999	99999	B1K938		4/25/2006																
299-W15-48	99999	99999	B1K940		4/19/2006																
			B1HKY0	EB	4/19/2006					1	µg/L	U		1	µg/L	U					
	99999	99999	B1HK26	FB	3/20/2006					28	µg/kg	U		48	µg/kg	U					
	99999	99999	B1HK36	FB	3/27/2006					28	µg/kg	U		48	µg/kg	U					
	99999	99999	B1HK51	FB	4/4/2006					28	µg/kg	U		48	µg/kg	U					

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Decane (124-18-5)				Dibromochloromethane (124-48-1)				Ethylbenzene (100-41-4)				Hexachloroethane (67-72-1)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
	99999	99999	B1HK56	FB	4/18/2006					250	µg/kg	U		250	µg/kg	U					
	99999	99999	B1HK61	FB	4/24/2006					250	µg/kg	U		250	µg/kg	U					
	99999	99999	B1HK66	FB	4/27/2006					130	µg/kg	U		130	µg/kg	U					
	99999	99999	B1HK76	FB	5/3/2006					320	µg/kg	U		320	µg/kg	U					
	99999	99999	B1HKB2	FB	3/13/2006					28	µg/kg	U		48	µg/kg	U					
	99999	99999	B1HL21	FB	4/6/2006					28	µg/kg	U		48	µg/kg	U					
	99999	99999	B1HL25	FB	5/3/2006					28	µg/kg	U		48	µg/kg	U					
			B1HKY9	TB	4/19/2006					1	µg/L	U		1	µg/L	U					
			B1HL00	TB	4/25/2006					1	µg/L	U		1	µg/L	U					
			B1HL01	TB	4/27/2006					1	µg/L	U		1	µg/L	U					
			B1HL03	TB	5/3/2006					1	µg/L	U		1	µg/L	U					
			B1HL07	TB	3/22/2006					0.29	µg/L	U		0.19	µg/L	U					
			B1HL10	TB	4/6/2006					0.29	µg/L	U		0.19	µg/L	U					
					TQL (µg/kg)					N/A				5						N/A	

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Methylene chloride (75-09-2)				Methylene chloride (75-09-2)				Methylene chloride (75-09-2)				n-Butylbenzene (104-51-8)			
						8260				B&K, field				TO-15				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB1		3/13/2006	1.2	µg/kg	U									0.75	µg/kg	U		
299-W15-48	52.5	54.5	B1HKB3		3/13/2006																
299-W15-48	52.5	54.5	B1K8W8	R	3/14/2006				25.7	PPM(V/V)											
299-W15-48	52.5	54.5	B1K8W9	R	3/14/2006				22.4	PPM(V/V)											
299-W15-48	52.5	54.5	B1K8X0	R	3/14/2006				25.5	PPM(V/V)											
299-W15-48	52.5	54.5	B1K8X1	R	3/14/2006				22.7	PPM(V/V)											
299-W15-48	52.5	54.5	B1K945		3/14/2006																
299-W15-48	52.5	54.5	B1K946		3/14/2006																
299-W15-48	52.5	54.5	B1K947		3/14/2006																
299-W15-48	67	69	B1HK24		3/20/2006	52	µg/kg	U									63	µg/kg	U		
299-W15-48	67	69	B1HK25		3/20/2006	2.6	µg/kg	U									0.22	µg/kg	U		
299-W15-48	67	69	B1HK27		3/20/2006																
299-W15-48	70	72	B1HK29		3/22/2006	49	µg/kg	U									59	µg/kg	U		
299-W15-48	70	72	B1HK30		3/22/2006	2.7	µg/kg	U									0.22	µg/kg	U		
299-W15-48	70	72	B1HK32		3/22/2006																
299-W15-48	70	72	B1K8X2	R	3/23/2006				1.42	PPM(V/V)											
299-W15-48	70	72	B1K8X3	R	3/23/2006				1.38	PPM(V/V)											
299-W15-48	70	72	B1K8X4	R	3/23/2006				1.58	PPM(V/V)											
299-W15-48	70	72	B1K8X5	R	3/23/2006				1.58	PPM(V/V)											
299-W15-48	70	72	B1K943		3/23/2006																
299-W15-48	70	72	B1K944		3/23/2006																
299-W15-48	73	75	B1HK34		3/27/2006	57	µg/kg	U									70	µg/kg	U		
299-W15-48	73	75	B1HK35		3/27/2006	3.4	µg/kg	U									0.28	µg/kg	U		
299-W15-48	100	102	B1HK49		4/4/2006	140	µg/kg	JB									62	µg/kg	U		
299-W15-48	100	102	B1HK50		4/4/2006	3.3	µg/kg	U									0.27	µg/kg	U		
299-W15-48	100	102	B1HK52		4/4/2006																
299-W15-48	100	102	B1K8X6	R	4/4/2006				72	PPM(V/V)											
299-W15-48	100	102	B1K8X7	R	4/4/2006				71.5	PPM(V/V)											
299-W15-48	100	102	B1K8X8	R	4/4/2006				69.1	PPM(V/V)											
299-W15-48	100	102	B1K8X9	R	4/4/2006				68.4	PPM(V/V)											
299-W15-48	103	105	B1HK44	R	4/6/2006	52	µg/kg	U									63	µg/kg	U		
299-W15-48	103	105	B1HK45	R	4/6/2006	3	µg/kg	U									0.25	µg/kg	U		
299-W15-48	103	105	B1HK47	R	4/6/2006																
299-W15-48	103	105	B1HL19	R	4/6/2006	50	µg/kg	U									61	µg/kg	U		
299-W15-48	103	105	B1HL20	R	4/6/2006	2.9	µg/kg	U									0.24	µg/kg	U		
299-W15-48	103	105	B1HL22	R	4/6/2006																
299-W15-48	118.5	120.5	B1HK40		4/13/2006	2.9	µg/kg	U									0.24	µg/kg	U		

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Methylene chloride (75-09-2)				Methylene chloride (75-09-2)				Methylene chloride (75-09-2)				n-Butylbenzene (104-51-8)			
						8260				B&K, field				TO-15				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	135	140	B1HK74	S	5/3/2006	120	µg/kg	BJ									190	µg/kg	U		
299-W15-48	135	140	B1HK75	S	5/3/2006	3	µg/kg	U									3	µg/kg	U		
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HL24	S	5/3/2006	2.8	µg/kg	U									0.23	µg/kg	U		
299-W15-48	135	140	B1HL26	S	5/3/2006																
299-W15-48	139.5	140	B1J7W6		5/8/2006								0.4	PPM(V/V)	U						
299-W15-48	135.3	140	B1K910	R	5/4/2006				1	PPM(V/V)	U										
299-W15-48	135.3	140	B1K911	R	5/4/2006				1	PPM(V/V)	U										
299-W15-48	135.3	140	B1K912	R	5/4/2006				1	PPM(V/V)	U										
299-W15-48	135.3	140	B1K913	R	5/4/2006				1	PPM(V/V)	U										
299-W15-48	139.5	140	B1K914	R	5/8/2006				26.4	PPM(V/V)											
299-W15-48	139.5	140	B1K915	R	5/8/2006				26.9	PPM(V/V)											
299-W15-48	139.5	140	B1K916	R	5/8/2006				28.3	PPM(V/V)											
299-W15-48	139.5	140	B1K931		5/8/2006																
299-W15-48	135.3	140	B1K933		5/4/2006																
299-W15-48	139.5	145.5	B1J7Y1		5/9/2006								8	PPM(V/V)	U						
299-W15-48	139.5	145.5	B1J7Y7		5/11/2006								0.04	PPM(V/V)	U						
299-W15-48	139.5	145.5	B1K918	R	5/9/2006				1	PPM(V/V)	U										
299-W15-48	139.5	145.5	B1K919	R	5/9/2006				1	PPM(V/V)	U										
299-W15-48	139.5	145.5	B1K920	R	5/9/2006				1	PPM(V/V)	U										
299-W15-48	139.5	145.5	B1K921	R	5/9/2006				1	PPM(V/V)	U										
299-W15-48	139.5	145.5	B1K922	R	5/11/2006				1.93	PPM(V/V)											
299-W15-48	139.5	145.5	B1K923	R	5/11/2006				2.54	PPM(V/V)											
299-W15-48	139.5	145.5	B1K924	R	5/11/2006				2.04	PPM(V/V)											
299-W15-48	139.5	145.5	B1K925	R	5/11/2006				2.25	PPM(V/V)											
299-W15-48	139.5	145.5	B1K926		5/11/2006																
299-W15-48	139.5	145.5	B1K928		5/9/2006																
299-W15-48	139.5	145.5	B1K929		5/9/2006																
299-W15-48	99999	99999	B1K927		5/11/2006																
299-W15-48	99999	99999	B1K930		5/8/2006																
299-W15-48	99999	99999	B1K932		5/4/2006																
299-W15-48	99999	99999	B1K938		4/25/2006																
299-W15-48	99999	99999	B1K940		4/19/2006																
			B1HKY0	EB	4/19/2006	1	µg/L	U									1	µg/L	U		
	99999	99999	B1HK26	FB	3/20/2006	46	µg/kg	U									56	µg/kg	U		
	99999	99999	B1HK36	FB	3/27/2006	46	µg/kg	U									56	µg/kg	U		
	99999	99999	B1HK51	FB	4/4/2006	46	µg/kg	U									56	µg/kg	U		

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Methylene chloride (75-09-2)				Methylene chloride (75-09-2)				Methylene chloride (75-09-2)				n-Butylbenzene (104-51-8)			
						8260				B&K, field				TO-15				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
	99999	99999	B1HK56	FB	4/18/2006	250	µg/kg	U										250	µg/kg	U	
	99999	99999	B1HK61	FB	4/24/2006	250	µg/kg	U										250	µg/kg	U	
	99999	99999	B1HK66	FB	4/27/2006	130	µg/kg	U										130	µg/kg	U	
	99999	99999	B1HK76	FB	5/3/2006	190	µg/kg	BJ										320	µg/kg	U	
	99999	99999	B1HKB2	FB	3/13/2006	120	µg/kg	JB										56	µg/kg	U	
	99999	99999	B1HL21	FB	4/6/2006	46	µg/kg	U										56	µg/kg	U	
	99999	99999	B1HL25	FB	5/3/2006	46	µg/kg	U										56	µg/kg	U	
			B1HKY9	TB	4/19/2006	1	µg/L	U										1	µg/L	U	
			B1HL00	TB	4/25/2006	1	µg/L	U										1	µg/L	U	
			B1HL01	TB	4/27/2006	1	µg/L	U										1	µg/L	U	
			B1HL03	TB	5/3/2006	1	µg/L	U										1	µg/L	U	
			B1HL07	TB	3/22/2006	0.68	µg/L	U										0.53	µg/L	U	
			B1HL10	TB	4/6/2006	1.5	µg/L	JB										0.53	µg/L	U	
					TQL (µg/kg)		5											5			

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Nitrous Oxide (10024-97-2)				Styrene (100-42-5)				Tetrachloroethene (127-18-4)				Tetrachloroethene (127-18-4)			
						MIRAN, field				8260				8260				TO-15			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB1		3/13/2006					0.28	µg/kg	U		0.63	µg/kg	U					
299-W15-48	52.5	54.5	B1HKB3		3/13/2006																
299-W15-48	52.5	54.5	B1K8W8	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8W9	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X0	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X1	R	3/14/2006																
299-W15-48	52.5	54.5	B1K945		3/14/2006	0.04	PPM(V/V)	U													
299-W15-48	52.5	54.5	B1K946		3/14/2006	0.04	PPM(V/V)	U													
299-W15-48	52.5	54.5	B1K947		3/14/2006	14.62	PPM(V/V)														
299-W15-48	67	69	B1HK24		3/20/2006					33	µg/kg	U		130	µg/kg	J					
299-W15-48	67	69	B1HK25		3/20/2006					0.26	µg/kg	U		8.3	µg/kg						
299-W15-48	67	69	B1HK27		3/20/2006																
299-W15-48	70	72	B1HK29		3/22/2006					31	µg/kg	U		220	µg/kg	J					
299-W15-48	70	72	B1HK30		3/22/2006					0.26	µg/kg	U		5.2	µg/kg						
299-W15-48	70	72	B1HK32		3/22/2006																
299-W15-48	70	72	B1K8X2	R	3/23/2006																
299-W15-48	70	72	B1K8X3	R	3/23/2006																
299-W15-48	70	72	B1K8X4	R	3/23/2006																
299-W15-48	70	72	B1K8X5	R	3/23/2006																
299-W15-48	70	72	B1K943		3/23/2006																
299-W15-48	70	72	B1K944		3/23/2006																
299-W15-48	73	75	B1HK34		3/27/2006					37	µg/kg	U		73	µg/kg	J					
299-W15-48	73	75	B1HK35		3/27/2006					0.48	µg/kg	J		37	µg/kg						
299-W15-48	100	102	B1HK49		4/4/2006					33	µg/kg	U		58	µg/kg	U					
299-W15-48	100	102	B1HK50		4/4/2006					0.32	µg/kg	U		0.49	µg/kg	U					
299-W15-48	100	102	B1HK52		4/4/2006																
299-W15-48	100	102	B1K8X6	R	4/4/2006																
299-W15-48	100	102	B1K8X7	R	4/4/2006																
299-W15-48	100	102	B1K8X8	R	4/4/2006																
299-W15-48	100	102	B1K8X9	R	4/4/2006																
299-W15-48	103	105	B1HK44	R	4/6/2006					33	µg/kg	U		59	µg/kg	U					
299-W15-48	103	105	B1HK45	R	4/6/2006					0.29	µg/kg	U		0.44	µg/kg	U					
299-W15-48	103	105	B1HK47	R	4/6/2006																
299-W15-48	103	105	B1HL19	R	4/6/2006					33	µg/kg	U		57	µg/kg	U					
299-W15-48	103	105	B1HL20	R	4/6/2006					0.29	µg/kg	U		0.43	µg/kg	U					
299-W15-48	103	105	B1HL22	R	4/6/2006																
299-W15-48	118.5	120.5	B1HK40		4/13/2006					0.28	µg/kg	U		0.42	µg/kg	U					

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Nitrous Oxide (10024-97-2)				Styrene (100-42-5)				Tetrachloroethene (127-18-4)				Tetrachloroethene (127-18-4)			
						MIRAN, field				8260				8260				TO-15			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	118.5	120.5	B1HK42		4/13/2006																
299-W15-48	118.5	120.5	B1K8Y0	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y1	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y2	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y3	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y4	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y5	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y6	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y7	R	4/17/2006																
299-W15-48	118.5	120.5	B1K941		4/17/2006	5.05	PPM(V/V)														
299-W15-48	118.5	120.5	B1K942		4/17/2006	10.04	PPM(V/V)														
299-W15-48	122.5	124.5	B1HK54		4/18/2006					12	µg/kg	U		12	µg/kg	U					
299-W15-48	122.5	124.5	B1HK55		4/18/2006					1.4	µg/kg	U		1.4	µg/kg	U					
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1K8Y8	R	4/19/2006																
299-W15-48	122.5	124.5	B1K8Y9	R	4/19/2006																
299-W15-48	122.5	124.5	B1K900	R	4/19/2006																
299-W15-48	122.5	124.5	B1K901	R	4/19/2006																
299-W15-48	128.5	130.5	B1HK59		4/24/2006					12	µg/kg	U		12	µg/kg	U					
299-W15-48	128.5	130.5	B1HK60		4/24/2006					1.3	µg/kg	U		15	µg/kg						
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1K902	R	4/25/2006																
299-W15-48	128.5	130.5	B1K903	R	4/25/2006																
299-W15-48	128.5	130.5	B1K904	R	4/25/2006																
299-W15-48	128.5	130.5	B1K905	R	4/25/2006																
299-W15-48	128.5	130.5	B1K937		4/25/2006																
299-W15-48	128.5	130.5	B1K939		4/25/2006																
299-W15-48	131.5	133	B1HK64		4/27/2006					120	µg/kg	U		120	µg/kg	U					
299-W15-48	131.5	133	B1HK65		4/27/2006					1.2	µg/kg	U		1.2	µg/kg	U					
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	131.5	133	B1K906	R	4/27/2006																
299-W15-48	131.5	133	B1K907	R	4/27/2006																
299-W15-48	131.5	133	B1K908	R	4/27/2006																
299-W15-48	131.5	133	B1K909	R	4/27/2006																
299-W15-48	131.5	133	B1K934		4/27/2006																
299-W15-48	131.5	133	B1K935		4/27/2006																
299-W15-48	131.5	133	B1K936		4/27/2006																

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Nitrous Oxide (10024-97-2)				Styrene (100-42-5)				Tetrachloroethene (127-18-4)				Tetrachloroethene (127-18-4)			
						MIRAN, field				8260				8260				TO-15			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	135	140	B1HK74	S	5/3/2006					190	µg/kg	U		190	µg/kg	U					
299-W15-48	135	140	B1HK75	S	5/3/2006					3	µg/kg	U		3	µg/kg	U					
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HL24	S	5/3/2006					0.27	µg/kg	U		0.41	µg/kg	U					
299-W15-48	135	140	B1HL26	S	5/3/2006																
299-W15-48	139.5	140	B1J7W6		5/8/2006												0.4	PPM(V/V)	U		
299-W15-48	135.3	140	B1K910	R	5/4/2006																
299-W15-48	135.3	140	B1K911	R	5/4/2006																
299-W15-48	135.3	140	B1K912	R	5/4/2006																
299-W15-48	135.3	140	B1K913	R	5/4/2006																
299-W15-48	139.5	140	B1K914	R	5/8/2006																
299-W15-48	139.5	140	B1K915	R	5/8/2006																
299-W15-48	139.5	140	B1K916	R	5/8/2006																
299-W15-48	139.5	140	B1K931		5/8/2006																
299-W15-48	135.3	140	B1K933		5/4/2006																
299-W15-48	139.5	145.5	B1J7Y1		5/9/2006												8	PPM(V/V)	U		
299-W15-48	139.5	145.5	B1J7Y7		5/11/2006												0.04	PPM(V/V)	U		
299-W15-48	139.5	145.5	B1K918	R	5/9/2006																
299-W15-48	139.5	145.5	B1K919	R	5/9/2006																
299-W15-48	139.5	145.5	B1K920	R	5/9/2006																
299-W15-48	139.5	145.5	B1K921	R	5/9/2006																
299-W15-48	139.5	145.5	B1K922	R	5/11/2006																
299-W15-48	139.5	145.5	B1K923	R	5/11/2006																
299-W15-48	139.5	145.5	B1K924	R	5/11/2006																
299-W15-48	139.5	145.5	B1K925	R	5/11/2006																
299-W15-48	139.5	145.5	B1K926		5/11/2006																
299-W15-48	139.5	145.5	B1K928		5/9/2006																
299-W15-48	139.5	145.5	B1K929		5/9/2006																
299-W15-48	99999	99999	B1K927		5/11/2006																
299-W15-48	99999	99999	B1K930		5/8/2006																
299-W15-48	99999	99999	B1K932		5/4/2006																
299-W15-48	99999	99999	B1K938		4/25/2006																
299-W15-48	99999	99999	B1K940		4/19/2006																
			B1HKY0	EB	4/19/2006					1	µg/L	U		1	µg/L	U					
	99999	99999	B1HK26	FB	3/20/2006					30	µg/kg	U		52	µg/kg	U					
	99999	99999	B1HK36	FB	3/27/2006					30	µg/kg	U		52	µg/kg	U					
	99999	99999	B1HK51	FB	4/4/2006					30	µg/kg	U		52	µg/kg	U					

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Nitrous Oxide (10024-97-2)				Styrene (100-42-5)				Tetrachloroethene (127-18-4)				Tetrachloroethene (127-18-4)			
						MIRAN, field				8260				8260				TO-15			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
	99999	99999	B1HK56	FB	4/18/2006					250	µg/kg	U		250	µg/kg	U					
	99999	99999	B1HK61	FB	4/24/2006					250	µg/kg	U		250	µg/kg	U					
	99999	99999	B1HK66	FB	4/27/2006					130	µg/kg	U		130	µg/kg	U					
	99999	99999	B1HK76	FB	5/3/2006					320	µg/kg	U		320	µg/kg	U					
	99999	99999	B1HKB2	FB	3/13/2006					30	µg/kg	U		52	µg/kg	U					
	99999	99999	B1HL21	FB	4/6/2006					30	µg/kg	U		52	µg/kg	U					
	99999	99999	B1HL25	FB	5/3/2006					30	µg/kg	U		52	µg/kg	U					
			B1HKY9	TB	4/19/2006					1	µg/L	U		1	µg/L	U					
			B1HL00	TB	4/25/2006					1	µg/L	U		1	µg/L	U					
			B1HL01	TB	4/27/2006					1	µg/L	U		1	µg/L	U					
			B1HL03	TB	5/3/2006					1	µg/L	U		1	µg/L	U					
			B1HL07	TB	3/22/2006					0.21	µg/L	U		0.27	µg/L	U					
			B1HL10	TB	4/6/2006					0.21	µg/L	U		0.27	µg/L	U					
					TQL (µg/kg)					N/A				5					5		

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tetrahydrofuran (109-99-9)				Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				trans-1,3- Dichloropropene (10061-02-6)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB1		3/13/2006					0.47	µg/kg	U					0.44	µg/kg	U		
299-W15-48	52.5	54.5	B1HKB3		3/13/2006																
299-W15-48	52.5	54.5	B1K8W8	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8W9	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X0	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X1	R	3/14/2006																
299-W15-48	52.5	54.5	B1K945		3/14/2006																
299-W15-48	52.5	54.5	B1K946		3/14/2006																
299-W15-48	52.5	54.5	B1K947		3/14/2006																
299-W15-48	67	69	B1HK24		3/20/2006					42	µg/kg	U					95	µg/kg	U		
299-W15-48	67	69	B1HK25		3/20/2006					0.75	µg/kg	J					0.27	µg/kg	U		
299-W15-48	67	69	B1HK27		3/20/2006																
299-W15-48	70	72	B1HK29		3/22/2006					40	µg/kg	U					90	µg/kg	U		
299-W15-48	70	72	B1HK30		3/22/2006					2.3	µg/kg	J					0.28	µg/kg	U		
299-W15-48	70	72	B1HK32		3/22/2006																
299-W15-48	70	72	B1K8X2	R	3/23/2006																
299-W15-48	70	72	B1K8X3	R	3/23/2006																
299-W15-48	70	72	B1K8X4	R	3/23/2006																
299-W15-48	70	72	B1K8X5	R	3/23/2006																
299-W15-48	70	72	B1K943		3/23/2006																
299-W15-48	70	72	B1K944		3/23/2006																
299-W15-48	73	75	B1HK34		3/27/2006					47	µg/kg	U					110	µg/kg	U		
299-W15-48	73	75	B1HK35		3/27/2006					0.73	µg/kg	U					0.35	µg/kg	U		
299-W15-48	100	102	B1HK49		4/4/2006					41	µg/kg	U					93	µg/kg	U		
299-W15-48	100	102	B1HK50		4/4/2006					0.71	µg/kg	U					0.34	µg/kg	U		
299-W15-48	100	102	B1HK52		4/4/2006																
299-W15-48	100	102	B1K8X6	R	4/4/2006																
299-W15-48	100	102	B1K8X7	R	4/4/2006																
299-W15-48	100	102	B1K8X8	R	4/4/2006																
299-W15-48	100	102	B1K8X9	R	4/4/2006																
299-W15-48	103	105	B1HK44	R	4/6/2006					42	µg/kg	U					95	µg/kg	U		
299-W15-48	103	105	B1HK45	R	4/6/2006					0.65	µg/kg	J					0.3	µg/kg	U		
299-W15-48	103	105	B1HK47	R	4/6/2006																
299-W15-48	103	105	B1HL19	R	4/6/2006					41	µg/kg	U					93	µg/kg	U		
299-W15-48	103	105	B1HL20	R	4/6/2006					0.66	µg/kg	J					0.3	µg/kg	U		
299-W15-48	103	105	B1HL22	R	4/6/2006																
299-W15-48	118.5	120.5	B1HK40		4/13/2006					0.62	µg/kg	U					0.29	µg/kg	U		

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tetrahydrofuran (109-99-9)				Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				trans-1,3- Dichloropropene (10061-02-6)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	118.5	120.5	B1HK42		4/13/2006																
299-W15-48	118.5	120.5	B1K8Y0	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y1	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y2	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y3	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y4	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y5	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y6	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y7	R	4/17/2006																
299-W15-48	118.5	120.5	B1K941		4/17/2006																
299-W15-48	118.5	120.5	B1K942		4/17/2006																
299-W15-48	122.5	124.5	B1HK54		4/18/2006	490	µg/kg			12	µg/kg	U					12	µg/kg	U		
299-W15-48	122.5	124.5	B1HK55		4/18/2006	370	µg/kg			1.4	µg/kg	U					1.4	µg/kg	U		
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1K8Y8	R	4/19/2006																
299-W15-48	122.5	124.5	B1K8Y9	R	4/19/2006																
299-W15-48	122.5	124.5	B1K900	R	4/19/2006																
299-W15-48	122.5	124.5	B1K901	R	4/19/2006																
299-W15-48	128.5	130.5	B1HK59		4/24/2006					12	µg/kg	U					12	µg/kg	U		
299-W15-48	128.5	130.5	B1HK60		4/24/2006	110	µg/kg			1.3	µg/kg	U					1.3	µg/kg	U		
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1K902	R	4/25/2006																
299-W15-48	128.5	130.5	B1K903	R	4/25/2006																
299-W15-48	128.5	130.5	B1K904	R	4/25/2006																
299-W15-48	128.5	130.5	B1K905	R	4/25/2006																
299-W15-48	128.5	130.5	B1K937		4/25/2006																
299-W15-48	128.5	130.5	B1K939		4/25/2006																
299-W15-48	131.5	133	B1HK64		4/27/2006					120	µg/kg	U					120	µg/kg	U		
299-W15-48	131.5	133	B1HK65		4/27/2006	53	µg/kg			3.8	µg/kg	J					1.2	µg/kg	U		
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	131.5	133	B1K906	R	4/27/2006																
299-W15-48	131.5	133	B1K907	R	4/27/2006																
299-W15-48	131.5	133	B1K908	R	4/27/2006																
299-W15-48	131.5	133	B1K909	R	4/27/2006																
299-W15-48	131.5	133	B1K934		4/27/2006																
299-W15-48	131.5	133	B1K935		4/27/2006																
299-W15-48	131.5	133	B1K936		4/27/2006																

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tetrahydrofuran (109-99-9)				Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				trans-1,3- Dichloropropene (10061-02-6)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	135	140	B1HK74	S	5/3/2006					190	µg/kg	U		190	µg/kg	U		190	µg/kg	U	
299-W15-48	135	140	B1HK75	S	5/3/2006					3	µg/kg	U		3	µg/kg	U		3	µg/kg	U	
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HL24	S	5/3/2006					0.6	µg/kg	U						0.28	µg/kg	U	
299-W15-48	135	140	B1HL26	S	5/3/2006																
299-W15-48	139.5	140	B1J7W6		5/8/2006																
299-W15-48	135.3	140	B1K910	R	5/4/2006																
299-W15-48	135.3	140	B1K911	R	5/4/2006																
299-W15-48	135.3	140	B1K912	R	5/4/2006																
299-W15-48	135.3	140	B1K913	R	5/4/2006																
299-W15-48	139.5	140	B1K914	R	5/8/2006																
299-W15-48	139.5	140	B1K915	R	5/8/2006																
299-W15-48	139.5	140	B1K916	R	5/8/2006																
299-W15-48	139.5	140	B1K931		5/8/2006																
299-W15-48	135.3	140	B1K933		5/4/2006																
299-W15-48	139.5	145.5	B1J7Y1		5/9/2006																
299-W15-48	139.5	145.5	B1J7Y7		5/11/2006																
299-W15-48	139.5	145.5	B1K918	R	5/9/2006																
299-W15-48	139.5	145.5	B1K919	R	5/9/2006																
299-W15-48	139.5	145.5	B1K920	R	5/9/2006																
299-W15-48	139.5	145.5	B1K921	R	5/9/2006																
299-W15-48	139.5	145.5	B1K922	R	5/11/2006																
299-W15-48	139.5	145.5	B1K923	R	5/11/2006																
299-W15-48	139.5	145.5	B1K924	R	5/11/2006																
299-W15-48	139.5	145.5	B1K925	R	5/11/2006																
299-W15-48	139.5	145.5	B1K926		5/11/2006																
299-W15-48	139.5	145.5	B1K928		5/9/2006																
299-W15-48	139.5	145.5	B1K929		5/9/2006																
299-W15-48	99999	99999	B1K927		5/11/2006																
299-W15-48	99999	99999	B1K930		5/8/2006																
299-W15-48	99999	99999	B1K932		5/4/2006																
299-W15-48	99999	99999	B1K938		4/25/2006																
299-W15-48	99999	99999	B1K940		4/19/2006																
			B1HKY0	EB	4/19/2006					1	µg/L	U						1	µg/L	U	
	99999	99999	B1HK26	FB	3/20/2006					37	µg/kg	U						84	µg/kg	U	
	99999	99999	B1HK36	FB	3/27/2006					37	µg/kg	U						84	µg/kg	U	
	99999	99999	B1HK51	FB	4/4/2006					37	µg/kg	U						84	µg/kg	U	

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tetrahydrofuran (109-99-9)				Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				trans-1,3- Dichloropropene (10061-02-6)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
	99999	99999	B1HK56	FB	4/18/2006					250	µg/kg	U					250	µg/kg	U		
	99999	99999	B1HK61	FB	4/24/2006					250	µg/kg	U					250	µg/kg	U		
	99999	99999	B1HK66	FB	4/27/2006					130	µg/kg	U					130	µg/kg	U		
	99999	99999	B1HK76	FB	5/3/2006					320	µg/kg	U		320	µg/kg	U		320	µg/kg	U	
	99999	99999	B1HKB2	FB	3/13/2006					130	µg/kg	JB					84	µg/kg	U		
	99999	99999	B1HL21	FB	4/6/2006					37	µg/kg	U					84	µg/kg	U		
	99999	99999	B1HL25	FB	5/3/2006					210	µg/kg	J					84	µg/kg	U		
			B1HKY9	TB	4/19/2006					1	µg/L	U					1	µg/L	U		
			B1HL00	TB	4/25/2006					1	µg/L	U					1	µg/L	U		
			B1HL01	TB	4/27/2006					1	µg/L	U					1	µg/L	U		
			B1HL03	TB	5/3/2006					1	µg/L	U					1	µg/L	U		
			B1HL07	TB	3/22/2006					0.13	µg/L	U					0.2	µg/L	U		
			B1HL10	TB	4/6/2006					0.13	µg/L	U					0.2	µg/L	U		
					TQL (µg/kg)					N/A							5				
																	10				
																			N/A		

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Trichloroethene (79-01-6)				Trichloroethene (79-01-6)				Trichloromonofluoromethane (75-69-4)				Vinyl chloride (75-01-4)			
						8260				TO-15				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB1		3/13/2006	0.58	µg/kg	U									1.9	µg/kg	U		
299-W15-48	52.5	54.5	B1HKB3		3/13/2006																
299-W15-48	52.5	54.5	B1K8W8	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8W9	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X0	R	3/14/2006																
299-W15-48	52.5	54.5	B1K8X1	R	3/14/2006																
299-W15-48	52.5	54.5	B1K945		3/14/2006																
299-W15-48	52.5	54.5	B1K946		3/14/2006																
299-W15-48	52.5	54.5	B1K947		3/14/2006																
299-W15-48	67	69	B1HK24		3/20/2006	42	µg/kg	U									150	µg/kg	U		
299-W15-48	67	69	B1HK25		3/20/2006	0.26	µg/kg	U									0.32	µg/kg	U		
299-W15-48	67	69	B1HK27		3/20/2006																
299-W15-48	70	72	B1HK29		3/22/2006	40	µg/kg	U									140	µg/kg	U		
299-W15-48	70	72	B1HK30		3/22/2006	0.26	µg/kg	U									0.34	µg/kg	U		
299-W15-48	70	72	B1HK32		3/22/2006																
299-W15-48	70	72	B1K8X2	R	3/23/2006																
299-W15-48	70	72	B1K8X3	R	3/23/2006																
299-W15-48	70	72	B1K8X4	R	3/23/2006																
299-W15-48	70	72	B1K8X5	R	3/23/2006																
299-W15-48	70	72	B1K943		3/23/2006																
299-W15-48	70	72	B1K944		3/23/2006																
299-W15-48	73	75	B1HK34		3/27/2006	47	µg/kg	U									160	µg/kg	U		
299-W15-48	73	75	B1HK35		3/27/2006	1.3	µg/kg	J									0.42	µg/kg	U		
299-W15-48	100	102	B1HK49		4/4/2006	41	µg/kg	U									150	µg/kg	U		
299-W15-48	100	102	B1HK50		4/4/2006	0.32	µg/kg	U									0.41	µg/kg	U		
299-W15-48	100	102	B1HK52		4/4/2006																
299-W15-48	100	102	B1K8X6	R	4/4/2006																
299-W15-48	100	102	B1K8X7	R	4/4/2006																
299-W15-48	100	102	B1K8X8	R	4/4/2006																
299-W15-48	100	102	B1K8X9	R	4/4/2006																
299-W15-48	103	105	B1HK44	R	4/6/2006	42	µg/kg	U									150	µg/kg	U		
299-W15-48	103	105	B1HK45	R	4/6/2006	0.29	µg/kg	U									0.37	µg/kg	U		
299-W15-48	103	105	B1HK47	R	4/6/2006																
299-W15-48	103	105	B1HL19	R	4/6/2006	41	µg/kg	U									150	µg/kg	U		
299-W15-48	103	105	B1HL20	R	4/6/2006	0.29	µg/kg	U									0.36	µg/kg	U		
299-W15-48	103	105	B1HL22	R	4/6/2006																
299-W15-48	118.5	120.5	B1HK40		4/13/2006	0.28	µg/kg	U									0.36	µg/kg	U		

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Trichloroethene (79-01-6)				Trichloroethene (79-01-6)				Trichloromonofluoromethane (75-69-4)				Vinyl chloride (75-01-4)			
						8260				TO-15				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	118.5	120.5	B1HK42		4/13/2006																
299-W15-48	118.5	120.5	B1K8Y0	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y1	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y2	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y3	R	4/13/2006																
299-W15-48	118.5	120.5	B1K8Y4	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y5	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y6	R	4/17/2006																
299-W15-48	118.5	120.5	B1K8Y7	R	4/17/2006																
299-W15-48	118.5	120.5	B1K941		4/17/2006																
299-W15-48	118.5	120.5	B1K942		4/17/2006																
299-W15-48	122.5	124.5	B1HK54		4/18/2006	12	µg/kg	U								12	µg/kg	U			
299-W15-48	122.5	124.5	B1HK55		4/18/2006	1.4	µg/kg	U					3	µg/kg		1.4	µg/kg	U			
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1K8Y8	R	4/19/2006																
299-W15-48	122.5	124.5	B1K8Y9	R	4/19/2006																
299-W15-48	122.5	124.5	B1K900	R	4/19/2006																
299-W15-48	122.5	124.5	B1K901	R	4/19/2006																
299-W15-48	128.5	130.5	B1HK59		4/24/2006	12	µg/kg	U								12	µg/kg	U			
299-W15-48	128.5	130.5	B1HK60		4/24/2006	1.3	µg/kg	U								1.3	µg/kg	U			
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1K902	R	4/25/2006																
299-W15-48	128.5	130.5	B1K903	R	4/25/2006																
299-W15-48	128.5	130.5	B1K904	R	4/25/2006																
299-W15-48	128.5	130.5	B1K905	R	4/25/2006																
299-W15-48	128.5	130.5	B1K937		4/25/2006																
299-W15-48	128.5	130.5	B1K939		4/25/2006																
299-W15-48	131.5	133	B1HK64		4/27/2006	120	µg/kg	U								120	µg/kg	U			
299-W15-48	131.5	133	B1HK65		4/27/2006	1.2	µg/kg	U								1.2	µg/kg	U			
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	131.5	133	B1K906	R	4/27/2006																
299-W15-48	131.5	133	B1K907	R	4/27/2006																
299-W15-48	131.5	133	B1K908	R	4/27/2006																
299-W15-48	131.5	133	B1K909	R	4/27/2006																
299-W15-48	131.5	133	B1K934		4/27/2006																
299-W15-48	131.5	133	B1K935		4/27/2006																
299-W15-48	131.5	133	B1K936		4/27/2006																

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Trichloroethene (79-01-6)				Trichloroethene (79-01-6)				Trichloromonofluoromethane (75-69-4)				Vinyl chloride (75-01-4)			
						8260				TO-15				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	135	140	B1HK74	S	5/3/2006	190	µg/kg	U									370	µg/kg	U		
299-W15-48	135	140	B1HK75	S	5/3/2006	3	µg/kg	U									7	µg/kg	U		
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HL24	S	5/3/2006	0.27	µg/kg	U									0.35	µg/kg	U		
299-W15-48	135	140	B1HL26	S	5/3/2006																
299-W15-48	139.5	140	B1J7W6		5/8/2006				0.4	PPM(V/V)	U										
299-W15-48	135.3	140	B1K910	R	5/4/2006																
299-W15-48	135.3	140	B1K911	R	5/4/2006																
299-W15-48	135.3	140	B1K912	R	5/4/2006																
299-W15-48	135.3	140	B1K913	R	5/4/2006																
299-W15-48	139.5	140	B1K914	R	5/8/2006																
299-W15-48	139.5	140	B1K915	R	5/8/2006																
299-W15-48	139.5	140	B1K916	R	5/8/2006																
299-W15-48	139.5	140	B1K931		5/8/2006																
299-W15-48	135.3	140	B1K933		5/4/2006																
299-W15-48	139.5	145.5	B1J7Y1		5/9/2006				8	PPM(V/V)	U										
299-W15-48	139.5	145.5	B1J7Y7		5/11/2006				0.04	PPM(V/V)	U										
299-W15-48	139.5	145.5	B1K918	R	5/9/2006																
299-W15-48	139.5	145.5	B1K919	R	5/9/2006																
299-W15-48	139.5	145.5	B1K920	R	5/9/2006																
299-W15-48	139.5	145.5	B1K921	R	5/9/2006																
299-W15-48	139.5	145.5	B1K922	R	5/11/2006																
299-W15-48	139.5	145.5	B1K923	R	5/11/2006																
299-W15-48	139.5	145.5	B1K924	R	5/11/2006																
299-W15-48	139.5	145.5	B1K925	R	5/11/2006																
299-W15-48	139.5	145.5	B1K926		5/11/2006																
299-W15-48	139.5	145.5	B1K928		5/9/2006																
299-W15-48	139.5	145.5	B1K929		5/9/2006																
299-W15-48	99999	99999	B1K927		5/11/2006																
299-W15-48	99999	99999	B1K930		5/8/2006																
299-W15-48	99999	99999	B1K932		5/4/2006																
299-W15-48	99999	99999	B1K938		4/25/2006																
299-W15-48	99999	99999	B1K940		4/19/2006																
			B1HKY0	EB	4/19/2006	1	µg/L	U									1	µg/L	U		
	99999	99999	B1HK26	FB	3/20/2006	37	µg/kg	U									130	µg/kg	U		
	99999	99999	B1HK36	FB	3/27/2006	37	µg/kg	U									130	µg/kg	U		
	99999	99999	B1HK51	FB	4/4/2006	37	µg/kg	U									130	µg/kg	U		

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Trichloroethene (79-01-6)				Trichloroethene (79-01-6)				Trichloromonofluorom ethane (75-69-4)				Vinyl chloride (75-01-4)			
						8260				TO-15				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
	99999	99999	B1HK56	FB	4/18/2006	250	µg/kg	U										250	µg/kg	U	
	99999	99999	B1HK61	FB	4/24/2006	250	µg/kg	U										250	µg/kg	U	
	99999	99999	B1HK66	FB	4/27/2006	130	µg/kg	U										130	µg/kg	U	
	99999	99999	B1HK76	FB	5/3/2006	320	µg/kg	U										640	µg/kg	U	
	99999	99999	B1HKB2	FB	3/13/2006	37	µg/kg	U										130	µg/kg	U	
	99999	99999	B1HL21	FB	4/6/2006	37	µg/kg	U										130	µg/kg	U	
	99999	99999	B1HL25	FB	5/3/2006	37	µg/kg	U										130	µg/kg	U	
			B1HKY9	TB	4/19/2006	1	µg/L	U										1	µg/L	U	
			B1HL00	TB	4/25/2006	1	µg/L	U										1	µg/L	U	
			B1HL01	TB	4/27/2006	1	µg/L	U										1	µg/L	U	
			B1HL03	TB	5/3/2006	1	µg/L	U										1	µg/L	U	
			B1HL07	TB	3/22/2006	0.36	µg/L	U										0.24	µg/L	U	
			B1HL10	TB	4/6/2006	0.36	µg/L	U										0.24	µg/L	U	
					TQL (µg/kg)	5			5			N/A			N/A						

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Xylenes (total) (1330-20-7)			
						8260			
						Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB1		3/13/2006	1.3	µg/kg	U	
299-W15-48	52.5	54.5	B1HKB3		3/13/2006				
299-W15-48	52.5	54.5	B1K8W8	R	3/14/2006				
299-W15-48	52.5	54.5	B1K8W9	R	3/14/2006				
299-W15-48	52.5	54.5	B1K8X0	R	3/14/2006				
299-W15-48	52.5	54.5	B1K8X1	R	3/14/2006				
299-W15-48	52.5	54.5	B1K945		3/14/2006				
299-W15-48	52.5	54.5	B1K946		3/14/2006				
299-W15-48	52.5	54.5	B1K947		3/14/2006				
299-W15-48	67	69	B1HK24		3/20/2006	140	µg/kg	U	
299-W15-48	67	69	B1HK25		3/20/2006	0.4	µg/kg	U	
299-W15-48	67	69	B1HK27		3/20/2006				
299-W15-48	70	72	B1HK29		3/22/2006	140	µg/kg	U	
299-W15-48	70	72	B1HK30		3/22/2006	0.42	µg/kg	U	
299-W15-48	70	72	B1HK32		3/22/2006				
299-W15-48	70	72	B1K8X2	R	3/23/2006				
299-W15-48	70	72	B1K8X3	R	3/23/2006				
299-W15-48	70	72	B1K8X4	R	3/23/2006				
299-W15-48	70	72	B1K8X5	R	3/23/2006				
299-W15-48	70	72	B1K943		3/23/2006				
299-W15-48	70	72	B1K944		3/23/2006				
299-W15-48	73	75	B1HK34		3/27/2006	160	µg/kg	U	
299-W15-48	73	75	B1HK35		3/27/2006	3	µg/kg	J	
299-W15-48	100	102	B1HK49		4/4/2006	140	µg/kg	U	
299-W15-48	100	102	B1HK50		4/4/2006	0.51	µg/kg	U	
299-W15-48	100	102	B1HK52		4/4/2006				
299-W15-48	100	102	B1K8X6	R	4/4/2006				
299-W15-48	100	102	B1K8X7	R	4/4/2006				
299-W15-48	100	102	B1K8X8	R	4/4/2006				
299-W15-48	100	102	B1K8X9	R	4/4/2006				
299-W15-48	103	105	B1HK44	R	4/6/2006	140	µg/kg	U	
299-W15-48	103	105	B1HK45	R	4/6/2006	0.46	µg/kg	U	
299-W15-48	103	105	B1HK47	R	4/6/2006				
299-W15-48	103	105	B1HL19	R	4/6/2006	140	µg/kg	U	
299-W15-48	103	105	B1HL20	R	4/6/2006	0.45	µg/kg	U	
299-W15-48	103	105	B1HL22	R	4/6/2006				
299-W15-48	118.5	120.5	B1HK40		4/13/2006	0.44	µg/kg	U	

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Xylenes (total) (1330-20-7)			
						8260			
						Conc'n	Units	Q	VQ
299-W15-48	118.5	120.5	B1HK42		4/13/2006				
299-W15-48	118.5	120.5	B1K8Y0	R	4/13/2006				
299-W15-48	118.5	120.5	B1K8Y1	R	4/13/2006				
299-W15-48	118.5	120.5	B1K8Y2	R	4/13/2006				
299-W15-48	118.5	120.5	B1K8Y3	R	4/13/2006				
299-W15-48	118.5	120.5	B1K8Y4	R	4/17/2006				
299-W15-48	118.5	120.5	B1K8Y5	R	4/17/2006				
299-W15-48	118.5	120.5	B1K8Y6	R	4/17/2006				
299-W15-48	118.5	120.5	B1K8Y7	R	4/17/2006				
299-W15-48	118.5	120.5	B1K941		4/17/2006				
299-W15-48	118.5	120.5	B1K942		4/17/2006				
299-W15-48	122.5	124.5	B1HK54		4/18/2006	12	µg/kg	U	
299-W15-48	122.5	124.5	B1HK55		4/18/2006	1.4	µg/kg	U	
299-W15-48	122.5	124.5	B1HK57		4/18/2006				
299-W15-48	122.5	124.5	B1K8Y8	R	4/19/2006				
299-W15-48	122.5	124.5	B1K8Y9	R	4/19/2006				
299-W15-48	122.5	124.5	B1K900	R	4/19/2006				
299-W15-48	122.5	124.5	B1K901	R	4/19/2006				
299-W15-48	128.5	130.5	B1HK59		4/24/2006	12	µg/kg	U	
299-W15-48	128.5	130.5	B1HK60		4/24/2006	1.3	µg/kg	U	
299-W15-48	128.5	130.5	B1HK62		4/24/2006				
299-W15-48	128.5	130.5	B1K902	R	4/25/2006				
299-W15-48	128.5	130.5	B1K903	R	4/25/2006				
299-W15-48	128.5	130.5	B1K904	R	4/25/2006				
299-W15-48	128.5	130.5	B1K905	R	4/25/2006				
299-W15-48	128.5	130.5	B1K937		4/25/2006				
299-W15-48	128.5	130.5	B1K939		4/25/2006				
299-W15-48	131.5	133	B1HK64		4/27/2006	120	µg/kg	U	
299-W15-48	131.5	133	B1HK65		4/27/2006	1.2	µg/kg	U	
299-W15-48	131.5	133	B1HK67		4/27/2006				
299-W15-48	131.5	133	B1K906	R	4/27/2006				
299-W15-48	131.5	133	B1K907	R	4/27/2006				
299-W15-48	131.5	133	B1K908	R	4/27/2006				
299-W15-48	131.5	133	B1K909	R	4/27/2006				
299-W15-48	131.5	133	B1K934		4/27/2006				
299-W15-48	131.5	133	B1K935		4/27/2006				
299-W15-48	131.5	133	B1K936		4/27/2006				

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Xylenes (total) (1330-20-7)			
						8260			
						Conc'n	Units	Q	VQ
299-W15-48	135	140	B1HK74	S	5/3/2006	190	µg/kg	U	
299-W15-48	135	140	B1HK75	S	5/3/2006	3	µg/kg	U	
299-W15-48	135	140	B1HK77	S	5/3/2006				
299-W15-48	135	140	B1HL24	S	5/3/2006	0.43	µg/kg	U	
299-W15-48	135	140	B1HL26	S	5/3/2006				
299-W15-48	139.5	140	B1J7W6		5/8/2006				
299-W15-48	135.3	140	B1K910	R	5/4/2006				
299-W15-48	135.3	140	B1K911	R	5/4/2006				
299-W15-48	135.3	140	B1K912	R	5/4/2006				
299-W15-48	135.3	140	B1K913	R	5/4/2006				
299-W15-48	139.5	140	B1K914	R	5/8/2006				
299-W15-48	139.5	140	B1K915	R	5/8/2006				
299-W15-48	139.5	140	B1K916	R	5/8/2006				
299-W15-48	139.5	140	B1K931		5/8/2006				
299-W15-48	135.3	140	B1K933		5/4/2006				
299-W15-48	139.5	145.5	B1J7Y1		5/9/2006				
299-W15-48	139.5	145.5	B1J7Y7		5/11/2006				
299-W15-48	139.5	145.5	B1K918	R	5/9/2006				
299-W15-48	139.5	145.5	B1K919	R	5/9/2006				
299-W15-48	139.5	145.5	B1K920	R	5/9/2006				
299-W15-48	139.5	145.5	B1K921	R	5/9/2006				
299-W15-48	139.5	145.5	B1K922	R	5/11/2006				
299-W15-48	139.5	145.5	B1K923	R	5/11/2006				
299-W15-48	139.5	145.5	B1K924	R	5/11/2006				
299-W15-48	139.5	145.5	B1K925	R	5/11/2006				
299-W15-48	139.5	145.5	B1K926		5/11/2006				
299-W15-48	139.5	145.5	B1K928		5/9/2006				
299-W15-48	139.5	145.5	B1K929		5/9/2006				
299-W15-48	99999	99999	B1K927		5/11/2006				
299-W15-48	99999	99999	B1K930		5/8/2006				
299-W15-48	99999	99999	B1K932		5/4/2006				
299-W15-48	99999	99999	B1K938		4/25/2006				
299-W15-48	99999	99999	B1K940		4/19/2006				
			B1HKY0	EB	4/19/2006	1	µg/L	U	
	99999	99999	B1HK26	FB	3/20/2006	130	µg/kg	U	
	99999	99999	B1HK36	FB	3/27/2006	130	µg/kg	U	
	99999	99999	B1HK51	FB	4/4/2006	130	µg/kg	U	

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Table B-12. Volatile Organic Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (62 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Xylenes (total) (1330-20-7)			
						8260			
						Conc'n	Units	Q	VQ
	99999	99999	B1HK56	FB	4/18/2006	250	$\mu\text{g}/\text{kg}$	U	
	99999	99999	B1HK61	FB	4/24/2006	250	$\mu\text{g}/\text{kg}$	U	
	99999	99999	B1HK66	FB	4/27/2006	130	$\mu\text{g}/\text{kg}$	U	
	99999	99999	B1HK76	FB	5/3/2006	320	$\mu\text{g}/\text{kg}$	U	
	99999	99999	B1HKB2	FB	3/13/2006	130	$\mu\text{g}/\text{kg}$	U	
	99999	99999	B1HL21	FB	4/6/2006	130	$\mu\text{g}/\text{kg}$	U	
	99999	99999	B1HL25	FB	5/3/2006	130	$\mu\text{g}/\text{kg}$	U	
			B1HKY9	TB	4/19/2006	1	$\mu\text{g}/\text{L}$	U	
			B1HL00	TB	4/25/2006	1	$\mu\text{g}/\text{L}$	U	
			B1HL01	TB	4/27/2006	1	$\mu\text{g}/\text{L}$	U	
			B1HL03	TB	5/3/2006	1	$\mu\text{g}/\text{L}$	U	
			B1HL07	TB	3/22/2006	0.86	$\mu\text{g}/\text{L}$	U	
			B1HL10	TB	4/6/2006	0.86	$\mu\text{g}/\text{L}$	U	
					TQL ($\mu\text{g}/\text{kg}$)	5			

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Table B-13. Physical Property Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Percent passing 3 inch sieve (PAS3IN)				Percent passing 1.5 inch sieve (PAS1.5IN)				Percent passing 3/4 inch sieve (PAS3/4IN)				Percent passing 3/8 inch sieve (PAS3/8IN)			
							D422				D422				D422				D422			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	99999	0.5	B1HL28		2/14/2006	STLSL																
299-W15-48	52.5	54.5	B1HKB1		3/13/2006	STLSL																
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	STLSL																
299-W15-48	67	69	B1HK24		3/20/2006	STLSL																
299-W15-48	67	69	B1HK25		3/20/2006	STLSL																
299-W15-48	67	69	B1HK27		3/20/2006	STLSL																
299-W15-48	70	72	B1HK29		3/22/2006	STLSL																
299-W15-48	70	72	B1HK30		3/22/2006	STLSL																
299-W15-48	70	72	B1HK32		3/22/2006	STLSL																
299-W15-48	73	75	B1HK34		3/27/2006	STLSL																
299-W15-48	73	75	B1HK35		3/27/2006	STLSL																
299-W15-48	100	102	B1HK49		4/4/2006	STLSL																
299-W15-48	100	102	B1HK50		4/4/2006	STLSL																
299-W15-48	100	102	B1HK52		4/4/2006	STLSL																
299-W15-48	100	102	B1HK52		4/4/2006	SHAW	100	%		100	%		100	%		100	%					
299-W15-48	103	105	B1HK44	R	4/6/2006	STLSL																
299-W15-48	103	105	B1HK45	R	4/6/2006	STLSL																
299-W15-48	103	105	B1HK47	R	4/6/2006	STLSL																
299-W15-48	103	105	B1HL19	R	4/6/2006	STLSL																
299-W15-48	103	105	B1HL20	R	4/6/2006	STLSL																
299-W15-48	103	105	B1HL22	R	4/6/2006	STLSL																
299-W15-48	118.5	120.5	B1HK40		4/13/2006	STLSL																
299-W15-48	118.5	120.5	B1HK42		4/13/2006	STLSL																
299-W15-48	122.5	124.5	B1HK57		4/18/2006	STLSL																
299-W15-48	122.5	124.5	B1HK57		4/18/2006	SHAW	100	%		100	%		100	%		100	%					
299-W15-48	128.5	130.5	B1HK62		4/24/2006	STLSL																
299-W15-48	128.5	130.5	B1HK62		4/24/2006	SHAW	100	%		100	%		100	%		100	%					

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Table B-13. Physical Property Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Percent passing 3 inch sieve (PAS3IN)				Percent passing 1.5 inch sieve (PAS1.5IN)				Percent passing 3/4 inch sieve (PAS3/4IN)				Percent passing 3/8 inch sieve (PAS3/8IN)			
							D422				D422				D422				D422			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	131.5	133	B1HK67		4/27/2006	STLSL																
299-W15-48	131.5	133	B1HK67		4/27/2006	SHAW	100	%			100	%			86	%			77.9	%		
299-W15-48	135	140	B1HK77	S	5/3/2006	STLSL																
299-W15-48	135	140	B1HK77	S	5/3/2006	SHAW																
299-W15-48	135	140	B1HL23	S	5/3/2006	STLSL																
299-W15-48	135	140	B1HL24	S	5/3/2006	STLSL																
299-W15-48	135	140	B1HL26	S	5/3/2006	STLSL																
299-W15-48	135	140	B1HL26	S	5/3/2006	RLNP																
			B1HKY0	EB	4/19/2006	WSCF																

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Table B-13. Physical Property Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Percent passing No.4 sieve (PAS#4)				Percent passing No.10 sieve (PAS#10)				Percent passing No.20 sieve (PAS#20)				Percent passing No.40 sieve (PAS#40)			
						D422				D422				D422				D422			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	99999	0.5	B1HL28		2/14/2006																
299-W15-48	52.5	54.5	B1HKB1		3/13/2006																
299-W15-48	52.5	54.5	B1HKB3		3/13/2006																
299-W15-48	67	69	B1HK24		3/20/2006																
299-W15-48	67	69	B1HK25		3/20/2006																
299-W15-48	67	69	B1HK27		3/20/2006																
299-W15-48	70	72	B1HK29		3/22/2006																
299-W15-48	70	72	B1HK30		3/22/2006																
299-W15-48	70	72	B1HK32		3/22/2006																
299-W15-48	73	75	B1HK34		3/27/2006																
299-W15-48	73	75	B1HK35		3/27/2006																
299-W15-48	100	102	B1HK49		4/4/2006																
299-W15-48	100	102	B1HK50		4/4/2006																
299-W15-48	100	102	B1HK52		4/4/2006																
299-W15-48	100	102	B1HK52		4/4/2006	99.9	%			99.3	%			93.4	%			82.5	%		
299-W15-48	103	105	B1HK44	R	4/6/2006																
299-W15-48	103	105	B1HK45	R	4/6/2006																
299-W15-48	103	105	B1HK47	R	4/6/2006																
299-W15-48	103	105	B1HL19	R	4/6/2006																
299-W15-48	103	105	B1HL20	R	4/6/2006																
299-W15-48	103	105	B1HL22	R	4/6/2006																
299-W15-48	118.5	120.5	B1HK40		4/13/2006																
299-W15-48	118.5	120.5	B1HK42		4/13/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006	100	%			99.9	%			90.7	%			83.3	%		
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1HK62		4/24/2006	100	%			100	%			99.9	%			99.7	%		

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Table B-13. Physical Property Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Percent passing No.4 sieve (PAS#4)				Percent passing No.10 sieve (PAS#10)				Percent passing No.20 sieve (PAS#20)				Percent passing No.40 sieve (PAS#40)			
						D422				D422				D422				D422			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	131.5	133	B1HK67		4/27/2006	73.5	%			69.9	%			68.2	%			64.5	%		
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HL23	S	5/3/2006																
299-W15-48	135	140	B1HL24	S	5/3/2006																
299-W15-48	135	140	B1HL26	S	5/3/2006																
299-W15-48	135	140	B1HL26	S	5/3/2006																
			B1HKY0	EB	4/19/2006																

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Table B-13. Physical Property Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Percent passing No.60 sieve (PAS#60)				Percent passing No.100 sieve (PAS#100)				Percent passing No.140 sieve (PAS#140)				Percent passing No.200 sieve (PAS#200)			
						D422				D422				D422				D422			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	99999	0.5	B1HL28		2/14/2006																
299-W15-48	52.5	54.5	B1HKB1		3/13/2006																
299-W15-48	52.5	54.5	B1HKB3		3/13/2006																
299-W15-48	67	69	B1HK24		3/20/2006																
299-W15-48	67	69	B1HK25		3/20/2006																
299-W15-48	67	69	B1HK27		3/20/2006																
299-W15-48	70	72	B1HK29		3/22/2006																
299-W15-48	70	72	B1HK30		3/22/2006																
299-W15-48	70	72	B1HK32		3/22/2006																
299-W15-48	73	75	B1HK34		3/27/2006																
299-W15-48	73	75	B1HK35		3/27/2006																
299-W15-48	100	102	B1HK49		4/4/2006																
299-W15-48	100	102	B1HK50		4/4/2006																
299-W15-48	100	102	B1HK52		4/4/2006																
299-W15-48	100	102	B1HK52		4/4/2006	71.8	%			62	%			47.8	%			31.1	%		
299-W15-48	103	105	B1HK44	R	4/6/2006																
299-W15-48	103	105	B1HK45	R	4/6/2006																
299-W15-48	103	105	B1HK47	R	4/6/2006																
299-W15-48	103	105	B1HL19	R	4/6/2006																
299-W15-48	103	105	B1HL20	R	4/6/2006																
299-W15-48	103	105	B1HL22	R	4/6/2006																
299-W15-48	118.5	120.5	B1HK40		4/13/2006																
299-W15-48	118.5	120.5	B1HK42		4/13/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006	77.6	%			72.4	%			69.4	%			66.3	%		
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1HK62		4/24/2006	97.6	%			94.2	%			91.7	%			87.9	%		

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Table B-13. Physical Property Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Percent passing No.60 sieve (PAS#60)				Percent passing No.100 sieve (PAS#100)				Percent passing No.140 sieve (PAS#140)				Percent passing No.200 sieve (PAS#200)			
						D422				D422				D422				D422			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	131.5	133	B1HK67		4/27/2006	60.1	%			53.3	%			49	%			45.2	%		
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HL23	S	5/3/2006																
299-W15-48	135	140	B1HL24	S	5/3/2006																
299-W15-48	135	140	B1HL26	S	5/3/2006																
299-W15-48	135	140	B1HL26	S	5/3/2006																
			B1HKY0	EB	4/19/2006																

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Table B-13. Physical Property Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Bulk density - dry (BULKDENSITY-DRY)				Bulk density - wet (BULKDENSITY-WET)				Cation Exchange Capacity (CEC)				Hydraulic Conductivity (HYDCON)			
						D2937				D2937				9081				D5084			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	99999	0.5	B1HL28		2/14/2006																
299-W15-48	52.5	54.5	B1HKB1		3/13/2006																
299-W15-48	52.5	54.5	B1HKB3		3/13/2006								4.8	mEQ/100g	B						
299-W15-48	67	69	B1HK24		3/20/2006																
299-W15-48	67	69	B1HK25		3/20/2006																
299-W15-48	67	69	B1HK27		3/20/2006								4.8	mEQ/100g	B						
299-W15-48	70	72	B1HK29		3/22/2006																
299-W15-48	70	72	B1HK30		3/22/2006																
299-W15-48	70	72	B1HK32		3/22/2006								7	mEQ/100g							
299-W15-48	73	75	B1HK34		3/27/2006																
299-W15-48	73	75	B1HK35		3/27/2006																
299-W15-48	100	102	B1HK49		4/4/2006																
299-W15-48	100	102	B1HK50		4/4/2006																
299-W15-48	100	102	B1HK52		4/4/2006								9.7	mEQ/100g							
299-W15-48	100	102	B1HK52		4/4/2006	1632	kg/m3			1759	kg/m3						0.000043	cm/s			
299-W15-48	103	105	B1HK44	R	4/6/2006																
299-W15-48	103	105	B1HK45	R	4/6/2006																
299-W15-48	103	105	B1HK47	R	4/6/2006								9.1	mEQ/100g							
299-W15-48	103	105	B1HL19	R	4/6/2006																
299-W15-48	103	105	B1HL20	R	4/6/2006																
299-W15-48	103	105	B1HL22	R	4/6/2006								10.2	mEQ/100g							
299-W15-48	118.5	120.5	B1HK40		4/13/2006																
299-W15-48	118.5	120.5	B1HK42		4/13/2006								11.4	mEQ/100g							
299-W15-48	122.5	124.5	B1HK57		4/18/2006								13.1	mEQ/100g							
299-W15-48	122.5	124.5	B1HK57		4/18/2006	1260	kg/m3			1410	kg/m3						0.000031	cm/s			
299-W15-48	128.5	130.5	B1HK62		4/24/2006								5	mEQ/100g							
299-W15-48	128.5	130.5	B1HK62		4/24/2006	1600	kg/m3			1909	kg/m3						0.000029	cm/s			

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Table B-13. Physical Property Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Percent moisture (dry sample) (%MOISTURE-D)				Percent moisture (wet sample) (%MOISTURE)				Percent Solids (%SOLIDS) Gravimetry				pH Measurement (PH) 150.1				
						D2216				D2216				Gravimetry				150.1				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
299-W15-48	99999	0.5	B1HL28		2/14/2006																	
299-W15-48	52.5	54.5	B1HKB1		3/13/2006																	
299-W15-48	52.5	54.5	B1HKB3		3/13/2006																	
299-W15-48	67	69	B1HK24		3/20/2006																	
299-W15-48	67	69	B1HK25		3/20/2006																	
299-W15-48	67	69	B1HK27		3/20/2006																	
299-W15-48	70	72	B1HK29		3/22/2006																	
299-W15-48	70	72	B1HK30		3/22/2006																	
299-W15-48	70	72	B1HK32		3/22/2006																	
299-W15-48	73	75	B1HK34		3/27/2006																	
299-W15-48	73	75	B1HK35		3/27/2006																	
299-W15-48	100	102	B1HK49		4/4/2006																	
299-W15-48	100	102	B1HK50		4/4/2006																	
299-W15-48	100	102	B1HK52		4/4/2006																	
299-W15-48	100	102	B1HK52		4/4/2006																	
299-W15-48	103	105	B1HK44	R	4/6/2006																	
299-W15-48	103	105	B1HK45	R	4/6/2006																	
299-W15-48	103	105	B1HK47	R	4/6/2006																	
299-W15-48	103	105	B1HL19	R	4/6/2006																	
299-W15-48	103	105	B1HL20	R	4/6/2006																	
299-W15-48	103	105	B1HL22	R	4/6/2006																	
299-W15-48	118.5	120.5	B1HK40		4/13/2006																	
299-W15-48	118.5	120.5	B1HK42		4/13/2006																	
299-W15-48	122.5	124.5	B1HK57		4/18/2006																	
299-W15-48	122.5	124.5	B1HK57		4/18/2006	20.9	%			17.3	%											
299-W15-48	128.5	130.5	B1HK62		4/24/2006																	
299-W15-48	128.5	130.5	B1HK62		4/24/2006	24.7	%			19.8	%			80.2	%							

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Table B-13. Physical Property Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Specific Gravity (SPECGVTY)				Total solids (TS)			
						D854				160.3			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	99999	0.5	B1HL28		2/14/2006					6.7	%		
299-W15-48	52.5	54.5	B1HKB1		3/13/2006					4.5	%		
299-W15-48	52.5	54.5	B1HKB3		3/13/2006					4.5	%		
299-W15-48	67	69	B1HK24		3/20/2006					5.7	%		
299-W15-48	67	69	B1HK25		3/20/2006					2.5	%		
299-W15-48	67	69	B1HK27		3/20/2006					5.6	%		
299-W15-48	70	72	B1HK29		3/22/2006					1.9	%		
299-W15-48	70	72	B1HK30		3/22/2006					1.9	%		
299-W15-48	70	72	B1HK32		3/22/2006					5.6	%		
299-W15-48	73	75	B1HK34		3/27/2006					2.3	%		
299-W15-48	73	75	B1HK35		3/27/2006					2.3	%		
299-W15-48	100	102	B1HK49		4/4/2006					9.6	%		
299-W15-48	100	102	B1HK50		4/4/2006					9.6	%		
299-W15-48	100	102	B1HK52		4/4/2006					7.4	%		
299-W15-48	100	102	B1HK52		4/4/2006	2.7394	unitless						
299-W15-48	103	105	B1HK44	R	4/6/2006					11	%		
299-W15-48	103	105	B1HK45	R	4/6/2006					10.8	%		
299-W15-48	103	105	B1HK47	R	4/6/2006					6.3	%		
299-W15-48	103	105	B1HL19	R	4/6/2006					9	%		
299-W15-48	103	105	B1HL20	R	4/6/2006					9	%		
299-W15-48	103	105	B1HL22	R	4/6/2006					7.9	%		
299-W15-48	118.5	120.5	B1HK40		4/13/2006					7.7	%		
299-W15-48	118.5	120.5	B1HK42		4/13/2006					8.6	%		
299-W15-48	122.5	124.5	B1HK57		4/18/2006					17.4	%		
299-W15-48	122.5	124.5	B1HK57		4/18/2006	2.8049	unitless						
299-W15-48	128.5	130.5	B1HK62		4/24/2006					19.6	%		
299-W15-48	128.5	130.5	B1HK62		4/24/2006	2.7102	unitless						

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Table B-13. Physical Property Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Specific Gravity (SPECGVTY)				Total solids (TS)			
						D854				160.3			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	131.5	133	B1HK67		4/27/2006					13.3	%		
299-W15-48	131.5	133	B1HK67		4/27/2006	2.732	unitless						
299-W15-48	135	140	B1HK77	S	5/3/2006					4.2	%		
299-W15-48	135	140	B1HK77	S	5/3/2006								
299-W15-48	135	140	B1HL23	S	5/3/2006					73.2	%		
299-W15-48	135	140	B1HL24	S	5/3/2006					5	%		
299-W15-48	135	140	B1HL26	S	5/3/2006					6.2	%		
299-W15-48	135	140	B1HL26	S	5/3/2006								
			B1HKY0	EB	4/19/2006								

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Table B-14. Wet Chemistry Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Ammonia (7664-41-7)				Ammonium ion (14798-03-9)				Nitrate (14797-55-8)				Nitrate (14797-55-8)			
							350.1				300.7				300				9056			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	STLSL	3400	µg/kg	B									124000	µg/kg			
299-W15-48	67	69	B1HK27		3/20/2006	STLSL	2800	µg/kg	U									487	µg/kg	U		
299-W15-48	70	72	B1HK32		3/22/2006	STLSL	2800	µg/kg	U									62400	µg/kg			
299-W15-48	100	102	B1HK52		4/4/2006	STLSL	11200	µg/kg	U									6990000	µg/kg			
299-W15-48	103	105	B1HK47	R	4/6/2006	STLSL	11100	µg/kg	U									6820000	µg/kg			
299-W15-48	103	105	B1HL22	R	4/6/2006	STLSL	11300	µg/kg	U									4830000	µg/kg			
299-W15-48	118.5	120.5	B1HK42		4/13/2006	STLSL	2800	µg/kg	U									478000	µg/kg			
299-W15-48	122.5	124.5	B1HK57		4/18/2006	STLSL																
299-W15-48	122.5	124.5	B1HK57		4/18/2006	WSCF				18300	µg/kg			828000	µg/kg							
299-W15-48	128.5	130.5	B1HK62		4/24/2006	STLSL																
299-W15-48	128.5	130.5	B1HK62		4/24/2006	WSCF				3710	µg/kg			695000	µg/kg							
299-W15-48	131.5	133	B1HK67		4/27/2006	WSCF				4970	µg/kg			452000	µg/kg							
299-W15-48	131.5	133	B1HK67		4/27/2006	STLSL																
299-W15-48	135	140	B1HK77	S	5/3/2006	STLSL																
299-W15-48	135	140	B1HK77	S	5/3/2006	WSCF				21500	µg/kg			61100	µg/kg							
299-W15-48	135	140	B1HL26	S	5/3/2006	RLNP																
299-W15-48	135	140	B1HL26	S	5/3/2006	STLSL	2800	µg/kg	U									79700	µg/kg			
			B1HKY0	EB	4/19/2006	WSCF				14.2	µg/L	B		79.7	µg/L	U						
			B1HKY0	EB	4/19/2006	STLSL																
						TQL (µg/kg)				(a)				(a)				(a)			(a)	

(a) Refer to appropriate "Nitrogen in ..." column.

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Table B-14. Wet Chemistry Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Nitrite (14797-65-0)				Nitrite (14797-65-0)				Nitrogen in Nitrite and Nitrate (NO ₂ +NO ₃ -N)				Nitrogen in Nitrite and Nitrate (NO ₂ +NO ₃ -N)			
						300				9056				353.1				353.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006					210	µg/kg	U		23000	µg/kg						
299-W15-48	67	69	B1HK27		3/20/2006					213	µg/kg	U		770	µg/kg						
299-W15-48	70	72	B1HK32		3/22/2006					213	µg/kg	U		15600	µg/kg						
299-W15-48	100	102	B1HK52		4/4/2006					141	µg/kg	U		1670000	µg/kg						
299-W15-48	103	105	B1HK47	R	4/6/2006					141	µg/kg	U		1520000	µg/kg						
299-W15-48	103	105	B1HL22	R	4/6/2006					141	µg/kg	U		1290000	µg/kg						
299-W15-48	118.5	120.5	B1HK42		4/13/2006					3940	µg/kg			129000	µg/kg						
299-W15-48	122.5	124.5	B1HK57		4/18/2006									236000	µg/kg						
299-W15-48	122.5	124.5	B1HK57		4/18/2006	1610	µg/kg	U													
299-W15-48	128.5	130.5	B1HK62		4/24/2006									205000	µg/kg						
299-W15-48	128.5	130.5	B1HK62		4/24/2006	1610	µg/kg	U													
299-W15-48	131.5	133	B1HK67		4/27/2006	1610	µg/kg	U													
299-W15-48	131.5	133	B1HK67		4/27/2006									126000	µg/kg						
299-W15-48	135	140	B1HK77	S	5/3/2006									21700	µg/kg						
299-W15-48	135	140	B1HK77	S	5/3/2006	1610	µg/kg	U													
299-W15-48	135	140	B1HL26	S	5/3/2006												18900	µg/kg	D		
299-W15-48	135	140	B1HL26	S	5/3/2006					1050	µg/kg			26000	µg/kg						
			B1HKY0	EB	4/19/2006	32.8	µg/L	U													
			B1HKY0	EB	4/19/2006									3.1	µg/L	U					
					TQL (µg/kg)		(a)			(a)				750				750			

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Table B-14. Wet Chemistry Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Chloride (16887-00-6)				Chloride (16887-00-6)				Cyanide (57-12-5)				Fluoride (16984-48-8)			
						300				9056				335.2				300			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006					7000	µg/kg										
299-W15-48	67	69	B1HK27		3/20/2006					21300	µg/kg										
299-W15-48	70	72	B1HK32		3/22/2006					93700	µg/kg										
299-W15-48	100	102	B1HK52		4/4/2006					93200	µg/kg										
299-W15-48	103	105	B1HK47	R	4/6/2006					72600	µg/kg										
299-W15-48	103	105	B1HL22	R	4/6/2006					53100	µg/kg										
299-W15-48	118.5	120.5	B1HK42		4/13/2006					5700	µg/kg	C									
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006	5690	µg/kg	B								35300	µg/kg				
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1HK62		4/24/2006	8260	µg/kg									2000	µg/kg	U			
299-W15-48	131.5	133	B1HK67		4/27/2006	6110	µg/kg	B								3660	µg/kg	B			
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006	6010	µg/kg									6440	µg/kg				
299-W15-48	135	140	B1HL26	S	5/3/2006																
299-W15-48	135	140	B1HL26	S	5/3/2006					4300	µg/kg										
			B1HKY0	EB	4/19/2006	34	µg/L	U					4	µg/L	U			40	µg/L	U	
			B1HKY0	EB	4/19/2006																
					TQL (µg/kg)		2000				2000			N/A					5000		

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Table B-14. Wet Chemistry Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Fluoride (16984-48-8)				Phosphate (14265-44-2)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						9056				300				9056				300			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	2300	µg/kg							2500	µg/kg	B					
299-W15-48	67	69	B1HK27		3/20/2006	1700	µg/kg							200	µg/kg	U					
299-W15-48	70	72	B1HK32		3/22/2006	5800	µg/kg							200	µg/kg	U					
299-W15-48	100	102	B1HK52		4/4/2006	18900	µg/kg							200	µg/kg	U					
299-W15-48	103	105	B1HK47	R	4/6/2006	17400	µg/kg							200	µg/kg	U					
299-W15-48	103	105	B1HL22	R	4/6/2006	15600	µg/kg							200	µg/kg	U					
299-W15-48	118.5	120.5	B1HK42		4/13/2006	51400	µg/kg							200	µg/kg	U					
299-W15-48	122.5	124.5	B1HK57		4/18/2006																
299-W15-48	122.5	124.5	B1HK57		4/18/2006				12000	µg/kg	U						10600	µg/kg	B		
299-W15-48	128.5	130.5	B1HK62		4/24/2006																
299-W15-48	128.5	130.5	B1HK62		4/24/2006				12000	µg/kg	U						11400	µg/kg	B		
299-W15-48	131.5	133	B1HK67		4/27/2006				12000	µg/kg	U						38300	µg/kg			
299-W15-48	131.5	133	B1HK67		4/27/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006																
299-W15-48	135	140	B1HK77	S	5/3/2006				12000	µg/kg	U						28300	µg/kg			
299-W15-48	135	140	B1HL26	S	5/3/2006																
299-W15-48	135	140	B1HL26	S	5/3/2006	11000	µg/kg							3900	µg/kg	B					
			B1HKY0	EB	4/19/2006				239	µg/L	U						130	µg/L	U		
			B1HKY0	EB	4/19/2006																
					TQL (µg/kg)		5000			5000				5000				5000			

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Table B-14. Wet Chemistry Analysis Results for Borehole C3427 (216-Z-9, 299-W15-48) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sulfate (14808-79-8)				Sulfide (18496-25-8)					
						9056				9030					
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ		
299-W15-48	52.5	54.5	B1HKB3		3/13/2006	156000	µg/kg								
299-W15-48	67	69	B1HK27		3/20/2006	164000	µg/kg								
299-W15-48	70	72	B1HK32		3/22/2006	255000	µg/kg								
299-W15-48	100	102	B1HK52		4/4/2006	148000	µg/kg								
299-W15-48	103	105	B1HK47	R	4/6/2006	81600	µg/kg								
299-W15-48	103	105	B1HL22	R	4/6/2006	63300	µg/kg								
299-W15-48	118.5	120.5	B1HK42		4/13/2006	82900	µg/kg								
299-W15-48	122.5	124.5	B1HK57		4/18/2006										
299-W15-48	122.5	124.5	B1HK57		4/18/2006										
299-W15-48	128.5	130.5	B1HK62		4/24/2006										
299-W15-48	128.5	130.5	B1HK62		4/24/2006										
299-W15-48	131.5	133	B1HK67		4/27/2006										
299-W15-48	131.5	133	B1HK67		4/27/2006										
299-W15-48	135	140	B1HK77	S	5/3/2006										
299-W15-48	135	140	B1HK77	S	5/3/2006										
299-W15-48	135	140	B1HL26	S	5/3/2006										
299-W15-48	135	140	B1HL26	S	5/3/2006	33500	µg/kg								
			B1HKY0	EB	4/19/2006										
			B1HKY0	EB	4/19/2006					310	µg/L	U			
					TQL (µg/kg)	5000							N/A		

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Table B-15. Metal Analysis Results for Borehole C4545 (216-A-8) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Barium (7440-39-3)				Bismuth (7440-69-9)				Cadmium (7440-43-9)				Cadmium (7440-43-9)				Chromium (7440-47-3)			
						6010				6010				200.8				6010				200.8			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005																				
C4545	19	21.5	B1D9Y4		6/8/2005	65100	μg/kg			102000	μg/kg					130	μg/kg	U							
C4545	22.5	25	B1D9Y5		6/8/2005																				
C4545	22.5	25	B1D9Y5		6/8/2005	85100	μg/kg			94300	μg/kg					130	μg/kg	U							
C4545	27.5	30	B1D7C7	S	6/13/2005																				
C4545	27.5	30	B1D7C7	S	6/13/2005					1100	μg/kg	U		157	μg/kg							4620	μg/kg		
C4545	27.5	30	B1D7C8	S	6/13/2005	88600	μg/kg			97500	μg/kg					140	μg/kg	U							
C4545	27.5	30	B1D7C8	S	6/13/2005																				
C4545	49	51.5	B1D7C9	R	6/14/2005																				
C4545	49	51.5	B1D7C9	R	6/14/2005					1100	μg/kg	U		195	μg/kg							7800	μg/kg		
C4545	49	51.5	B1D7D0	R	6/14/2005																				
C4545	49	51.5	B1D7D0	R	6/14/2005					1100	μg/kg	U		118	μg/kg							6740	μg/kg		
C4545	104	106.5	B1D992		6/23/2005					1090	μg/kg	U		240	μg/kg							6060	μg/kg		
C4545	104	106.5	B1D992		6/23/2005																				
C4545	178	180.5	B1D993		6/27/2005					1100	μg/kg	U		122	μg/kg							41800	μg/kg		
C4545	178	180.5	B1D993		6/27/2005																				
C4545	234	236.5	B1D994		6/29/2005																				
C4545	234	236.5	B1D994		6/29/2005					1080	μg/kg	U		104	μg/kg	U						10200	μg/kg		
C4545	262	264.5	B1D995		6/30/2005																				
C4545	262	264.5	B1D995		6/30/2005					1080	μg/kg	U		105	μg/kg	U						5830	μg/kg		
			B1D7F1	EB	6/7/2005					22	μg/L	U		0.1	μg/L	U					4	μg/L	U		
					TQL (μg/kg)					500				N/R							500				
																					500				
																						1000			

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Table B-15. Metal Analysis Results for Borehole C4545 (216-A-8) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lead (7439-92-1)				Mercury (7439-97-6)				Mercury (7439-97-6)				Nickel (7440-02-0)				Nickel (7440-02-0)				
						6010				200.8				7471				200.8				6010				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n
C4545	19	21.5	B1D9Y4		6/8/2005																					
C4545	19	21.5	B1D9Y4		6/8/2005	1900	µg/kg	C						300	µg/kg									6100	µg/kg	
C4545	22.5	25	B1D9Y5		6/8/2005																					
C4545	22.5	25	B1D9Y5		6/8/2005	1500	µg/kg	C						7	µg/kg	U								4900	µg/kg	
C4545	27.5	30	B1D7C7	S	6/13/2005																					
C4545	27.5	30	B1D7C7	S	6/13/2005				106	µg/kg	U															
C4545	27.5	30	B1D7C8	S	6/13/2005	3000	µg/kg	C						8	µg/kg	U								7000	µg/kg	
C4545	27.5	30	B1D7C8	S	6/13/2005																					
C4545	49	51.5	B1D7C9	R	6/14/2005																					
C4545	49	51.5	B1D7C9	R	6/14/2005				105	µg/kg	U													9620	µg/kg	
C4545	49	51.5	B1D7D0	R	6/14/2005																					
C4545	49	51.5	B1D7D0	R	6/14/2005				103	µg/kg	U													30600	µg/kg	
C4545	104	106.5	B1D992		6/23/2005				102	µg/kg	U													7110	µg/kg	
C4545	104	106.5	B1D992		6/23/2005																					
C4545	178	180.5	B1D993		6/27/2005				119	µg/kg														25400	µg/kg	
C4545	178	180.5	B1D993		6/27/2005																					
C4545	234	236.5	B1D994		6/29/2005																					
C4545	234	236.5	B1D994		6/29/2005				104	µg/kg	U													12700	µg/kg	
C4545	262	264.5	B1D995		6/30/2005																					
C4545	262	264.5	B1D995		6/30/2005				105	µg/kg	U													3890	µg/kg	
			B1D7F1	EB	6/7/2005				0.1	µg/L	U													0.128	µg/L	
					TQL (µg/kg)				1000					200											N/R	
														200											N/R	

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Table B-15. Metal Analysis Results for Borehole C4545 (216-A-8) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Thallium (7440-28-0)				Uranium (7440-61-1)				Uranium (7440-61-1)			
						6010				200.8				KPA			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005									2160	µg/kg		
C4545	19	21.5	B1D9Y4		6/8/2005	2500	µg/kg										
C4545	22.5	25	B1D9Y5		6/8/2005									997	µg/kg		
C4545	22.5	25	B1D9Y5		6/8/2005	2100	µg/kg										
C4545	27.5	30	B1D7C7	S	6/13/2005												
C4545	27.5	30	B1D7C7	S	6/13/2005					450	µg/kg						
C4545	27.5	30	B1D7C8	S	6/13/2005	840	µg/kg	B									
C4545	27.5	30	B1D7C8	S	6/13/2005									1100	µg/kg		
C4545	49	51.5	B1D7C9	R	6/14/2005												
C4545	49	51.5	B1D7C9	R	6/14/2005					410	µg/kg						
C4545	49	51.5	B1D7D0	R	6/14/2005												
C4545	49	51.5	B1D7D0	R	6/14/2005					370	µg/kg						
C4545	104	106.5	B1D992		6/23/2005					400	µg/kg						
C4545	104	106.5	B1D992		6/23/2005												
C4545	178	180.5	B1D993		6/27/2005					460	µg/kg						
C4545	178	180.5	B1D993		6/27/2005												
C4545	234	236.5	B1D994		6/29/2005												
C4545	234	236.5	B1D994		6/29/2005					300	µg/kg						
C4545	262	264.5	B1D995		6/30/2005												
C4545	262	264.5	B1D995		6/30/2005					180	µg/kg						
			B1D7F1	EB	6/7/2005					0.1	µg/L	U					
					TQL (µg/kg)					N/R				N/R			N/R

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Table B-16. General Chemistry Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid) (93-76-5)				2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex (93-72-1)				2,4-D(2,4-Dichlorophenoxyacetic acid) (94-75-7)				2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid) (94-82-6)							
							8151				8151				8151				8151							
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ				
C4545	99999	1.5	B1D7C5		6/2/2005	RLNP	17	µg/kg	U			17	µg/kg	U			35	µg/kg	U			170	µg/kg	U		
C4545	19	21.5	B1D9Y4		6/8/2005	STLSL																				
C4545	22.5	25	B1D9Y5		6/8/2005	STLSL																				
C4545	27.5	30	B1D7C7	S	6/13/2005	WSCF																				
C4545	27.5	30	B1D7C7	S	6/13/2005	SHAW																				
C4545	27.5	30	B1D7C7	S	6/13/2005	RLNP																				
C4545	27.5	30	B1D7C8	S	6/13/2005	STLSL																				
C4545	49	51.5	B1D7C9	R	6/14/2005	WSCF																				
C4545	49	51.5	B1D7C9	R	6/14/2005	SHAW																				
C4545	49	51.5	B1D7C9	R	6/14/2005	RLNP																				
C4545	49	51.5	B1D7D0	R	6/14/2005	WSCF																				
C4545	49	51.5	B1D7D0	R	6/14/2005	RLNP																				
C4545	104	106.5	B1D992		6/23/2005	SHAW																				
C4545	104	106.5	B1D992		6/23/2005	RLNP																				
C4545	104	106.5	B1D992		6/23/2005	WSCF																				
C4545	178	180.5	B1D993		6/27/2005	WSCF																				
C4545	178	180.5	B1D993		6/27/2005	RLNP																				
C4545	178	180.5	B1D993		6/27/2005	SHAW																				
C4545	234	236.5	B1D994		6/29/2005	RLNP																				
C4545	234	236.5	B1D994		6/29/2005	SHAW																				
C4545	234	236.5	B1D994		6/29/2005	WSCF																				
C4545	262	264.5	B1D995		6/30/2005	SHAW																				
C4545	262	264.5	B1D995		6/30/2005	RLNP																				
C4545	262	264.5	B1D995		6/30/2005	WSCF																				
			B1D7F1	EB	6/7/2005	WSCF																				
					TQL (µg/kg)																					

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Table B-16. General Chemistry Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	4,4"-DDD (Dichlorodiphenyldichloroethane) (72-54-8)				4,4"-DDE (Dichlorodiphenyldichloroethylene) (72-55-9)				4,4"-DDT (Dichlorodiphenyltrichloroethane) (50-29-3)				Aldrin (309-00-2)			
						8081				8081				8081				8081			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	99999	1.5	B1D7C5		6/2/2005	3.5	µg/kg	U		3.5	µg/kg	U		3.5	µg/kg	U		1.7	µg/kg	U	
C4545	19	21.5	B1D9Y4		6/8/2005																
C4545	22.5	25	B1D9Y5		6/8/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C8	S	6/13/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7D0	R	6/14/2005																
C4545	49	51.5	B1D7D0	R	6/14/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	178	180.5	B1D993		6/27/2005																
C4545	178	180.5	B1D993		6/27/2005																
C4545	178	180.5	B1D993		6/27/2005																
C4545	234	236.5	B1D994		6/29/2005																
C4545	234	236.5	B1D994		6/29/2005																
C4545	234	236.5	B1D994		6/29/2005																
C4545	262	264.5	B1D995		6/30/2005																
C4545	262	264.5	B1D995		6/30/2005																
C4545	262	264.5	B1D995		6/30/2005																
			B1D7F1	EB	6/7/2005																
TQL (µg/kg)						Not listed				Not listed				Not listed				Not listed			

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Table B-16. General Chemistry Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Aroclor-1232 (11141-16-5)				Aroclor-1242 (53469-21-9)				Aroclor-1248 (12672-29-6)				Aroclor-1254 (11097-69-1)			
						8082				8082				8082				8082			
						Conc'n	Units	Q	VQ												
C4545	99999	1.5	B1D7C5		6/2/2005																
C4545	19	21.5	B1D9Y4		6/8/2005	4.7	µg/kg	U		4.7	µg/kg	U		4.7	µg/kg	U		4.8	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	4.7	µg/kg	U		4.7	µg/kg	U		4.7	µg/kg	U		4.8	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005	13	µg/kg	U													
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C8	S	6/13/2005	4.9	µg/kg	U		4.9	µg/kg	U		4.9	µg/kg	U		5	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	13	µg/kg	U													
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7D0	R	6/14/2005	13	µg/kg	U													
C4545	49	51.5	B1D7D0	R	6/14/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	104	106.5	B1D992		6/23/2005	13	µg/kg	U													
C4545	178	180.5	B1D993		6/27/2005	10	µg/kg	U													
C4545	178	180.5	B1D993		6/27/2005																
C4545	178	180.5	B1D993		6/27/2005																
C4545	234	236.5	B1D994		6/29/2005																
C4545	234	236.5	B1D994		6/29/2005																
C4545	234	236.5	B1D994		6/29/2005	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		39	µg/kg		
C4545	262	264.5	B1D995		6/30/2005																
C4545	262	264.5	B1D995		6/30/2005																
C4545	262	264.5	B1D995		6/30/2005	11	µg/kg	U													
			B1D7F1	EB	6/7/2005	0.094	µg/L	U													
					TQL (µg/kg)					16.5				16.5				16.5			

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Table B-16. General Chemistry Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Aroclor-1260 (11096-82-5)				Aroclor-1262 (37324-23-5)				Aroclor-1268 (11100-14-4)				beta-1,2,3,4,5,6- Hexachlorocyclohexan e (beta-BHC) (319-85-7)			
						8082				8082				8082				8081			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	99999	1.5	B1D7C5		6/2/2005													1.7	µg/kg	U	
C4545	19	21.5	B1D9Y4		6/8/2005	4.8	µg/kg	U													
C4545	22.5	25	B1D9Y5		6/8/2005	4.8	µg/kg	U													
C4545	27.5	30	B1D7C7	S	6/13/2005	13	µg/kg	U	13	µg/kg	U	13	µg/kg	U							
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C8	S	6/13/2005	5	µg/kg	U													
C4545	49	51.5	B1D7C9	R	6/14/2005	13	µg/kg	U	13	µg/kg	U	13	µg/kg	U							
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7D0	R	6/14/2005	13	µg/kg	U	13	µg/kg	U	13	µg/kg	U							
C4545	49	51.5	B1D7D0	R	6/14/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	104	106.5	B1D992		6/23/2005	13	µg/kg	U	13	µg/kg	U	13	µg/kg	U							
C4545	178	180.5	B1D993		6/27/2005	10	µg/kg	U	10	µg/kg	U	10	µg/kg	U							
C4545	178	180.5	B1D993		6/27/2005																
C4545	178	180.5	B1D993		6/27/2005																
C4545	234	236.5	B1D994		6/29/2005																
C4545	234	236.5	B1D994		6/29/2005																
C4545	234	236.5	B1D994		6/29/2005	10	µg/kg	U	10	µg/kg	U	10	µg/kg	U							
C4545	262	264.5	B1D995		6/30/2005																
C4545	262	264.5	B1D995		6/30/2005																
C4545	262	264.5	B1D995		6/30/2005	11	µg/kg	U	11	µg/kg	U	11	µg/kg	U							
C4545	262	264.5	B1D995		6/30/2005	0.094	µg/L	U	0.094	µg/L	U	0.094	µg/L	U							
			B1D7F1	EB	6/7/2005	0.094	µg/L	U	0.094	µg/L	U	0.094	µg/L	U							
					TQL (µg/kg)		16.5			16.5			16.5								Not listed

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Table B-16. General Chemistry Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium Carbonate (471-34-1)				Dalapon (75-99-0)				Delta-BHC (319-86-8)				Dicamba (1918-00-9)												
						D4373				8151				8081				8151												
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ									
C4545	99999	1.5	B1D7C5		6/2/2005					170	µg/kg	U					1.7	µg/kg	U					70	µg/kg	U				
C4545	19	21.5	B1D9Y4		6/8/2005																									
C4545	22.5	25	B1D9Y5		6/8/2005																									
C4545	27.5	30	B1D7C7	S	6/13/2005																									
C4545	27.5	30	B1D7C7	S	6/13/2005	0	%	U																						
C4545	27.5	30	B1D7C7	S	6/13/2005																									
C4545	27.5	30	B1D7C8	S	6/13/2005																									
C4545	49	51.5	B1D7C9	R	6/14/2005																									
C4545	49	51.5	B1D7C9	R	6/14/2005	1	%																							
C4545	49	51.5	B1D7C9	R	6/14/2005																									
C4545	49	51.5	B1D7D0	R	6/14/2005																									
C4545	49	51.5	B1D7D0	R	6/14/2005																									
C4545	104	106.5	B1D992		6/23/2005	2	%																							
C4545	104	106.5	B1D992		6/23/2005																									
C4545	104	106.5	B1D992		6/23/2005																									
C4545	178	180.5	B1D993		6/27/2005																									
C4545	178	180.5	B1D993		6/27/2005																									
C4545	178	180.5	B1D993		6/27/2005	1	%																							
C4545	234	236.5	B1D994		6/29/2005																									
C4545	234	236.5	B1D994		6/29/2005	1	%																							
C4545	234	236.5	B1D994		6/29/2005																									
C4545	262	264.5	B1D995		6/30/2005	0	%																							
C4545	262	264.5	B1D995		6/30/2005																									
C4545	262	264.5	B1D995		6/30/2005																									
			B1D7F1	EB	6/7/2005																									
						TQL (µg/kg)				Not listed				Not listed						Not listed										Not listed

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Table B-16. General Chemistry Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dichloroprop (120-36-5)				Dieldrin (60-57-1)				Dinoseb(2-secButyl- 4,6-dinitrophenol) (88-85-7)				Endosulfan I (959-98-8)			
						8151				8081				8151				8081			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	99999	1.5	B1D7C5		6/2/2005	170	µg/kg	U		1.7	µg/kg	U		17	µg/kg	U		1.7	µg/kg	U	
C4545	19	21.5	B1D9Y4		6/8/2005																
C4545	22.5	25	B1D9Y5		6/8/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C8	S	6/13/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7D0	R	6/14/2005																
C4545	49	51.5	B1D7D0	R	6/14/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	178	180.5	B1D993		6/27/2005																
C4545	178	180.5	B1D993		6/27/2005																
C4545	178	180.5	B1D993		6/27/2005																
C4545	234	236.5	B1D994		6/29/2005																
C4545	234	236.5	B1D994		6/29/2005																
C4545	234	236.5	B1D994		6/29/2005																
C4545	262	264.5	B1D995		6/30/2005																
C4545	262	264.5	B1D995		6/30/2005																
C4545	262	264.5	B1D995		6/30/2005																
			B1D7F1	EB	6/7/2005																
					TQL (µg/kg)	Not listed				Not listed				Not listed				Not listed			

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Table B-16. General Chemistry Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Endosulfan II (33213-65-9)				Endosulfan sulfate (1031-07-8)				Endrin (72-20-8)				Endrin aldehyde (7421-93-4)			
						8081				8081				8081				8081			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	99999	1.5	B1D7C5		6/2/2005	3.5	µg/kg	U		3.5	µg/kg	U		3.5	µg/kg	U		3.5	µg/kg	U	
C4545	19	21.5	B1D9Y4		6/8/2005																
C4545	22.5	25	B1D9Y5		6/8/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C8	S	6/13/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7D0	R	6/14/2005																
C4545	49	51.5	B1D7D0	R	6/14/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	178	180.5	B1D993		6/27/2005																
C4545	178	180.5	B1D993		6/27/2005																
C4545	178	180.5	B1D993		6/27/2005																
C4545	234	236.5	B1D994		6/29/2005																
C4545	234	236.5	B1D994		6/29/2005																
C4545	234	236.5	B1D994		6/29/2005																
C4545	262	264.5	B1D995		6/30/2005																
C4545	262	264.5	B1D995		6/30/2005																
C4545	262	264.5	B1D995		6/30/2005																
			B1D7F1	EB	6/7/2005																
					TQL (µg/kg)	Not listed				Not listed				Not listed				Not listed			

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Table B-16. General Chemistry Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Endrin ketone (53494-70-5)				Gamma-BHC (Lindane) (58-89-9)				Gamma-Chlordane (5103-74-2)				Heptachlor (76-44-8)			
						8081				8081				8081				8081			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	99999	1.5	B1D7C5		6/2/2005	3.5	µg/kg	U		1.7	µg/kg	U		1.7	µg/kg	U		1.7	µg/kg	U	
C4545	19	21.5	B1D9Y4		6/8/2005																
C4545	22.5	25	B1D9Y5		6/8/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C8	S	6/13/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7D0	R	6/14/2005																
C4545	49	51.5	B1D7D0	R	6/14/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	178	180.5	B1D993		6/27/2005																
C4545	178	180.5	B1D993		6/27/2005																
C4545	178	180.5	B1D993		6/27/2005																
C4545	234	236.5	B1D994		6/29/2005																
C4545	234	236.5	B1D994		6/29/2005																
C4545	234	236.5	B1D994		6/29/2005																
C4545	262	264.5	B1D995		6/30/2005																
C4545	262	264.5	B1D995		6/30/2005																
C4545	262	264.5	B1D995		6/30/2005																
			B1D7F1	EB	6/7/2005																
TQL (µg/kg)						Not listed				Not listed				Not listed				Not listed			

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Table B-16. General Chemistry Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Heptachlor epoxide (1024-57-3)				Methoxychlor (72-43-5)				Oil and grease (OIL/GREASE)				Oil and grease (OIL/GREASE)				
						8081				8081				413.1				9071				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
C4545	99999	1.5	B1D7C5		6/2/2005	1.7	µg/kg	U		17	µg/kg	U										
C4545	19	21.5	B1D9Y4		6/8/2005															82600	µg/kg	U
C4545	22.5	25	B1D9Y5		6/8/2005															82600	µg/kg	U
C4545	27.5	30	B1D7C7	S	6/13/2005																	
C4545	27.5	30	B1D7C7	S	6/13/2005																	
C4545	27.5	30	B1D7C7	S	6/13/2005									703000	µg/kg	U						
C4545	27.5	30	B1D7C8	S	6/13/2005															86600	µg/kg	U
C4545	49	51.5	B1D7C9	R	6/14/2005																	
C4545	49	51.5	B1D7C9	R	6/14/2005																	
C4545	49	51.5	B1D7C9	R	6/14/2005									679000	µg/kg	U						
C4545	49	51.5	B1D7D0	R	6/14/2005																	
C4545	49	51.5	B1D7D0	R	6/14/2005									680000	µg/kg	U						
C4545	104	106.5	B1D992		6/23/2005																	
C4545	104	106.5	B1D992		6/23/2005															680000	µg/kg	U
C4545	104	106.5	B1D992		6/23/2005																	
C4545	178	180.5	B1D993		6/27/2005																	
C4545	178	180.5	B1D993		6/27/2005															680000	µg/kg	U
C4545	178	180.5	B1D993		6/27/2005																	
C4545	234	236.5	B1D994		6/29/2005															684000	µg/kg	U
C4545	234	236.5	B1D994		6/29/2005																	
C4545	234	236.5	B1D994		6/29/2005																	
C4545	262	264.5	B1D995		6/30/2005																	
C4545	262	264.5	B1D995		6/30/2005															720000	µg/kg	U
C4545	262	264.5	B1D995		6/30/2005																	
			B1D7F1	EB	6/7/2005																	
						TQL (µg/kg)	Not listed				Not listed				200000				200000			

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Table B-15. Metal Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Total petroleum hydrocarbons - diesel range (TPHDIESEL)				Total petroleum hydrocarbons - kerosene range (TPHKEROSENE)				Toxaphene (8001-35-2)				
						WDOE TPH				WDOE TPH				8081				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
C4545	99999	1.5	B1D7C5		6/2/2005									170	µg/kg	U		
C4545	19	21.5	B1D9Y4		6/8/2005	940	µg/kg	U		500	µg/kg	U						
C4545	22.5	25	B1D9Y5		6/8/2005	940	µg/kg	U		500	µg/kg	U						
C4545	27.5	30	B1D7C7	S	6/13/2005													
C4545	27.5	30	B1D7C7	S	6/13/2005	4000	µg/kg	U		4000	µg/kg	U						
C4545	27.5	30	B1D7C8	S	6/13/2005	520	µg/kg	U		520	µg/kg	U						
C4545	49	51.5	B1D7C9	R	6/14/2005													
C4545	49	51.5	B1D7C9	R	6/14/2005	3800	µg/kg	U		3800	µg/kg	U						
C4545	49	51.5	B1D7D0	R	6/14/2005													
C4545	49	51.5	B1D7D0	R	6/14/2005	3800	µg/kg	U		3800	µg/kg	U						
C4545	104	106.5	B1D992		6/23/2005													
C4545	104	106.5	B1D992		6/23/2005	3800	µg/kg	U		3800	µg/kg	U						
C4545	178	180.5	B1D993		6/27/2005													
C4545	178	180.5	B1D993		6/27/2005	3800	µg/kg	U		3800	µg/kg	U						
C4545	234	236.5	B1D994		6/29/2005													
C4545	234	236.5	B1D994		6/29/2005	3800	µg/kg	U		3800	µg/kg	U						
C4545	262	264.5	B1D995		6/30/2005	4000	µg/kg	U		4000	µg/kg	U						
C4545	262	264.5	B1D995		6/30/2005													
			B1D7F1	EB	6/7/2005	71	µg/L	U		71	µg/L	U						
			B1D7F2	EB	6/7/2005													
					TQL (µg/kg)		5000				5000				Not listed			

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Table B-17. Radiochemical Analysis Results for Borehole C4545 (216-A-8) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Americium-241 (14596-10-2)				Americium-241 (14596-10-2)				Americium-241 (14596-10-2)					
							GEA				IX/Plate/AEA				IX/Prec/AEA					
							Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	EBRLNE	1300	pCi/g	U		1300	4.99	pCi/g	U		13				
C4545	22.5	25	B1D9Y5		6/8/2005	EBRLNE	0.14	pCi/g	U		0.14	-0.054	pCi/g	U		0.1				
C4545	27.5	30	B1D7C7	S	6/13/2005	WSCF										0.026	pCi/g	U		0.032
C4545	27.5	30	B1D7C7	S	6/13/2005	EBRLNE	0.74	pCi/g	U		0.74									
C4545	27.5	30	B1D7C8	S	6/13/2005	EBRLNE	1.9	pCi/g	U		1.9	-0.014	pCi/g	U		0.11				
C4545	27.5	30	B1D7C8	S	6/13/2005	STLRL														
C4545	49	51.5	B1D7C9	R	6/14/2005	WSCF										-0.021	pCi/g	U		0.057
C4545	49	51.5	B1D7C9	R	6/14/2005	EBRLNE	0.23	pCi/g	U		0.23									
C4545	49	51.5	B1D7D0	R	6/14/2005	EBRLNE	0.21	pCi/g	U		0.21									
C4545	49	51.5	B1D7D0	R	6/14/2005	WSCF										0.004	pCi/g	U		0.042
C4545	104	106.5	B1D992		6/23/2005	EBRLNE	0.2	pCi/g	U		0.2									
C4545	104	106.5	B1D992		6/23/2005	WSCF										0.009	pCi/g	U		0.06
C4545	178	180.5	B1D993		6/27/2005	EBRLNE	0.21	pCi/g	U		0.21									
C4545	178	180.5	B1D993		6/27/2005	WSCF										0.014	pCi/g	U		0.046
C4545	234	236.5	B1D994		6/29/2005	WSCF										0.008	pCi/g	U		0.047
C4545	234	236.5	B1D994		6/29/2005	EBRLNE	0.41	pCi/g	U		0.41									
C4545	262	264.5	B1D995		6/30/2005	EBRLNE	0.13	pCi/g	U		0.13									
C4545	262	264.5	B1D995		6/30/2005	WSCF										-0.007	pCi/g	U		0.055
			B1D7F1	EB	6/7/2005	EBRLNE														
			B1D7F1	EB	6/7/2005	WSCF										0.039	pCi/L	U		0.15
			B1D7F2	EB	6/7/2005	EBRLNE	15	pCi/L	U		15									
					TQL (pCi/g)				1					1						1

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Table B-17. Radiochemical Analysis Results for Borehole C4545 (216-A-8) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Antimony-125 (14234-35-6)					Carbon-14 (14762-75-5)					Carbon-14 (14762-75-5)				
						GEA					ChemOx/LSC					CombOx/LSC				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
C4545	19	21.5	B1D9Y4		6/8/2005	1800	pCi/g	U		1800					81.4	pCi/g			60	
C4545	22.5	25	B1D9Y5		6/8/2005	0.42	pCi/g	U		0.42					-0.144	pCi/g	U		2.5	
C4545	27.5	30	B1D7C7	S	6/13/2005	-0.418	pCi/g	U		1										
C4545	27.5	30	B1D7C7	S	6/13/2005	4.4	pCi/g	U		4.4					89.7	pCi/g			2.8	
C4545	27.5	30	B1D7C8	S	6/13/2005	2	pCi/g	U		2										
C4545	27.5	30	B1D7C8	S	6/13/2005															
C4545	49	51.5	B1D7C9	R	6/14/2005															
C4545	49	51.5	B1D7C9	R	6/14/2005	0.16	pCi/g	U		0.16					-0.51	pCi/g	U		2.3	
C4545	49	51.5	B1D7D0	R	6/14/2005	0.19	pCi/g	U		0.19					-0.031	pCi/g	U		2.7	
C4545	49	51.5	B1D7D0	R	6/14/2005	-0.006	pCi/g	U		0.029										
C4545	104	106.5	B1D992		6/23/2005	0.19	pCi/g	U		0.19					4.34	pCi/g			2.7	
C4545	104	106.5	B1D992		6/23/2005															
C4545	178	180.5	B1D993		6/27/2005	0.15	pCi/g	U		0.15					-0.162	pCi/g	U		3.6	
C4545	178	180.5	B1D993		6/27/2005															
C4545	234	236.5	B1D994		6/29/2005															
C4545	234	236.5	B1D994		6/29/2005	0.37	pCi/g	U		0.37					0	pCi/g	U		2.6	
C4545	262	264.5	B1D995		6/30/2005	0.11	pCi/g	U		0.11					-1.11	pCi/g	U		3.1	
C4545	262	264.5	B1D995		6/30/2005															
			B1D7F1	EB	6/7/2005															
			B1D7F1	EB	6/7/2005	9.06	pCi/L	U		21										
			B1D7F2	EB	6/7/2005						-4.74	pCi/L	U		39					
					TQL (pCi/g)															
						0.3									1				1	

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Table B-17. Radiochemical Analysis Results for Borehole C4545 (216-A-8) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon-14 (14762-75-5)					Cesium-134 (13967-70-9)					Cesium-137 (10045-97-3)				
						LSC					GEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
C4545	19	21.5	B1D9Y4		6/8/2005						340	pCi/g	U		340	877000	pCi/g		590	
C4545	22.5	25	B1D9Y5		6/8/2005						0.26	pCi/g	U		0.26	1.36	pCi/g		0.17	
C4545	27.5	30	B1D7C7	S	6/13/2005						0.071	pCi/g	U		0.098	2610	pCi/g		0.24	
C4545	27.5	30	B1D7C7	S	6/13/2005						0.16	pCi/g	U		0.16	3730	pCi/g		0.84	
C4545	27.5	30	B1D7C8	S	6/13/2005						0.13	pCi/g	U		0.13	1610	pCi/g		0.53	
C4545	27.5	30	B1D7C8	S	6/13/2005	0.004	pCi/g	U		0.815					764	pCi/g		0.116		
C4545	49	51.5	B1D7C9	R	6/14/2005										0.538	pCi/g		0.01		
C4545	49	51.5	B1D7C9	R	6/14/2005						0.089	pCi/g	U		0.089	0.432	pCi/g		0.078	
C4545	49	51.5	B1D7D0	R	6/14/2005						0.1	pCi/g	U		0.1	0.66	pCi/g		0.11	
C4545	49	51.5	B1D7D0	R	6/14/2005						0.026	pCi/g	U		0.03	0.729	pCi/g		0.01	
C4545	104	106.5	B1D992		6/23/2005						0.11	pCi/g	U		0.11	0.084	pCi/g	U	0.084	
C4545	104	106.5	B1D992		6/23/2005										-0.001	pCi/g	U	0.01		
C4545	178	180.5	B1D993		6/27/2005						0.084	pCi/g	U		0.084	0.06	pCi/g	U	0.06	
C4545	178	180.5	B1D993		6/27/2005										0.004	pCi/g	U	0.009		
C4545	234	236.5	B1D994		6/29/2005										0.003	pCi/g	U	0.013		
C4545	234	236.5	B1D994		6/29/2005						0.22	pCi/g	U		0.22	0.15	pCi/g	U	0.15	
C4545	262	264.5	B1D995		6/30/2005						0.069	pCi/g	U		0.069	0.051	pCi/g	U	0.051	
C4545	262	264.5	B1D995		6/30/2005										0.002	pCi/g	U	0.006		
			B1D7F1	EB	6/7/2005															
			B1D7F1	EB	6/7/2005						-3.74	pCi/L	U		6.8	-0.667	pCi/L	U	7.7	
			B1D7F2	EB	6/7/2005										14	pCi/L	U	14		
					TQL (pCi/g)						1				N/R				0.1	

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Table B-17. Radiochemical Analysis Results for Borehole C4545 (216-A-8) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cobalt-60 (10198-40-0)					Europium-152 (14683-23-9)					Europium-154 (15585-10-1)					
						GEA					GEA					GEA					
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	
C4545	19	21.5	B1D9Y4		6/8/2005	170	pCi/g	U		170	1500	pCi/g	U		1500	520	pCi/g	U		520	
C4545	22.5	25	B1D9Y5		6/8/2005	0.21	pCi/g	U		0.21	0.48	pCi/g	U		0.48	0.6	pCi/g	U		0.6	
C4545	27.5	30	B1D7C7	S	6/13/2005	-0.002	pCi/g	U		0.019	0.071	pCi/g	U		0.93	-0.03	pCi/g	U		0.14	
C4545	27.5	30	B1D7C7	S	6/13/2005	0.088	pCi/g	U		0.088	3.8	pCi/g	U		3.8	0.29	pCi/g	U		0.29	
C4545	27.5	30	B1D7C8	S	6/13/2005	0.038	pCi/g	U		0.038	1.6	pCi/g	U		1.6	0.19	pCi/g	U		0.19	
C4545	27.5	30	B1D7C8	S	6/13/2005	-0.002	pCi/g	U		0.03	0.029	pCi/g	U		0.675	0.003	pCi/g	U		0.098	
C4545	49	51.5	B1D7C9	R	6/14/2005	-0.003	pCi/g	U		0.008	-0.007	pCi/g	U		0.028	0	pCi/g	U		0.029	
C4545	49	51.5	B1D7C9	R	6/14/2005	0.07	pCi/g	U		0.07	0.21	pCi/g	U		0.21	0.23	pCi/g	U		0.23	
C4545	49	51.5	B1D7D0	R	6/14/2005	0.094	pCi/g	U		0.094	0.22	pCi/g	U		0.22	0.28	pCi/g	U		0.28	
C4545	49	51.5	B1D7D0	R	6/14/2005	-0.001	pCi/g	U		0.01	0.003	pCi/g	U		0.031	0.004	pCi/g	U		0.029	
C4545	104	106.5	B1D992		6/23/2005	0.092	pCi/g	U		0.092	0.19	pCi/g	U		0.19	0.27	pCi/g	U		0.27	
C4545	104	106.5	B1D992		6/23/2005	-0.005	pCi/g	U		0.009	-0.006	pCi/g	U		0.029	0.006	pCi/g	U		0.032	
C4545	178	180.5	B1D993		6/27/2005	0.065	pCi/g	U		0.065	0.18	pCi/g	U		0.18	0.2	pCi/g	U		0.2	
C4545	178	180.5	B1D993		6/27/2005	-0.004	pCi/g	U		0.008	-0.011	pCi/g	U		0.026	0.004	pCi/g	U		0.028	
C4545	234	236.5	B1D994		6/29/2005	0.001	pCi/g	U		0.013	-0.005	pCi/g	U		0.038	0.012	pCi/g	U		0.042	
C4545	234	236.5	B1D994		6/29/2005	0.21	pCi/g	U		0.21	0.33	pCi/g	U		0.33	0.64	pCi/g	U		0.64	
C4545	262	264.5	B1D995		6/30/2005	0.058	pCi/g	U		0.058	0.11	pCi/g	U		0.11	0.18	pCi/g	U		0.18	
C4545	262	264.5	B1D995		6/30/2005	0.001	pCi/g	U		0.006	-0.007	pCi/g	U		0.019	-0.008	pCi/g	U		0.02	
			B1D7F1	EB	6/7/2005																
			B1D7F1	EB	6/7/2005	-1.25	pCi/L	U		6.5	-3.92	pCi/L	U		22	-9.17	pCi/L	U		19	
			B1D7F2	EB	6/7/2005	16	pCi/L	U		16	38	pCi/L	U		38	52	pCi/L	U		52	
			TQL (pCi/g)				0.05					0.1					0.1				

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Table B-17. Radiochemical Analysis Results for Borehole C4545 (216-A-8) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Plutonium-238 (13981-16-3)					Plutonium-239/240 (PU-239/240)					Plutonium-239/240 (PU-239/240)				
						Sep/Plate/AEA					IX/Prec/AEA					Sep/Plate/AEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
C4545	19	21.5	B1D9Y4		6/8/2005	0	pCi/g	U		17					55.7	pCi/g			17	
C4545	22.5	25	B1D9Y5		6/8/2005	0.023	pCi/g	U		0.18					0.023	pCi/g	U		0.18	
C4545	27.5	30	B1D7C7	S	6/13/2005						0.021	pCi/g			0.012					
C4545	27.5	30	B1D7C7	S	6/13/2005															
C4545	27.5	30	B1D7C8	S	6/13/2005	0	pCi/g	U		0.11					0.043	pCi/g	U		0.11	
C4545	27.5	30	B1D7C8	S	6/13/2005															
C4545	49	51.5	B1D7C9	R	6/14/2005						0.019	pCi/g			0.006					
C4545	49	51.5	B1D7C9	R	6/14/2005															
C4545	49	51.5	B1D7D0	R	6/14/2005															
C4545	49	51.5	B1D7D0	R	6/14/2005						0.01	pCi/g	U		0.013					
C4545	104	106.5	B1D992		6/23/2005															
C4545	104	106.5	B1D992		6/23/2005						0.013	pCi/g	U		0.014					
C4545	178	180.5	B1D993		6/27/2005															
C4545	178	180.5	B1D993		6/27/2005						-0.002	pCi/g	U		0.028					
C4545	234	236.5	B1D994		6/29/2005						0.007	pCi/g	U		0.016					
C4545	234	236.5	B1D994		6/29/2005															
C4545	262	264.5	B1D995		6/30/2005															
C4545	262	264.5	B1D995		6/30/2005						0.011	pCi/g			0.005					
			B1D7F1	EB	6/7/2005															
			B1D7F1	EB	6/7/2005						0.022	pCi/L	U		0.041					
			B1D7F2	EB	6/7/2005															
					TQL (pCi/g)						1				1				1	

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Table B-17. Radiochemical Analysis Results for Borehole C4545 (216-A-8) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Potassium-40 (13966-00-2)				Radium-226 (13982-63-3)				Radium-228 (15262-20-1)						
						GEA				GEA				GEA						
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
C4545	19	21.5	B1D9Y4		6/8/2005	6200	pCi/g	U		6200	760	pCi/g	U		760	870	pCi/g	U		870
C4545	22.5	25	B1D9Y5		6/8/2005	9.86	pCi/g			1.7	0.3	pCi/g			0.29	1.1	pCi/g			0.74
C4545	27.5	30	B1D7C7	S	6/13/2005															
C4545	27.5	30	B1D7C7	S	6/13/2005	1.7	pCi/g	U		1.7	1.4	pCi/g	U		1.4	0.44	pCi/g	U		0.44
C4545	27.5	30	B1D7C8	S	6/13/2005	8.32	pCi/g			0.4	0.74	pCi/g	U		0.74	0.479	pCi/g			0.36
C4545	27.5	30	B1D7C8	S	6/13/2005						0.31	pCi/g	U		0.278	0.387	pCi/g	U		0.167
C4545	49	51.5	B1D7C9	R	6/14/2005															
C4545	49	51.5	B1D7C9	R	6/14/2005	7.9	pCi/g			0.69	0.224	pCi/g			0.12	0.46	pCi/g	U		0.46
C4545	49	51.5	B1D7D0	R	6/14/2005	13.9	pCi/g			1	0.411	pCi/g			0.17	0.809	pCi/g			0.41
C4545	49	51.5	B1D7D0	R	6/14/2005															
C4545	104	106.5	B1D992		6/23/2005	15	pCi/g			1	0.553	pCi/g			0.14	0.688	pCi/g			0.38
C4545	104	106.5	B1D992		6/23/2005															
C4545	178	180.5	B1D993		6/27/2005	10.7	pCi/g			0.63	0.272	pCi/g			0.11	0.529	pCi/g			0.23
C4545	178	180.5	B1D993		6/27/2005															
C4545	234	236.5	B1D994		6/29/2005															
C4545	234	236.5	B1D994		6/29/2005	17.4	pCi/g			2.1	0.617	pCi/g			0.36	0.72	pCi/g			0.64
C4545	262	264.5	B1D995		6/30/2005	13.5	pCi/g			0.63	0.476	pCi/g			0.1	0.805	pCi/g			0.24
C4545	262	264.5	B1D995		6/30/2005															
			B1D7F1	EB	6/7/2005															
			B1D7F1	EB	6/7/2005															
			B1D7F2	EB	6/7/2005	150	pCi/L	U		150	26	pCi/L	U		26	60	pCi/L	U		60
						TQL (pCi/g)				N/R				N/R						

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Table B-17. Radiochemical Analysis Results for Borehole C4545 (216-A-8) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Technetium-99 (14133-76-7)					Technetium-99 (14133-76-7)					Thorium-228 (14274-82-9)				
						Sep/GPC					TEVA/LSC					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
C4545	19	21.5	B1D9Y4		6/8/2005	79.6	pCi/g			10						650	pCi/g	U		650
C4545	22.5	25	B1D9Y5		6/8/2005	0.992	pCi/g			0.53						0.699	pCi/g			0.2
C4545	27.5	30	B1D7C7	S	6/13/2005															
C4545	27.5	30	B1D7C7	S	6/13/2005	1.08	pCi/g			0.47						1.5	pCi/g	U		1.5
C4545	27.5	30	B1D7C8	S	6/13/2005											0.746	pCi/g	U		0.78
C4545	27.5	30	B1D7C8	S	6/13/2005						1.3	pCi/g	U		4.73					
C4545	49	51.5	B1D7C9	R	6/14/2005															
C4545	49	51.5	B1D7C9	R	6/14/2005	0.156	pCi/g	U		0.53						0.556	pCi/g			0.11
C4545	49	51.5	B1D7D0	R	6/14/2005	0.093	pCi/g	U		0.47						0.707	pCi/g			0.14
C4545	49	51.5	B1D7D0	R	6/14/2005															
C4545	104	106.5	B1D992		6/23/2005	0.105	pCi/g	U		0.48						0.884	pCi/g			0.14
C4545	104	106.5	B1D992		6/23/2005															
C4545	178	180.5	B1D993		6/27/2005	-0.006	pCi/g	U		0.54						0.686	pCi/g			0.1
C4545	178	180.5	B1D993		6/27/2005															
C4545	234	236.5	B1D994		6/29/2005															
C4545	234	236.5	B1D994		6/29/2005	0.098	pCi/g	U		0.49						0.776	pCi/g			0.24
C4545	262	264.5	B1D995		6/30/2005	0.039	pCi/g	U		0.49						0.801	pCi/g			0.09
C4545	262	264.5	B1D995		6/30/2005															
			B1D7F1	EB	6/7/2005	2.13	pCi/L	U		5.4										
			B1D7F1	EB	6/7/2005															
			B1D7F2	EB	6/7/2005											17	pCi/L	U		17
					TQL (pCi/g)					15					15					N/R

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Table B-17. Radiochemical Analysis Results for Borehole C4545 (216-A-8) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tritium (10028-17-8)				Uranium-233/234 (U-233/234)				Uranium-233/234 (U-233/234)				Uranium-235 (15117-96-1)					
						CombOx/LSC				IX/Prec/AEA				Sep/Plate/AEA				GEA					
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q
C4545	19	21.5	B1D9Y4		6/8/2005	3.78	pCi/g	U		57					2.34	pCi/g	U		18	1400	pCi/g	U	1400
C4545	22.5	25	B1D9Y5		6/8/2005	0.89	pCi/g	U		2.4					0.258	pCi/g			0.18	0.44	pCi/g	U	0.44
C4545	27.5	30	B1D7C7	S	6/13/2005						0.15	pCi/g		0.004									
C4545	27.5	30	B1D7C7	S	6/13/2005	4.19	pCi/g			2.8										2.9	pCi/g	U	2.9
C4545	27.5	30	B1D7C8	S	6/13/2005										0.36	pCi/g			0.11	1.7	pCi/g	U	1.7
C4545	27.5	30	B1D7C8	S	6/13/2005																		
C4545	49	51.5	B1D7C9	R	6/14/2005						0.18	pCi/g		0.005									
C4545	49	51.5	B1D7C9	R	6/14/2005	4.54	pCi/g			2.3										0.27	pCi/g	U	0.27
C4545	49	51.5	B1D7D0	R	6/14/2005	3.24	pCi/g			2.5										0.27	pCi/g	U	0.27
C4545	49	51.5	B1D7D0	R	6/14/2005						0.1	pCi/g		0.016									
C4545	104	106.5	B1D992		6/23/2005	2.48	pCi/g	U		2.5										0.26	pCi/g	U	0.26
C4545	104	106.5	B1D992		6/23/2005						0.16	pCi/g		0.014									
C4545	178	180.5	B1D993		6/27/2005	4.68	pCi/g			3.4										0.23	pCi/g	U	0.23
C4545	178	180.5	B1D993		6/27/2005						0.16	pCi/g		0.013									
C4545	234	236.5	B1D994		6/29/2005						0.14	pCi/g		0.005									
C4545	234	236.5	B1D994		6/29/2005	8.5	pCi/g			2.5										0.5	pCi/g	U	0.5
C4545	262	264.5	B1D995		6/30/2005	1.09	pCi/g	U		2.8										0.17	pCi/g	U	0.17
C4545	262	264.5	B1D995		6/30/2005						0.069	pCi/g		0.013									
			B1D7F1	EB	6/7/2005																		
			B1D7F1	EB	6/7/2005						0.1	pCi/L		0.034									
			B1D7F2	EB	6/7/2005															43	pCi/L	U	43
					TQL (pCi/g)	400				1				1				1					

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Table B-17. Radiochemical Analysis Results for Borehole C4545 (216-A-8) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Uranium-235 (15117-96-1)					Uranium-235 (15117-96-1)					Uranium-238 (U-238)				
							IX/Prec/AEA					Sep/Plate/AEA					GEA				
							Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
C4545	19	21.5	B1D9Y4		6/8/2005	EBRLNE					0	pCi/g	U		22	20000	pCi/g	U		20000	
C4545	22.5	25	B1D9Y5		6/8/2005	EBRLNE					0.057	pCi/g	U		0.22	22	pCi/g	U		22	
C4545	27.5	30	B1D7C7	S	6/13/2005	EBRLNE										12	pCi/g	U		12	
C4545	27.5	30	B1D7C7	S	6/13/2005	WSCF	0.007	pCi/g	U		0.017										
C4545	27.5	30	B1D7C8	S	6/13/2005	EBRLNE					0.034	pCi/g	U		0.13	9.6	pCi/g	U		9.6	
C4545	49	51.5	B1D7C9	R	6/14/2005	EBRLNE										7.4	pCi/g	U		7.4	
C4545	49	51.5	B1D7C9	R	6/14/2005	WSCF	0.019	pCi/g			0.006										
C4545	49	51.5	B1D7D0	R	6/14/2005	WSCF	-0.002	pCi/g	U		0.014										
C4545	49	51.5	B1D7D0	R	6/14/2005	EBRLNE										12	pCi/g	U		12	
C4545	104	106.5	B1D992		6/23/2005	WSCF	0.004	pCi/g	U		0.015					10	pCi/g	U		10	
C4545	104	106.5	B1D992		6/23/2005	EBRLNE															
C4545	178	180.5	B1D993		6/27/2005	WSCF	0.016	pCi/g			0.015										
C4545	178	180.5	B1D993		6/27/2005	EBRLNE										7.3	pCi/g	U		7.3	
C4545	234	236.5	B1D994		6/29/2005	EBRLNE										25	pCi/g	U		25	
C4545	234	236.5	B1D994		6/29/2005	WSCF	0.02	pCi/g			0.015										
C4545	262	264.5	B1D995		6/30/2005	EBRLNE										6.4	pCi/g	U		6.4	
C4545	262	264.5	B1D995		6/30/2005	WSCF	0.012	pCi/g			0.005										
			B1D7F1	EB	6/7/2005	WSCF	0.02	pCi/L	U		0.037										
			B1D7F2	EB	6/7/2005	EBRLNE										1900	pCi/L	U		1900	
						TQL (pCi/g)					1				1					1	

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Table B-17. Radiochemical Analysis Results for Borehole C4545 (216-A-8) (15 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Uranium-238 (U-238)					Uranium-238 (U-238)				
						IX/Prec/AEA					Sep/Plate/AEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
C4545	19	21.5	B1D9Y4		6/8/2005						0	pCi/g	U		18
C4545	22.5	25	B1D9Y5		6/8/2005						0.469	pCi/g			0.18
C4545	27.5	30	B1D7C7	S	6/13/2005										
C4545	27.5	30	B1D7C7	S	6/13/2005	0.18	pCi/g		J	0.012					
C4545	27.5	30	B1D7C8	S	6/13/2005						0.388	pCi/g			0.11
C4545	49	51.5	B1D7C9	R	6/14/2005										
C4545	49	51.5	B1D7C9	R	6/14/2005	0.16	pCi/g			0.014					
C4545	49	51.5	B1D7D0	R	6/14/2005	0.11	pCi/g		J	0.005					
C4545	49	51.5	B1D7D0	R	6/14/2005										
C4545	104	106.5	B1D992		6/23/2005	0.15	pCi/g			0.014					
C4545	104	106.5	B1D992		6/23/2005										
C4545	178	180.5	B1D993		6/27/2005	0.14	pCi/g			0.013					
C4545	178	180.5	B1D993		6/27/2005										
C4545	234	236.5	B1D994		6/29/2005										
C4545	234	236.5	B1D994		6/29/2005	0.14	pCi/g			0.02					
C4545	262	264.5	B1D995		6/30/2005										
C4545	262	264.5	B1D995		6/30/2005	0.098	pCi/g			0.017					
			B1D7F1	EB	6/7/2005	0.028	pCi/L	U		0.034					
			B1D7F2	EB	6/7/2005										
					TQL (pCi/g)						1				1

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,2,4-Trichlorobenzene (120-82-1)				1,2-Dichlorobenzene (95-50-1)				1,3-Dichlorobenzene (541-73-1)				1,4-Dichlorobenzene (106-46-7)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	STLSL	35	µg/kg	U		39	µg/kg	U		33	µg/kg	U		36	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	STLSL	35	µg/kg	U		39	µg/kg	U		33	µg/kg	U		36	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005	WSCF	160	µg/kg	U	UJ	160	µg/kg	U	UJ	120	µg/kg	U	UJ	190	µg/kg	U	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005	STLSL	37	µg/kg	U		41	µg/kg	U		35	µg/kg	U		38	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	WSCF	150	µg/kg	U	UJ	160	µg/kg	U		120	µg/kg	U		180	µg/kg	U	UJ
C4545	49	51.5	B1D7D0	R	6/14/2005	WSCF	150	µg/kg	U	UJ	160	µg/kg	U		120	µg/kg	U		180	µg/kg	U	UJ
C4545	104	106.5	B1D992		6/23/2005	WSCF	150	µg/kg	U		160	µg/kg	U		120	µg/kg	U		180	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	WSCF	93	µg/kg	U		130	µg/kg	U		160	µg/kg	U		140	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	WSCF	94	µg/kg	U		130	µg/kg	U		160	µg/kg	U		140	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	WSCF	98	µg/kg	U		130	µg/kg	U		170	µg/kg	U		140	µg/kg	U	
			B1D7F1	EB	6/7/2005	WSCF	1.7	µg/L	U		1.4	µg/L	U		1.2	µg/L	U		1.3	µg/L	U	
TQL (µg/kg)							N/R				N/R				N/R				N/R			

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2,4,5-Trichlorophenol (95-95-4)				2,4,6-Trichlorophenol (88-06-2)				2,4-Dichlorophenol (120-83-2)				2,4-Dimethylphenol (105-67-9)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	30	µg/kg	U		8.9	µg/kg	U		21	µg/kg	U		160	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	30	µg/kg	U		8.9	µg/kg	U		21	µg/kg	U		160	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005	250	µg/kg	U	UJ	150	µg/kg	U	UJ	160	µg/kg	U	UJ	370	µg/kg	U	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005	32	µg/kg	U		9.3	µg/kg	U		22	µg/kg	U		170	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	240	µg/kg	U		140	µg/kg	U		150	µg/kg	U		360	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	240	µg/kg	U		140	µg/kg	U		150	µg/kg	U		360	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	230	µg/kg	U		140	µg/kg	U		150	µg/kg	U		360	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	46	µg/kg	U		43	µg/kg	U		45	µg/kg	U		91	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	46	µg/kg	U		43	µg/kg	U		46	µg/kg	U		91	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	48	µg/kg	U		45	µg/kg	U		48	µg/kg	U		96	µg/kg	U	
			B1D7F1	EB	6/7/2005	0.77	µg/L	U		0.48	µg/L	U		0.51	µg/L	U		1.6	µg/L	U	
					TQL (µg/kg)		N/R				N/R				N/R				N/R		

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2,4-Dinitrophenol (51-28-5)				2,4-Dinitrotoluene (121-14-2)				2,6-Dichlorophenol (87-65-0)				2,6-Dinitrotoluene (606-20-2)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	99	µg/kg	U		36	µg/kg	U					19	µg/kg	U		
C4545	22.5	25	B1D9Y5		6/8/2005	99	µg/kg	U		36	µg/kg	U		20	µg/kg	U		19	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005	340	µg/kg	U	UJ	130	µg/kg	U	UJ					190	µg/kg	U	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005	100	µg/kg	U		38	µg/kg	U						20	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	320	µg/kg	U		130	µg/kg	U						180	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	320	µg/kg	U		130	µg/kg	U						180	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	320	µg/kg	U		130	µg/kg	U						180	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	180	µg/kg	U		55	µg/kg	U						70	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	180	µg/kg	U		55	µg/kg	U						70	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	190	µg/kg	U		58	µg/kg	U						73	µg/kg	U	
			B1D7F1	EB	6/7/2005	0.49	µg/L	U		0.37	µg/L	U						0.33	µg/L	U	
					TQL (µg/kg)		N/R				N/R				N/R				N/R		

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Butoxyethanol (111-76-2)				2-Chloronaphthalene (91-58-7)				2-Chlorophenol (95-57-8)				2-Ethyl-1-hexanol (104-76-7)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005					34	µg/kg	U		18	µg/kg	U					
C4545	22.5	25	B1D9Y5		6/8/2005					34	µg/kg	U		18	µg/kg	U					
C4545	27.5	30	B1D7C7	S	6/13/2005	220	µg/kg	U	UJ	200	µg/kg	U	UJ	220	µg/kg	U	UJ	760	µg/kg	J	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005					36	µg/kg	U		19	µg/kg	U					
C4545	49	51.5	B1D7C9	R	6/14/2005	210	µg/kg	U		190	µg/kg	U		210	µg/kg	U	UJ				
C4545	49	51.5	B1D7D0	R	6/14/2005	210	µg/kg	U		190	µg/kg	U		210	µg/kg	U	UJ				
C4545	104	106.5	B1D992		6/23/2005	210	µg/kg	U		190	µg/kg	U		210	µg/kg	U					
C4545	178	180.5	B1D993		6/27/2005	84	µg/kg	U		66	µg/kg	U		77	µg/kg	U					
C4545	234	236.5	B1D994		6/29/2005	85	µg/kg	U		67	µg/kg	U		78	µg/kg	U					
C4545	262	264.5	B1D995		6/30/2005	88	µg/kg	U		70	µg/kg	U		81	µg/kg	U					
			B1D7F1	EB	6/7/2005	0.64	µg/L	U		3.8	µg/L	U		2.1	µg/L	U					
					TQL (µg/kg)					N/R				N/R							

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Methylnaphthalene (91-57-6)				2-Methylphenol (cresol, o-) (95-48-7)				2-Naphthylamine (91-59-8)				2-Nitroaniline (88-74-4)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	37	µg/kg	U		34	µg/kg	U		44	µg/kg	U		8.7	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	37	µg/kg	U		34	µg/kg	U		44	µg/kg	U		8.7	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005	170	µg/kg	U	UJ	220	µg/kg	U	UJ	180	µg/kg	U	UJ	170	µg/kg	U	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005	39	µg/kg	U		35	µg/kg	U		47	µg/kg	U		9.2	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	160	µg/kg	U		210	µg/kg	U		180	µg/kg	U		160	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	160	µg/kg	U		210	µg/kg	U		180	µg/kg	U		160	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	160	µg/kg	U		210	µg/kg	U		180	µg/kg	U		160	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	76	µg/kg	U		83	µg/kg	U		170	µg/kg	U		52	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	76	µg/kg	U		83	µg/kg	U		170	µg/kg	U		53	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	80	µg/kg	U		87	µg/kg	U		180	µg/kg	U		55	µg/kg	U	
			B1D7F1	EB	6/7/2005	3.3	µg/L	U		0.24	µg/L	U		0.62	µg/L	U		0.4	µg/L	U	
					TQL (µg/kg)	N/R				N/R				N/R				N/R			

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Nitrophenol (88-75-5)				3,3'-Dichlorobenzidine (91-94-1)				3+4 Methylphenol (cresol, m+p) (65794-96-9)				3-Nitroaniline (99-09-2)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	38	µg/kg	U		120	µg/kg	U		68	µg/kg	U		99	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	38	µg/kg	U		120	µg/kg	U		68	µg/kg	U		99	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005	230	µg/kg	U	UJ	210	µg/kg	U	UJ	270	µg/kg	U	UJ	140	µg/kg	U	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005	40	µg/kg	U		130	µg/kg	U		72	µg/kg	U		100	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	220	µg/kg	U		200	µg/kg	U		260	µg/kg	U		130	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	220	µg/kg	U		200	µg/kg	U		260	µg/kg	U		130	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	220	µg/kg	U		200	µg/kg	U		260	µg/kg	U		130	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	92	µg/kg	U		200	µg/kg	U		110	µg/kg	U		59	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	93	µg/kg	U		200	µg/kg	U		110	µg/kg	U		59	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	97	µg/kg	U		210	µg/kg	U		110	µg/kg	U		62	µg/kg	U	
			B1D7F1	EB	6/7/2005	0.55	µg/L	U		0.98	µg/L	U		0.62	µg/L	U		0.43	µg/L	U	
					TQL (µg/kg)	N/R				N/R				N/R				N/R			

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	4,6-Dinitro-2-methylphenol (534-52-1)				4-Bromophenylphenyl ether (101-55-3)				4-Chloro-3-methylphenol (59-50-7)				4-Chloroaniline (106-47-8)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	62	µg/kg	U		36	µg/kg	U		19	µg/kg	U		130	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	62	µg/kg	U		36	µg/kg	U		19	µg/kg	U		130	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005	320	µg/kg	U	UJ	210	µg/kg	U	UJ	200	µg/kg	U	UJ	200	µg/kg	U	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005	65	µg/kg	U		38	µg/kg	U		20	µg/kg	U		140	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	310	µg/kg	U		200	µg/kg	U		190	µg/kg	U	UJ	190	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	310	µg/kg	U		200	µg/kg	U		190	µg/kg	U	UJ	190	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	310	µg/kg	U		200	µg/kg	U		190	µg/kg	U		190	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	130	µg/kg	U		52	µg/kg	U		47	µg/kg	U		150	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	130	µg/kg	U		53	µg/kg	U		48	µg/kg	U		150	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	140	µg/kg	U		55	µg/kg	U		50	µg/kg	U		160	µg/kg	U	
			B1D7F1	EB	6/7/2005	0.52	µg/L	U		1.8	µg/L	U		0.45	µg/L	U		0.55	µg/L	U	
					TQL (µg/kg)																

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	4-Chlorophenylphenyl ether (7005-72-3)				4-Nitroaniline (100-01-6)				4-Nitrophenol (100-02-7)				Acenaphthene (83-32-9)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	7.3	µg/kg	U		67	µg/kg	U		35	µg/kg	U		36	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	7.3	µg/kg	U		67	µg/kg	U		35	µg/kg	U		36	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005	160	µg/kg	U	UJ	250	µg/kg	U	UJ	370	µg/kg	U	UJ	200	µg/kg	U	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005	7.6	µg/kg	U		70	µg/kg	U		36	µg/kg	U		38	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	150	µg/kg	U		240	µg/kg	U		360	µg/kg	U		190	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	150	µg/kg	U		240	µg/kg	U		360	µg/kg	U		190	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	150	µg/kg	U		240	µg/kg	U		360	µg/kg	U		190	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	52	µg/kg	U		89	µg/kg	U		88	µg/kg	U		70	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	53	µg/kg	U		89	µg/kg	U		88	µg/kg	U		70	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	55	µg/kg	U		93	µg/kg	U		92	µg/kg	U		73	µg/kg	U	
			B1D7F1	EB	6/7/2005	2.1	µg/L	U		0.38	µg/L	U		1.1	µg/L	U		2.7	µg/L	U	
					TQL (µg/kg)		N/R				N/R				N/R				N/R		

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Acenaphthylene (208-96-8)				Anthracene (120-12-7)				Benzo(a)anthracene (56-55-3)				Benzo(a)pyrene (50-32-8)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	27	µg/kg	U		18	µg/kg	U		36	µg/kg	U		32	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	27	µg/kg	U		18	µg/kg	U		36	µg/kg	U		32	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005	150	µg/kg	U	UJ	180	µg/kg	U	UJ	190	µg/kg	U	UJ	140	µg/kg	U	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005	28	µg/kg	U		19	µg/kg	U		38	µg/kg	U		33	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	150	µg/kg	U		180	µg/kg	U		180	µg/kg	U		130	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	150	µg/kg	U		180	µg/kg	U		180	µg/kg	U		130	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	150	µg/kg	U		180	µg/kg	U		180	µg/kg	U		130	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	75	µg/kg	U		78	µg/kg	U		64	µg/kg	U		62	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	75	µg/kg	U		79	µg/kg	U		65	µg/kg	U		62	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	78	µg/kg	U		82	µg/kg	U		68	µg/kg	U		65	µg/kg	U	
			B1D7F1	EB	6/7/2005	2.4	µg/L	U		0.8	µg/L	U		0.4	µg/L	U		0.52	µg/L	U	
					TQL (µg/kg)	N/R				N/R				N/R				N/R			

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Benzo(b)fluoranthene (205-99-2)				Benzo(ghi)perylene (191-24-2)				Benzo(k)fluoranthene (207-08-9)				Benzyl alcohol (100-51-6)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	37	µg/kg	U		40	µg/kg	U		64	µg/kg	U		54	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	37	µg/kg	U		40	µg/kg	U		64	µg/kg	U					
C4545	27.5	30	B1D7C7	S	6/13/2005	170	µg/kg	U	UJ	290	µg/kg	U	UJ	250	µg/kg	U	UJ	260	µg/kg	U	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005	39	µg/kg	U		42	µg/kg	U		67	µg/kg	U		56	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	170	µg/kg	U		280	µg/kg	U		240	µg/kg	U		250	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	170	µg/kg	U		280	µg/kg	U		240	µg/kg	U		250	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	170	µg/kg	U		280	µg/kg	U		230	µg/kg	U		250	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	75	µg/kg	U		78	µg/kg	U		55	µg/kg	U		58	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	76	µg/kg	U		79	µg/kg	U		55	µg/kg	U		58	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	79	µg/kg	U		82	µg/kg	U		58	µg/kg	U		61	µg/kg	U	
			B1D7F1	EB	6/7/2005	0.36	µg/L	U		0.87	µg/L	U		0.37	µg/L	U		0.29	µg/L	U	
					TQL (µg/kg)	N/R				N/R				N/R				0.33			

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Bis(2-chloro-1-methylethyl)ether (108-60-1)				Bis(2-Chloroethoxy)methane (111-91-1)				Bis(2-chloroethyl) ether (111-44-4)				Bis(2-ethylhexyl) phthalate (117-81-7)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	STLSL	38	µg/kg	U		35	µg/kg	U		18	µg/kg	U		35	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	STLSL	38	µg/kg	U		35	µg/kg	U		18	µg/kg	U		35	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005	WSCF	250	µg/kg	U	UJ	170	µg/kg	U	UJ	200	µg/kg	U	UJ	270	µg/kg	U	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005	STLSL	40	µg/kg	U		37	µg/kg	U		19	µg/kg	U		36	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	WSCF	240	µg/kg	U		160	µg/kg	U		190	µg/kg	U		260	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	WSCF	240	µg/kg	U		160	µg/kg	U		190	µg/kg	U		260	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	WSCF	240	µg/kg	U		160	µg/kg	U		190	µg/kg	U		260	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	WSCF	90	µg/kg	U		62	µg/kg	U		100	µg/kg	U		73	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	WSCF	90	µg/kg	U		63	µg/kg	U		100	µg/kg	U		73	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	WSCF	94	µg/kg	U		66	µg/kg	U		110	µg/kg	U		76	µg/kg	U	
			B1D7F1	EB	6/7/2005	WSCF	1.4	µg/L	U		0.3	µg/L	U		0.23	µg/L	U		0.77	µg/L	U	
TQL (µg/kg)							N/R				N/R				N/R				N/R			

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dibenz[a,h]anthracene (53-70-3)				Dibenzofuran (132-64-9)				Diethylphthalate (84-66-2)				Dimethyl phthalate (131-11-3)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	35	µg/kg	U		19	µg/kg	U		36	µg/kg	U		20	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	35	µg/kg	U		19	µg/kg	U		36	µg/kg	U		20	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005	250	µg/kg	U	UJ	170	µg/kg	U	UJ	190	µg/kg	U	UJ	140	µg/kg	U	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005	36	µg/kg	U		20	µg/kg	U		37	µg/kg	U		21	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	240	µg/kg	U		170	µg/kg	U		180	µg/kg	U		130	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	240	µg/kg	U		170	µg/kg	U		180	µg/kg	U		130	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	240	µg/kg	U		170	µg/kg	U		180	µg/kg	U		130	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	95	µg/kg	U		62	µg/kg	U		130	µg/kg	U		65	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	96	µg/kg	U		63	µg/kg	U		140	µg/kg	U		66	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	100	µg/kg	U		66	µg/kg	U		140	µg/kg	U		68	µg/kg	U	
			B1D7F1	EB	6/7/2005	0.94	µg/L	U		2.5	µg/L	U		1.1	µg/L	J		0.33	µg/L	U	
					TQL (µg/kg)	N/R				N/R				N/R				N/R			

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Di-n-butylphthalate (84-74-2)				Di-n-octylphthalate (117-84-0)				Fluoranthene (206-44-0)				Fluorene (86-73-7)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	28	µg/kg	U		38	µg/kg	U		23	µg/kg	U		6.6	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	28	µg/kg	U		38	µg/kg	U		23	µg/kg	U		6.6	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005	730	µg/kg	J	UJ	310	µg/kg	U	UJ	160	µg/kg	U	UJ	160	µg/kg	U	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005	29	µg/kg	U		40	µg/kg	U		24	µg/kg	U		6.9	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	180	µg/kg	J		300	µg/kg	U		150	µg/kg	U		150	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	160	µg/kg	U		300	µg/kg	U		150	µg/kg	U		150	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	160	µg/kg	U		300	µg/kg	U		150	µg/kg	U		150	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	690	µg/kg			86	µg/kg	U		81	µg/kg	U		69	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	340	µg/kg			87	µg/kg	U		82	µg/kg	U		70	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	270	µg/kg			91	µg/kg	U		86	µg/kg	U		73	µg/kg	U	
			B1D7F1	EB	6/7/2005	0.43	µg/L	U		1.4	µg/L	U		0.51	µg/L	U		2.2	µg/L	U	
					TQL (µg/kg)	N/R				N/R				N/R				N/R			

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Hexachlorobenzene (118-74-1)				Hexachlorobutadiene (87-68-3)				Hexachlorocyclopenta diene (77-47-4)				Hexachloroethane (67-72-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	17	µg/kg	U		38	µg/kg	U		37	µg/kg	U		37	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	17	µg/kg	U		38	µg/kg	U		37	µg/kg	U		37	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005	160	µg/kg	U	UJ	190	µg/kg	U	UJ	240	µg/kg	U	UJ	140	µg/kg	U	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005	17	µg/kg	U		40	µg/kg	U		39	µg/kg	U		39	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	150	µg/kg	U		180	µg/kg	U		230	µg/kg	U		130	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	150	µg/kg	U		180	µg/kg	U		230	µg/kg	U		130	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	150	µg/kg	U		180	µg/kg	U		230	µg/kg	U		130	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	70	µg/kg	U		85	µg/kg	U		160	µg/kg	U		120	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	70	µg/kg	U		85	µg/kg	U		170	µg/kg	U		120	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	73	µg/kg	U		89	µg/kg	U		170	µg/kg	U		130	µg/kg	U	
			B1D7F1	EB	6/7/2005	1.1	µg/L	U		1.2	µg/L	U		0.6	µg/L	U		1	µg/L	U	
					TQL (µg/kg)	N/R				N/R				N/R				N/R			

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Indeno(1,2,3-cd)pyrene (193-39-5)				Isophorone (78-59-1)				Naphthalene (91-20-3)				Nitrobenzene (98-95-3)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	17	µg/kg	U		38	µg/kg	U		35	µg/kg	U		18	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	17	µg/kg	U		38	µg/kg	U		35	µg/kg	U		18	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005	190	µg/kg	U	UJ	190	µg/kg	U	UJ	170	µg/kg	U	UJ	170	µg/kg	U	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005	18	µg/kg	U		40	µg/kg	U		36	µg/kg	U		19	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	180	µg/kg	U		180	µg/kg	U		160	µg/kg	U		170	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	180	µg/kg	U		180	µg/kg	U		160	µg/kg	U		170	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	180	µg/kg	U		180	µg/kg	U		160	µg/kg	U		170	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	83	µg/kg	U		85	µg/kg	U		83	µg/kg	U		85	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	84	µg/kg	U		85	µg/kg	U		84	µg/kg	U		85	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	88	µg/kg	U		89	µg/kg	U		88	µg/kg	U		89	µg/kg	U	
			B1D7F1	EB	6/7/2005	0.82	µg/L	U		0.42	µg/L	U		1.4	µg/L	U		0.92	µg/L	U	
					TQL (µg/kg)	N/R				N/R				N/R				N/R			

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	n-Nitrosodi-n-dipropylamine (621-64-7)				n-Nitrosodiphenylamine (86-30-6)				nonadecane (629-92-5)				Pentachlorophenol (87-86-5)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	39	µg/kg	U		21	µg/kg	U					120	µg/kg	U		
C4545	22.5	25	B1D9Y5		6/8/2005	39	µg/kg	U		21	µg/kg	U					120	µg/kg	U		
C4545	27.5	30	B1D7C7	S	6/13/2005	260	µg/kg	U	UJ	170	µg/kg	U	UJ				290	µg/kg	U	UJ	
C4545	27.5	30	B1D7C8	S	6/13/2005	41	µg/kg	U		22	µg/kg	U					120	µg/kg	U		
C4545	49	51.5	B1D7C9	R	6/14/2005	250	µg/kg	U		160	µg/kg	U					280	µg/kg	U		
C4545	49	51.5	B1D7D0	R	6/14/2005	250	µg/kg	U		160	µg/kg	U					280	µg/kg	U		
C4545	104	106.5	B1D992		6/23/2005	250	µg/kg	U		160	µg/kg	U		1600	µg/kg	J		280	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	76	µg/kg	U		73	µg/kg	U					74	µg/kg	U		
C4545	234	236.5	B1D994		6/29/2005	76	µg/kg	U		74	µg/kg	U					74	µg/kg	U		
C4545	262	264.5	B1D995		6/30/2005	80	µg/kg	U		77	µg/kg	U					78	µg/kg	U		
			B1D7F1	EB	6/7/2005	0.44	µg/L	U		0.52	µg/L	U					0.63	µg/L	U		
TQL (µg/kg)						N/R				N/R				N/R				N/R			

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Phenanthrene (85-01-8)				Phenol (108-95-2)				Pyrene (129-00-0)				Pyridine (110-86-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	6.7	µg/kg	U		24	µg/kg	U		35	µg/kg	U		48	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	6.7	µg/kg	U		24	µg/kg	U		35	µg/kg	U		48	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005	180	µg/kg	U	UJ	240	µg/kg	U	UJ	210	µg/kg	U	UJ	140	µg/kg	U	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005	7	µg/kg	U		25	µg/kg	U		37	µg/kg	U		50	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	180	µg/kg	U		230	µg/kg	U	UJ	200	µg/kg	U		140	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	180	µg/kg	U		230	µg/kg	U	UJ	200	µg/kg	U		140	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	180	µg/kg	U		230	µg/kg	U		200	µg/kg	U		140	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	72	µg/kg	U		70	µg/kg	U		79	µg/kg	U		96	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	72	µg/kg	U		70	µg/kg	U		80	µg/kg	U		97	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	76	µg/kg	U		73	µg/kg	U		83	µg/kg	U		100	µg/kg	U	
			B1D7F1	EB	6/7/2005	1.2	µg/L	U		0.56	µg/L	U		0.32	µg/L	U		0.41	µg/L	U	
					TQL (µg/kg)	N/R				0.33				N/R				N/R			

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Table B-18. Semi-Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (19 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tributyl phosphate (126-73-8)			
						8270			
						Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	330	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	330	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005	590	µg/kg	J	UJ
C4545	27.5	30	B1D7C8	S	6/13/2005	350	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	170	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	170	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	170	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	72	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	72	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	76	µg/kg	U	
			B1D7F1	EB	6/7/2005	0.13	µg/L	U	
					TQL (µg/kg)	3300			

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Table B-19. Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,1-Dichloroethene (75-35-4)				1,2,4- Trimethylbenzene (95-63-6)				1,2,4- Trimethylbenzene (95-63-6)				1,2-Dichloroethane (107-06-2)			
						8260				8260				8270				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	3.4	µg/kg	U		2.8	µg/kg	U					2.1	µg/kg	U		
C4545	22.5	25	B1D9Y5		6/8/2005	0.67	µg/kg	U		0.57	µg/kg	U					0.42	µg/kg	U		
C4545	25	27.5	B1DB24	R	6/9/2005	0.67	µg/kg	U		0.57	µg/kg	U					0.42	µg/kg	U		
C4545	25	27.5	B1DB25	R	6/9/2005	2	µg/kg	U									2	µg/kg	U		
C4545	27.5	30	B1D7C7	S	6/13/2005									120	µg/kg	U	UJ				
C4545	49	51.5	B1D7C9	R	6/14/2005	2	µg/kg	U						120	µg/kg	U		2	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	2	µg/kg	U						120	µg/kg	U		2	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	1.7	µg/kg	U						120	µg/kg	U		1.7	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	2	µg/kg	U						150	µg/kg	U		2	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	2.1	µg/kg	U						150	µg/kg	U		2.1	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	2.1	µg/kg	U						160	µg/kg	U		2.1	µg/kg	U	
			B1D7F1	EB	6/7/2005	1	µg/L	U						2.1	µg/L	U		1	µg/L	U	
			B1D7D3	TB	6/7/2005	1	µg/L	U										1	µg/L	U	
			B1D7D4	TB	6/13/2005	1	µg/L	U										1	µg/L	U	
			B1D7D5	TB	6/14/2005	1	µg/L	U										1	µg/L	U	
			B1D7D7	TB	6/23/2005	1	µg/L	U										1	µg/L	U	
			B1D7D8	TB	6/27/2005	1	µg/L	U										1	µg/L	U	
			B1D7D9	TB	6/29/2005	1	µg/L	U										1	µg/L	U	
			B1D7F0	TB	6/30/2005	1	µg/L	U										1	µg/L	U	
					TQL (µg/kg)		N/R				N/R				N/R				5		

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Table B-19. Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,2-Dichloroethene (Total) (540-59-0)				1,2-Dichloropropane (78-87-5)				1-Butanol (71-36-3)				2-Butanone (78-93-3)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	1.1	µg/kg	U		2.3	µg/kg	U		44	µg/kg	U		3.8	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	0.22	µg/kg	U		0.46	µg/kg	U		8.7	µg/kg	U		0.76	µg/kg	U	
C4545	25	27.5	B1DB24	R	6/9/2005	0.22	µg/kg	U		0.46	µg/kg	U		8.7	µg/kg	U		0.76	µg/kg	U	
C4545	25	27.5	B1DB25	R	6/9/2005	2	µg/kg	U		2	µg/kg	U		41	µg/kg	U		2	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005	2	µg/kg	U		2	µg/kg	U		41	µg/kg	U		2	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	2	µg/kg	U		2	µg/kg	U		41	µg/kg	U		2	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	1.7	µg/kg	U		1.7	µg/kg	U		34	µg/kg	U		1.7	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	2	µg/kg	U		2	µg/kg	U		41	µg/kg	U		2	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	2.1	µg/kg	U		2.1	µg/kg	U		41	µg/kg	U		2.1	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	2.1	µg/kg	U		2.1	µg/kg	U		43	µg/kg	U		2.1	µg/kg	U	
			B1D7F1	EB	6/7/2005	1	µg/L	U		1	µg/L	U		20	µg/L	U		1	µg/L	U	
			B1D7D3	TB	6/7/2005	1	µg/L	U		1	µg/L	U		20	µg/L	U		1	µg/L	U	
			B1D7D4	TB	6/13/2005	1	µg/L	U		1	µg/L	U		20	µg/L	U		1	µg/L	U	
			B1D7D5	TB	6/14/2005	1	µg/L	U		1	µg/L	U		20	µg/L	U		1	µg/L	U	
			B1D7D7	TB	6/23/2005	1	µg/L	U		1	µg/L	U		20	µg/L	U		32	µg/L		
			B1D7D8	TB	6/27/2005	1	µg/L	U		1	µg/L	U		20	µg/L	U		38	µg/L		
			B1D7D9	TB	6/29/2005	1	µg/L	U		1	µg/L	U		20	µg/L	U		1	µg/L	U	
			B1D7F0	TB	6/30/2005	1	µg/L	U		1	µg/L	U		20	µg/L	U		1	µg/L	U	
					TQL (µg/kg)		10				N/R				N/R					10	

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Table B-19. Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Acetonitrile (75-05-8)				Benzene (71-43-2)				Bromodichloromethane (75-27-4)				Bromoform (75-25-2)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	26	µg/kg	U		0.65	µg/kg	U		2	µg/kg	U		3.1	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	5.3	µg/kg	U		0.13	µg/kg	U		0.39	µg/kg	U		0.62	µg/kg	U	
C4545	25	27.5	B1DB24	R	6/9/2005	12	µg/kg	J		0.13	µg/kg	U		0.39	µg/kg	U		0.62	µg/kg	U	
C4545	25	27.5	B1DB25	R	6/9/2005	4.1	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005	4.1	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	4.1	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	3.4	µg/kg	U		1.7	µg/kg	U		1.7	µg/kg	U		1.7	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	4.1	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	4.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	4.3	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U	
			B1D7F1	EB	6/7/2005	2	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D3	TB	6/7/2005	2	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D4	TB	6/13/2005	2	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D5	TB	6/14/2005	2	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D7	TB	6/23/2005	2	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D8	TB	6/27/2005	2	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D9	TB	6/29/2005	2	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7F0	TB	6/30/2005	2	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
					TQL (µg/kg)																
							N/R				5				N/R						N/R

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Table B-19. Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Bromomethane (74-83-9)				Carbon disulfide (75-15-0)				Carbon tetrachloride (56-23-5)				Chlorobenzene (108-90-7)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	3.2	µg/kg	U		0.5	µg/kg	U		2.2	µg/kg	U		2.7	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	0.64	µg/kg	U		0.1	µg/kg	U		0.45	µg/kg	U		0.54	µg/kg	U	
C4545	25	27.5	B1DB24	R	6/9/2005	0.64	µg/kg	U		0.1	µg/kg	U		0.45	µg/kg	U		0.54	µg/kg	U	
C4545	25	27.5	B1DB25	R	6/9/2005	2	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005	2	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	2	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	1.7	µg/kg	U		1.7	µg/kg	U		1.7	µg/kg	U		1.7	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	2	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U	
			B1D7F1	EB	6/7/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D3	TB	6/7/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D4	TB	6/13/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D5	TB	6/14/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D7	TB	6/23/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D8	TB	6/27/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D9	TB	6/29/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7F0	TB	6/30/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
					TQL (µg/kg)		N/R				N/R				5					5	

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Table B-19. Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Chloroethane (75-00-3)				Chloroform (67-66-3)				Chloromethane (74-87-3)				cis-1,2- Dichloroethylene (156-59-2)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	2.6	µg/kg	U		2.6	µg/kg	U		4.6	µg/kg	U		2.4	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	0.52	µg/kg	U		0.52	µg/kg	U		0.93	µg/kg	U		0.48	µg/kg	U	
C4545	25	27.5	B1DB24	R	6/9/2005	0.52	µg/kg	U		0.52	µg/kg	U		0.93	µg/kg	U		0.48	µg/kg	U	
C4545	25	27.5	B1DB25	R	6/9/2005	2	µg/kg	U		2	µg/kg	U		2	µg/kg	U					
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005	2	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	2	µg/kg	U		2	µg/kg	U		2	µg/kg	U					
C4545	104	106.5	B1D992		6/23/2005	1.7	µg/kg	U		1.7	µg/kg	U		1.7	µg/kg	U		1.7	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	2	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U	
			B1D7F1	EB	6/7/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D3	TB	6/7/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D4	TB	6/13/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D5	TB	6/14/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D7	TB	6/23/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D8	TB	6/27/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D9	TB	6/29/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7F0	TB	6/30/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
					TQL (µg/kg)		N/R			5				N/R				10			

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Table B-19. Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	cis-1,3-Dichloropropene (10061-01-5)				Cyclohexane (110-82-7)				Cyclohexanone (108-94-1)				Cyclohexanone (108-94-1)				
						8260				8260				8260				8270				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
C4545	19	21.5	B1D9Y4		6/8/2005	1.4	µg/kg	U		1.5	µg/kg	U		14	µg/kg	U						
C4545	22.5	25	B1D9Y5		6/8/2005	0.27	µg/kg	U		0.3	µg/kg	U		2.7	µg/kg	U						
C4545	25	27.5	B1DB24	R	6/9/2005	0.27	µg/kg	U		0.3	µg/kg	U		2.7	µg/kg	U						
C4545	25	27.5	B1DB25	R	6/9/2005	2	µg/kg	U		2	µg/kg	U										
C4545	27.5	30	B1D7C7	S	6/13/2005																	
C4545	49	51.5	B1D7C9	R	6/14/2005	2	µg/kg	U		2	µg/kg	U						200	µg/kg	U	UJ	
C4545	49	51.5	B1D7D0	R	6/14/2005	2	µg/kg	U		2	µg/kg	U						190	µg/kg	U		
C4545	104	106.5	B1D992		6/23/2005	1.7	µg/kg	U		1.7	µg/kg	U						190	µg/kg	U		
C4545	178	180.5	B1D993		6/27/2005	2	µg/kg	U		2	µg/kg	U						89	µg/kg	U		
C4545	234	236.5	B1D994		6/29/2005	2.1	µg/kg	U		2.1	µg/kg	U						89	µg/kg	U		
C4545	262	264.5	B1D995		6/30/2005	2.1	µg/kg	U		2.1	µg/kg	U						93	µg/kg	U		
			B1D7F1	EB	6/7/2005	1	µg/L	U		1	µg/L	U						0.34	µg/L	U		
			B1D7D3	TB	6/7/2005	1	µg/L	U		1	µg/L	U										
			B1D7D4	TB	6/13/2005	1	µg/L	U		1	µg/L	U										
			B1D7D5	TB	6/14/2005	1	µg/L	U		1	µg/L	U										
			B1D7D7	TB	6/23/2005	1	µg/L	U		1	µg/L	U										
			B1D7D8	TB	6/27/2005	1	µg/L	U		1	µg/L	U										
			B1D7D9	TB	6/29/2005	1	µg/L	U		1	µg/L	U										
			B1D7F0	TB	6/30/2005	1	µg/L	U		1	µg/L	U										
					TQL (µg/kg)	N/R				N/R				N/R				N/R				

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Table B-19. Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dibromochloromethane (124-48-1)				Ethyl acetate (141-78-6)				Ethylbenzene (100-41-4)				Hexane (110-54-3)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	1.3	µg/kg	U					2.2	µg/kg	U			4.2	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	0.26	µg/kg	U		13	µg/kg			0.44	µg/kg	U			0.84	µg/kg	U
C4545	25	27.5	B1DB24	R	6/9/2005	0.26	µg/kg	U		23	µg/kg			0.44	µg/kg	U			0.84	µg/kg	U
C4545	25	27.5	B1DB25	R	6/9/2005	2	µg/kg	U						2	µg/kg	U			2	µg/kg	U
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005	2	µg/kg	U						2	µg/kg	U			2	µg/kg	U
C4545	49	51.5	B1D7D0	R	6/14/2005	2	µg/kg	U						2	µg/kg	U			2	µg/kg	U
C4545	104	106.5	B1D992		6/23/2005	1.7	µg/kg	U						1.7	µg/kg	U			1.7	µg/kg	U
C4545	178	180.5	B1D993		6/27/2005	2	µg/kg	U						2	µg/kg	U			2	µg/kg	U
C4545	234	236.5	B1D994		6/29/2005	2.1	µg/kg	U						2.1	µg/kg	U			2.1	µg/kg	U
C4545	262	264.5	B1D995		6/30/2005	2.1	µg/kg	U						2.1	µg/kg	U			2.1	µg/kg	U
			B1D7F1	EB	6/7/2005	1	µg/L	U						1	µg/L	U			1	µg/L	U
			B1D7D3	TB	6/7/2005	1	µg/L	U						1	µg/L	U			1	µg/L	U
			B1D7D4	TB	6/13/2005	1	µg/L	U						1	µg/L	U			1	µg/L	U
			B1D7D5	TB	6/14/2005	1	µg/L	U						1	µg/L	U			1	µg/L	U
			B1D7D7	TB	6/23/2005	1	µg/L	U						1	µg/L	U			1	µg/L	U
			B1D7D8	TB	6/27/2005	1	µg/L	U						1	µg/L	U			1	µg/L	U
			B1D7D9	TB	6/29/2005	1	µg/L	U						1	µg/L	U			1	µg/L	U
			B1D7F0	TB	6/30/2005	1	µg/L	U						1	µg/L	U			1	µg/L	U
					TQL (µg/kg)		N/R				N/R			5					N/R		

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Table B-19. Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Methylene chloride (75-09-2)				n-Butylbenzene (104-51-8)				Styrene (100-42-5)				Tetrachloroethene (127-18-4)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	13	µg/kg	U		3	µg/kg	U		2.4	µg/kg	U		2.8	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	2.6	µg/kg	U		0.6	µg/kg	U		0.47	µg/kg	U		0.55	µg/kg	U	
C4545	25	27.5	B1DB24	R	6/9/2005	2.6	µg/kg	U		0.6	µg/kg	U		0.47	µg/kg	U		0.55	µg/kg	U	
C4545	25	27.5	B1DB25	R	6/9/2005	2	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005	2	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	2	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	1.7	µg/kg	U		1.7	µg/kg	U		1.7	µg/kg	U		1.7	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	2	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U	
			B1D7F1	EB	6/7/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D3	TB	6/7/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D4	TB	6/13/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D5	TB	6/14/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D7	TB	6/23/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D8	TB	6/27/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D9	TB	6/29/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7F0	TB	6/30/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
TQL (µg/kg)						5				5				N/R				5			

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Table B-19. Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Tetrahydrofuran (109-99-9)				Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				trans-1,3- Dichloropropene (10061-02-6)			
							8260				8260				8260				8260			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	STLSL	6.2	µg/kg	U		1.6	µg/kg	U		3.4	µg/kg	U		2	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	STLSL	1.2	µg/kg	U		0.33	µg/kg	U		0.69	µg/kg	U		0.4	µg/kg	U	
C4545	25	27.5	B1DB24	R	6/9/2005	STLSL	1.2	µg/kg	U		0.33	µg/kg	U		0.69	µg/kg	U		0.4	µg/kg	U	
C4545	25	27.5	B1DB25	R	6/9/2005	WSCF	4.1	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	WSCF	4.1	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	WSCF	4.1	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	WSCF	3.4	µg/kg	U		1.7	µg/kg	U		1.7	µg/kg	U		1.7	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	WSCF	4.1	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	WSCF	4.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	WSCF	4.3	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U	
			B1D7F1	EB	6/7/2005	WSCF	2	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D3	TB	6/7/2005	WSCF	2	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D4	TB	6/13/2005	WSCF	2	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D5	TB	6/14/2005	WSCF	2	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D7	TB	6/23/2005	WSCF	2	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D8	TB	6/27/2005	WSCF	2	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D9	TB	6/29/2005	WSCF	2	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7F0	TB	6/30/2005	WSCF	2	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
						TQL (µg/kg)			N/R				N/R				10					N/R

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Table B-19. Volatile Organic Analysis Results for Borehole C4545 (216-A-8) (12 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Trichloroethene (79-01-6)				Trichloromonofluorom ethane (75-69-4)				Vinyl chloride (75-01-4)				Xylenes (total) (1330-20-7)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	2.2	µg/kg	U		3.2	µg/kg	U		3.6	µg/kg	U		6.3	µg/kg	U	
C4545	22.5	25	B1D9Y5		6/8/2005	0.44	µg/kg	U		0.64	µg/kg	U		0.71	µg/kg	U		1.3	µg/kg	U	
C4545	25	27.5	B1DB24	R	6/9/2005	0.44	µg/kg	U		0.64	µg/kg	U		0.71	µg/kg	U		1.3	µg/kg	U	
C4545	25	27.5	B1DB25	R	6/9/2005	2	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005	2	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005	2	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	104	106.5	B1D992		6/23/2005	1.7	µg/kg	U		1.7	µg/kg	U		1.7	µg/kg	U		1.7	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005	2	µg/kg	U		2	µg/kg	U		2	µg/kg	U		2	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005	2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U		2.1	µg/kg	U	
			B1D7F1	EB	6/7/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D3	TB	6/7/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D4	TB	6/13/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D5	TB	6/14/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D7	TB	6/23/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D8	TB	6/27/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7D9	TB	6/29/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
			B1D7F0	TB	6/30/2005	1	µg/L	U		1	µg/L	U		1	µg/L	U		1	µg/L	U	
					TQL (µg/kg)	5				N/R				N/R				5			

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Table B-20. Physical Property Analysis Results for Borehole C4545 (216-A-8) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Percent passing No.4 sieve (PAS#4)				Percent passing No.10 sieve (PAS#10)				Percent passing No.20 sieve (PAS#20)				Percent passing No.40 sieve (PAS#40)			
						D422				D422				D422				D422			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005																
C4545	22.5	25	B1D9Y5		6/8/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005	99.7	%			99	%			88.6	%			51.5	%		
C4545	27.5	30	B1D7C8	S	6/13/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005	95.8	%			81.9	%			46.7	%			28.5	%		
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7D0	R	6/14/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	104	106.5	B1D992		6/23/2005	99.8	%			97.8	%			59.4	%			18.5	%		
C4545	178	180.5	B1D993		6/27/2005																
C4545	178	180.5	B1D993		6/27/2005	70.3	%			59.9	%			44.2	%			33	%		
C4545	234	236.5	B1D994		6/29/2005																
C4545	234	236.5	B1D994		6/29/2005	99.8	%			99.3	%			97.1	%			79.2	%		
C4545	262	264.5	B1D995		6/30/2005																
C4545	262	264.5	B1D995		6/30/2005	74.6	%			47.7	%			28.9	%			21.4	%		
			B1D7F1	EB	6/7/2005																

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Table B-20. Physical Property Analysis Results for Borehole C4545 (216-A-8) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Percent passing No.60 sieve (PAS#60)				Percent passing No.100 sieve (PAS#100)				Percent passing No.140 sieve (PAS#140)				Percent passing No.200 sieve (PAS#200)			
						D422				D422				D422				D422			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005																
C4545	22.5	25	B1D9Y5		6/8/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005	31.6	%			22.5	%			18.4	%			15.4	%		
C4545	27.5	30	B1D7C8	S	6/13/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005	19.7	%			14	%			11.4	%			9.3	%		
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7D0	R	6/14/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	104	106.5	B1D992		6/23/2005	10.2	%			6.6	%			5.2	%			4.1	%		
C4545	178	180.5	B1D993		6/27/2005																
C4545	178	180.5	B1D993		6/27/2005	27.5	%			22.9	%			20.3	%			17.9	%		
C4545	234	236.5	B1D994		6/29/2005																
C4545	234	236.5	B1D994		6/29/2005	53.5	%			36.1	%			29.2	%			23.7	%		
C4545	262	264.5	B1D995		6/30/2005																
C4545	262	264.5	B1D995		6/30/2005	17	%			13.1	%			11.2	%			9.7	%		
			B1D7F1	EB	6/7/2005																

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Table B-20. Physical Property Analysis Results for Borehole C4545 (216-A-8) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Bulk density - dry (BULKDENSITY-DRY)				Bulk density - wet (BULKDENSITY-WET)				Percent moisture (dry sample) (%MOISTURE-D)				Percent moisture (wet sample) (%MOISTURE)			
						D2937				D2937				D2216				D2216			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005																
C4545	22.5	25	B1D9Y5		6/8/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005																
C4545	27.5	30	B1D7C7	S	6/13/2005	1821	kg/m3			1930	kg/m3			6.1	%			5.8	%		
C4545	27.5	30	B1D7C8	S	6/13/2005																
C4545	49	51.5	B1D7C9	R	6/14/2005	1950	kg/m3			2014	kg/m3			2.8	%			2.9	%		
C4545	49	51.5	B1D7C9	R	6/14/2005																
C4545	49	51.5	B1D7D0	R	6/14/2005																
C4545	104	106.5	B1D992		6/23/2005																
C4545	104	106.5	B1D992		6/23/2005	1712	kg/m3			1749	kg/m3			2.4	%			2.3	%		
C4545	178	180.5	B1D993		6/27/2005																
C4545	178	180.5	B1D993		6/27/2005	2124	kg/m3			2171	kg/m3			2.6	%			2.5	%		
C4545	234	236.5	B1D994		6/29/2005																
C4545	234	236.5	B1D994		6/29/2005	1884	kg/m3			1946	kg/m3			3.3	%			3.2	%		
C4545	262	264.5	B1D995		6/30/2005																
C4545	262	264.5	B1D995		6/30/2005	2305	kg/m3			2470	kg/m3			9.4	%			8.6	%		
			B1D7F1	EB	6/7/2005																

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Table B-21. Wet Chemistry Analysis Results for Borehole C4545 (216-A-8) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Ammonia (7664-41-7)				Ammonia (7664-41-7)				Ammonium ion (14798-03-9)				Nitrate (14797-55-8)			
							350.1				350.3				300.7				300			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	STLSL	70.5	µg/kg	U									31400	µg/kg			
C4545	22.5	25	B1D9Y5		6/8/2005	STLSL	70.5	µg/kg	U									9740	µg/kg			
C4545	27.5	30	B1D7C7	S	6/13/2005	WSCF							258	µg/kg	U			23600	µg/kg	B		
C4545	27.5	30	B1D7C7	S	6/13/2005	RLNP																
C4545	27.5	30	B1D7C8	S	6/13/2005	STLSL	74.2	µg/kg	U									1550	µg/kg			
C4545	49	51.5	B1D7C9	R	6/14/2005	WSCF							252	µg/kg	U			2880	µg/kg	U		
C4545	49	51.5	B1D7C9	R	6/14/2005	RLNP																
C4545	49	51.5	B1D7D0	R	6/14/2005	WSCF							252	µg/kg	U			2820	µg/kg	U		
C4545	49	51.5	B1D7D0	R	6/14/2005	RLNP																
C4545	104	106.5	B1D992		6/23/2005	RLNP																
C4545	104	106.5	B1D992		6/23/2005	WSCF							258	µg/kg	U			2880	µg/kg	U		
C4545	178	180.5	B1D993		6/27/2005	RLNP																
C4545	178	180.5	B1D993		6/27/2005	WSCF							558	µg/kg	B			2820	µg/kg	U		
C4545	234	236.5	B1D994		6/29/2005	WSCF							316	µg/kg	B			2880	µg/kg	U		
C4545	234	236.5	B1D994		6/29/2005	RLNP																
C4545	262	264.5	B1D995		6/30/2005	WSCF							252	µg/kg	U			2820	µg/kg	U		
C4545	262	264.5	B1D995		6/30/2005	RLNP																
			B1D7F1	EB	6/7/2005	WSCF							5.15	µg/L	B			921	µg/L			
			B1D7F2	EB	6/7/2005	RLNP				122	µg/L	U										
					TQL (µg/kg)					607			607				643		11071			

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Table B-21. Wet Chemistry Analysis Results for Borehole C4545 (216-A-8) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Nitrite (14797-65-0)				Nitrogen in Nitrite and Nitrate (NO ₂ +NO ₃ -N)				Nitrogen in Nitrite and Nitrate (NO ₂ +NO ₃ -N)				Chloride (16887-00-6)			
						300				353.1				353.2				300			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	200	µg/kg	U		53300	µg/kg							1700	µg/kg	B	
C4545	22.5	25	B1D9Y5		6/8/2005	312	µg/kg	B		27	µg/kg	U						2400	µg/kg		
C4545	27.5	30	B1D7C7	S	6/13/2005	3060	µg/kg	U										5280	µg/kg	B	
C4545	27.5	30	B1D7C7	S	6/13/2005								5130	µg/kg							
C4545	27.5	30	B1D7C8	S	6/13/2005	210	µg/kg	U		5800	µg/kg							760	µg/kg	B	
C4545	49	51.5	B1D7C9	R	6/14/2005	3120	µg/kg	U										2600	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005								200	µg/kg	U						
C4545	49	51.5	B1D7D0	R	6/14/2005	3060	µg/kg	U										2550	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005								4000	µg/kg	U						
C4545	104	106.5	B1D992		6/23/2005								203	µg/kg	U						
C4545	104	106.5	B1D992		6/23/2005	3120	µg/kg	U										2600	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005								364	µg/kg							
C4545	178	180.5	B1D993		6/27/2005	3060	µg/kg	U										2550	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005	3120	µg/kg	U										2600	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005								220	µg/kg							
C4545	262	264.5	B1D995		6/30/2005	3060	µg/kg	U										2550	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005								211	µg/kg	U						
			B1D7F1	EB	6/7/2005	19.7	µg/L	U										34	µg/L	U	
			B1D7F2	EB	6/7/2005								200	µg/L	U						
						TQL (µg/kg)				N/R								N/R			

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Table B-21. Wet Chemistry Analysis Results for Borehole C4545 (216-A-8) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Fluoride (16984-48-8)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						300				300				300			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
C4545	19	21.5	B1D9Y4		6/8/2005	51	µg/kg	U		2600	µg/kg	BC		62000	µg/kg		
C4545	22.5	25	B1D9Y5		6/8/2005	51	µg/kg	U		1500	µg/kg	BC		30400	µg/kg		
C4545	27.5	30	B1D7C7	S	6/13/2005	1130	µg/kg	U		8130	µg/kg	U		107000	µg/kg		
C4545	27.5	30	B1D7C7	S	6/13/2005												
C4545	27.5	30	B1D7C8	S	6/13/2005	53	µg/kg	U		1500	µg/kg	BC		3400	µg/kg	B	
C4545	49	51.5	B1D7C9	R	6/14/2005	1150	µg/kg	U		8280	µg/kg	U		5000	µg/kg	U	
C4545	49	51.5	B1D7C9	R	6/14/2005												
C4545	49	51.5	B1D7D0	R	6/14/2005	1130	µg/kg	U		8130	µg/kg	U		4900	µg/kg	U	
C4545	49	51.5	B1D7D0	R	6/14/2005												
C4545	104	106.5	B1D992		6/23/2005												
C4545	104	106.5	B1D992		6/23/2005	1150	µg/kg	U		8280	µg/kg	U		5000	µg/kg	U	
C4545	178	180.5	B1D993		6/27/2005												
C4545	178	180.5	B1D993		6/27/2005	1130	µg/kg	U		8130	µg/kg	U		6320	µg/kg	B	
C4545	234	236.5	B1D994		6/29/2005	1150	µg/kg	U		8280	µg/kg	U		5000	µg/kg	U	
C4545	234	236.5	B1D994		6/29/2005												
C4545	262	264.5	B1D995		6/30/2005	1130	µg/kg	U		8130	µg/kg	U		4900	µg/kg	U	
C4545	262	264.5	B1D995		6/30/2005												
			B1D7F1	EB	6/7/2005	18	µg/L	U		239	µg/L	U		150	µg/L	U	
			B1D7F2	EB	6/7/2005												
					TQL (µg/kg)				N/R				N/R				N/R

APPENDIX C
HISTORICAL BOREHOLE ANALYTICAL RESULTS

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The tables in this appendix list all the chemical and radiochemical results obtained for the following boreholes for this RI report:

- Wells 299-W18-174, 299-W18-246, 299-W18-248, and 299-W18-252 at the 216-Z-1A Tile Field
- Wells 299-W15-84, 299-W15-95, 299-W15-216, 299-W15-217, 299-W15-218, 299-W15-219, 299-W15-220 at the 216-Z-9 Trench; and
- Wells 299-W18-96, 299-W18-247, and 299-W18-249 at the 216-Z18 Crib.

These results apply mainly to samples from the vadose zone. The tables omit all of the groundwater samples retrieved from the boreholes, most of the sediment samples in the groundwater region, and most of the trip blanks associated with samples in the groundwater region.

The "Depth" columns in these tables indicate the depth in feet below ground surface (bgs) at which the sample was taken. For borehole C3427, the depths listed are downhole depths. The "Depth" columns give the upper and lower bounds of the sample location. If depth is noted for a quality control (QC) blank sample, it indicates the depth at which borehole samples were being taken at the time the blank was at the sampling site.

The "Sample" column gives the sample number used in the Hanford Environmental Information System (HEIS).

The "Media" column indicates the type of sample. The indicators are "S" for soil, "V" for vapor, and "W" for water.

The "QC" columns designate the field QC samples. In this column, "E" indicates an equipment blank, i.e., a water sample used to rinse the sampling equipment as a check for contamination; "T" indicates a trip blank, a water sample used to check for contamination by volatile organic compounds during sampling and transportation operations; and "D" indicates a field duplicate sample, obtained to measure sampling and laboratory error.

Analyte names are given in the top row of each table. Below each analyte name are shown the U.S. Environmental Protection Agency (EPA) or American Society for Testing and Materials (ASTM) method number(s) or brief descriptive name(s) of the analytical method(s) used for the analyte. The methods with numbers having three places to the left of the decimal point are described in *Methods of Chemical Analysis of Water and Wastes* (EPA/600/4-79/020). The reference for the 4-digit methods is *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846). The method names employ the following abbreviations:

Term	Definition
3M	Separation using a 3M brand separations disk
AEA	alpha energy analysis
Calculation	The result is calculated stoichiometrically from the column(s) to the left.
ChemOx	Chemical oxidation
CombOx	Oxidation by combustion
Dist	Separation by distillation
Field	Field measurement
GEA	gamma energy analysis
GPC	gas proportional counting
IR	Infrared spectrometry
IX	ion exchange
KPA	kinetic phosphorimetric analysis
LEPS	low-energy photon spectroscopy
LSC	liquid scintillation counting
PAA	Infrared photoacoustic analyzer
Plate	Alpha mount by electroplating
Prec	Chemical precipitation
SX/GC-FID	Solvent extraction/gas chromatography method for total petroleum hydrocarbons using a flame ionization detector
Sep	Chemical separation

The letters in the columns labeled "Q" are QC flags affixed by the laboratories. The flags have the following meanings.

- B: For organic analyses, indicates that the blank was contaminated with the analyte. For inorganic analysis, indicates that the analyte was detected in the sample at a level below the target quantitation limit.
- C: For organic analyses, indicates that analyte result was confirmed by gas chromatography scan.
For inorganic analysis, indicates that the analyte was detected in the associated method blank and in the sample at a concentration less than or equal to five times the level found in the blank.
- D: Result was determined on a dilution of the sample.
- E: For organic analysis, indicates that the result exceeded the calibration range.
For inorganic analysis, indicates that the result is an estimate, due to interference
- J: Result is an estimate.
- N: Tentatively identified compound.
- U: Analyte was undetected, with the indicated reporting limit
- R: Result is rejected for decision-making.
- X: Low recovery for the laboratory control sample.

Where more than one letter is used for a result, the meanings of the individual letters are combined.

Where validation qualifier flags were assigned by the data validator, they are entered in a separate column labeled "V." Where validation flags do not occur, this column may be omitted. Validation flags have the following meanings.

- J: Result is an estimate
- U: Analyte was undetected, with the indicated reporting limit
- R: Result is rejected for decision-making

For radionuclide analysis, a column labeled "MDA" appears. This column gives the "minimum detectable activity" as reported by the laboratory.

The row across the bottom of each table gives the target quantitation limits (TQLs) taken from Table 2-1 of the borehole sampling and analysis plan (SAP; DOE/RL-2001-01, Appendix E). These are the detection limits that should be achieved in the analyses. Entries of "N/A" in this row indicate either that the analyte is not a CPOC, or there is no limit specified in Table 2-1 of the SAP.

Columns with blank data and a corresponding laboratory code indicate results that were analyzed for but were not detected.

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Table C-1. Metal Analysis Results for 299-W15-84 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Aluminum (7429-90-5)				Antimony (7440-36-0)				Barium (7440-39-3)				Beryllium (7440-41-7)			
							6010				6010				6010				6010			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	RLNP	5590000	µg/kg			200	µg/kg	U	66400	µg/kg			280	µg/kg			
299-W15-84	112.5	114.5	B120Y0		6/8/2001	RLNP	10600000	µg/kg			210	µg/kg		90200	µg/kg			500	µg/kg			
299-W15-84	114.5	116.5	B120Y1		6/11/2001	RLNP	8020000	µg/kg			220	µg/kg	U	88900	µg/kg			460	µg/kg			
299-W15-84	117	119	B120Y2		6/11/2001	RLNP	7600000	µg/kg			230	µg/kg	U	72400	µg/kg			400	µg/kg			
299-W15-84	119.5	121	B120Y3		6/11/2001	RLNP	8170000	µg/kg			220	µg/kg	U	85200	µg/kg			440	µg/kg			
299-W15-84	121.5	123.5	B120Y4		6/11/2001	RLNP	4400000	µg/kg			200	µg/kg	U	96400	µg/kg			380	µg/kg			
299-W15-84	123.5	125.4	B120Y5		6/11/2001	RLNP	6580000	µg/kg			190	µg/kg	U	92000	µg/kg			460	µg/kg			
299-W15-84	127	129	B120Y6		6/11/2001	RLNP	7120000	µg/kg			190	µg/kg	U	99200	µg/kg			790	µg/kg			
299-W15-84	130	132.3	B120Y7		6/12/2001	RLNP	7410000	µg/kg			230	µg/kg		60300	µg/kg			740	µg/kg			
299-W15-84	132	134.3	B120Y8		6/12/2001	RLNP	5950000	µg/kg			200	µg/kg	U	57700	µg/kg			720	µg/kg			
299-W15-84	141.5	143.5	B120Y9		6/12/2001	RLNP	6360000	µg/kg			200	µg/kg		60300	µg/kg			620	µg/kg			
299-W15-84	151	153	B12100		6/12/2001	RLNP	5570000	µg/kg			200	µg/kg	U	45400	µg/kg			600	µg/kg			
299-W15-84	161	162.5	B12101		6/13/2001	RLNP	4290000	µg/kg			190	µg/kg	U	63700	µg/kg			580	µg/kg			
299-W15-84	171	173	B12640		6/13/2001	RLNP	3770000	µg/kg			190	µg/kg	U	50900	µg/kg			330	µg/kg		B	
299-W15-84	193.5	195	B12632		6/15/2001	RLNP	4110000	µg/kg			190	µg/kg	U	57700	µg/kg			270	µg/kg		B	

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Table C-1. Metal Analysis Results for 299-W15-84 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cadmium (7440-43-9)				Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	30	µg/kg			8300000	µg/kg			12000	µg/kg			6200	µg/kg		
299-W15-84	112.5	114.5	B120Y0		6/8/2001	60	µg/kg			10600000	µg/kg			20400	µg/kg			8800	µg/kg		
299-W15-84	114.5	116.5	B120Y1		6/11/2001	50	µg/kg			12100000	µg/kg			13100	µg/kg			7400	µg/kg		
299-W15-84	117	119	B120Y2		6/11/2001	40	µg/kg	U		9920000	µg/kg			16400	µg/kg			6600	µg/kg		
299-W15-84	119.5	121	B120Y3		6/11/2001	30	µg/kg	U		51400000	µg/kg			16300	µg/kg			7200	µg/kg		
299-W15-84	121.5	123.5	B120Y4		6/11/2001	90	µg/kg			109000000	µg/kg			36400	µg/kg			8800	µg/kg		
299-W15-84	123.5	125.4	B120Y5		6/11/2001	30	µg/kg	U		20400000	µg/kg			17900	µg/kg			10100	µg/kg		
299-W15-84	127	129	B120Y6		6/11/2001	30	µg/kg	U		5210000	µg/kg			60600	µg/kg			9100	µg/kg		
299-W15-84	130	132.3	B120Y7		6/12/2001	110	µg/kg			5280000	µg/kg			18400	µg/kg			6800	µg/kg		
299-W15-84	132	134.3	B120Y8		6/12/2001	120	µg/kg			3960000	µg/kg			22800	µg/kg			6500	µg/kg		
299-W15-84	141.5	143.5	B120Y9		6/12/2001	140	µg/kg			4750000	µg/kg			9800	µg/kg			6600	µg/kg		
299-W15-84	151	153	B12100		6/12/2001	90	µg/kg			3070000	µg/kg			8600	µg/kg			6400	µg/kg		
299-W15-84	161	162.5	B12101		6/13/2001	80	µg/kg	B		2990000	µg/kg			11200	µg/kg			6500	µg/kg		
299-W15-84	171	173	B12640		6/13/2001	40	µg/kg	U		1920000	µg/kg			18100	µg/kg			3800	µg/kg	B	
299-W15-84	193.5	195	B12632		6/15/2001	30	µg/kg	U		2270000	µg/kg			77500	µg/kg			4800	µg/kg	B	

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Table C-1. Metal Analysis Results for 299-W15-84 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Copper (7440-50-8)				Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	12900	µg/kg			18900000	µg/kg			5400	µg/kg			4100000	µg/kg		
299-W15-84	112.5	114.5	B120Y0		6/8/2001	19100	µg/kg			20800000	µg/kg			8600	µg/kg			6750000	µg/kg		
299-W15-84	114.5	116.5	B120Y1		6/11/2001	16200	µg/kg			16700000	µg/kg			8500	µg/kg			6170000	µg/kg		
299-W15-84	117	119	B120Y2		6/11/2001	17200	µg/kg			15400000	µg/kg			7000	µg/kg			6130000	µg/kg		
299-W15-84	119.5	121	B120Y3		6/11/2001	20800	µg/kg			17100000	µg/kg			6200	µg/kg			6780000	µg/kg		
299-W15-84	121.5	123.5	B120Y4		6/11/2001	17400	µg/kg			22000000	µg/kg			2700	µg/kg			8330000	µg/kg		
299-W15-84	123.5	125.4	B120Y5		6/11/2001	21100	µg/kg			23900000	µg/kg			3500	µg/kg			5490000	µg/kg		
299-W15-84	127	129	B120Y6		6/11/2001	19100	µg/kg			26900000	µg/kg			3800	µg/kg			4600000	µg/kg		
299-W15-84	130	132.3	B120Y7		6/12/2001	30000	µg/kg			18900000	µg/kg			3900	µg/kg			4070000	µg/kg		
299-W15-84	132	134.3	B120Y8		6/12/2001	15200	µg/kg			19000000	µg/kg			3300	µg/kg			3700000	µg/kg		
299-W15-84	141.5	143.5	B120Y9		6/12/2001	12600	µg/kg			21200000	µg/kg			4800	µg/kg			4590000	µg/kg		
299-W15-84	151	153	B12100		6/12/2001	11200	µg/kg			18000000	µg/kg			4000	µg/kg			4000000	µg/kg		
299-W15-84	161	162.5	B12101		6/13/2001	13000	µg/kg			15100000	µg/kg			2900	µg/kg			3180000	µg/kg		
299-W15-84	171	173	B12640		6/13/2001	8200	µg/kg			9550000	µg/kg			3500	µg/kg			2710000	µg/kg		
299-W15-84	193.5	195	B12632		6/15/2001	9100	µg/kg			12800000	µg/kg			3200	µg/kg			2720000	µg/kg		

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Table C-1. Metal Analysis Results for 299-W15-84 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Manganese (7439-96-5)				Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)			
						6010				7471				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	341000	µg/kg			20	µg/kg	U		12100	µg/kg			1360000	µg/kg		
299-W15-84	112.5	114.5	B120Y0		6/8/2001	396000	µg/kg			20	µg/kg	U		19700	µg/kg			2210000	µg/kg		
299-W15-84	114.5	116.5	B120Y1		6/11/2001	326000	µg/kg			20	µg/kg	U		13300	µg/kg			1880000	µg/kg		
299-W15-84	117	119	B120Y2		6/11/2001	221000	µg/kg			20	µg/kg	U		16200	µg/kg			1950000	µg/kg		
299-W15-84	119.5	121	B120Y3		6/11/2001	289000	µg/kg			20	µg/kg	U		16900	µg/kg			1600000	µg/kg		
299-W15-84	121.5	123.5	B120Y4		6/11/2001	291000	µg/kg			20	µg/kg	U		23900	µg/kg			548000	µg/kg		
299-W15-84	123.5	125.4	B120Y5		6/11/2001	382000	µg/kg			20	µg/kg	U		17000	µg/kg			809000	µg/kg		
299-W15-84	127	129	B120Y6		6/11/2001	331000	µg/kg			20	µg/kg	U		37400	µg/kg			979000	µg/kg		
299-W15-84	130	132.3	B120Y7		6/12/2001	263000	µg/kg			20	µg/kg	U		18500	µg/kg			766000	µg/kg		
299-W15-84	132	134.3	B120Y8		6/12/2001	266000	µg/kg			20	µg/kg			16600	µg/kg			968000	µg/kg		
299-W15-84	141.5	143.5	B120Y9		6/12/2001	415000	µg/kg			30	µg/kg			9800	µg/kg			926000	µg/kg		
299-W15-84	151	153	B12100		6/12/2001	309000	µg/kg			20	µg/kg	U		11400	µg/kg			778000	µg/kg		
299-W15-84	161	162.5	B12101		6/13/2001	239000	µg/kg			20	µg/kg	U		12700	µg/kg			739000	µg/kg		
299-W15-84	171	173	B12640		6/13/2001	224000	µg/kg			20	µg/kg	U		16900	µg/kg			850000	µg/kg		
299-W15-84	193.5	195	B12632		6/15/2001	199000	µg/kg			20	µg/kg	U		45600	µg/kg			932000	µg/kg		

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Table C-1. Metal Analysis Results for 299-W15-84 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Silver (7440-22-4)				Sodium (7440-23-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	110	µg/kg	U		112000	µg/kg			25300	µg/kg			32800	µg/kg		
299-W15-84	112.5	114.5	B120Y0		6/8/2001	110	µg/kg	U		188000	µg/kg			37500	µg/kg			50500	µg/kg		
299-W15-84	114.5	116.5	B120Y1		6/11/2001	110	µg/kg	U		146000	µg/kg			28500	µg/kg			42500	µg/kg		
299-W15-84	117	119	B120Y2		6/11/2001	120	µg/kg	U		157000	µg/kg			24800	µg/kg			38600	µg/kg		
299-W15-84	119.5	121	B120Y3		6/11/2001	120	µg/kg	U		217000	µg/kg			43400	µg/kg			36700	µg/kg		
299-W15-84	121.5	123.5	B120Y4		6/11/2001	100	µg/kg	U		411000	µg/kg			46300	µg/kg			36200	µg/kg		
299-W15-84	123.5	125.4	B120Y5		6/11/2001	100	µg/kg	U		510000	µg/kg			69500	µg/kg			48900	µg/kg		
299-W15-84	127	129	B120Y6		6/11/2001	100	µg/kg	U		721000	µg/kg			83600	µg/kg			49300	µg/kg		
299-W15-84	130	132.3	B120Y7		6/12/2001	110	µg/kg	U		616000	µg/kg			52400	µg/kg			45300	µg/kg		
299-W15-84	132	134.3	B120Y8		6/12/2001	110	µg/kg	U		448000	µg/kg			51200	µg/kg			42600	µg/kg		
299-W15-84	141.5	143.5	B120Y9		6/12/2001	100	µg/kg	U		120000	µg/kg			52100	µg/kg			40400	µg/kg		
299-W15-84	151	153	B12100		6/12/2001	100	µg/kg	U		322000	µg/kg			43600	µg/kg			33900	µg/kg		
299-W15-84	161	162.5	B12101		6/13/2001	100	µg/kg	U		434000	µg/kg	B		37900	µg/kg			33400	µg/kg		
299-W15-84	171	173	B12640		6/13/2001	100	µg/kg	U		370000	µg/kg	B		19400	µg/kg			24200	µg/kg		
299-W15-84	193.5	195	B12632		6/15/2001	100	µg/kg	U		445000	µg/kg	B		24200	µg/kg			25600	µg/kg		

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Table C-2. General Chemistry Analysis Results for 299-W15-84 (216-Z-9)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Oil and grease (OIL/GREASE)			
							9071			
							Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	RLNP	147000	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	RLNP	146000	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	RLNP	152000	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	RLNP	367000	µg/kg		
299-W15-84	119.5	121	B120Y3		6/11/2001	RLNP	154000	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	RLNP	357000	µg/kg		
299-W15-84	123.5	125.4	B120Y5		6/11/2001	RLNP	152000	µg/kg		
299-W15-84	127	129	B120Y6		6/11/2001	RLNP	219000	µg/kg		
299-W15-84	130	132.3	B120Y7		6/12/2001	RLNP	196000	µg/kg		
299-W15-84	132	134.3	B120Y8		6/12/2001	RLNP	151000	µg/kg		
299-W15-84	141.5	143.5	B120Y9		6/12/2001	RLNP	208000	µg/kg		
299-W15-84	151	153	B12100		6/12/2001	RLNP	141000	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	RLNP	138000	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	RLNP	259000	µg/kg		
299-W15-84	193.5	195	B12632		6/15/2001	RLNP	136000	µg/kg	U	

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Table C-3. Radiochemical Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Americium-241 (14596-10-2)					Americium-241 (14596-10-2)					Antimony-125 (14234-35-6)					
							GEA					IX/Plate/AEA					GEA					
							Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n
299-W15-84	110	111.8	B120X9		6/8/2001	TMANC	0.041	pCi/g	U		0.041	0.039	pCi/g	U		0.05	0.064	pCi/g	U		0.064	0.029
299-W15-84	112.5	114.5	B120Y0		6/8/2001	TMANC	0.39	pCi/g	U		0.39	0	pCi/g	U		0.03	0.084	pCi/g	U		0.084	0.039
299-W15-84	114.5	116.5	B120Y1		6/11/2001	TMANC	0.11	pCi/g	U		0.11	-0.017	pCi/g	U		0.075	0.068	pCi/g	U		0.068	0.03
299-W15-84	117	119	B120Y2		6/11/2001	TMANC	0.042	pCi/g	U		0.042	0.009	pCi/g	U		0.053	0.068	pCi/g	U		0.068	0.033
299-W15-84	119.5	121	B120Y3		6/11/2001	TMANC	0.29	pCi/g	U		0.29	0.05	pCi/g	U		0.066	0.17	pCi/g	U		0.17	0.081
299-W15-84	121.5	123.5	B120Y4		6/11/2001	TMANC	0.13	pCi/g	U		0.13	0.033	pCi/g	U		0.081	0.071	pCi/g	U		0.071	0.027
299-W15-84	123.5	125.4	B120Y5		6/11/2001	TMANC	0.044	pCi/g	U		0.044	0.011	pCi/g	U		0.062	0.072	pCi/g	U		0.072	0.033
299-W15-84	125.5	127	B121H2		6/11/2001	TMANC	0.32	pCi/g	U		0.32	-0.003	pCi/g	U		0.024	0.077	pCi/g	U		0.077	0.034
299-W15-84	127	129	B120Y6		6/11/2001	TMANC	0.048	pCi/g	U		0.048	-0.008	pCi/g	U		0.032	0.073	pCi/g	U		0.073	0.035
299-W15-84	130	132.3	B120Y7		6/12/2001	TMANC	0.044	pCi/g	U		0.044	0	pCi/g	U		0.18	0.072	pCi/g	U		0.072	0.032
299-W15-84	132	134.3	B120Y8		6/12/2001	TMANC	0.089	pCi/g	U		0.089	0.047	pCi/g	U		0.18	0.042	pCi/g	U		0.042	0.019
299-W15-84	141.5	143.5	B120Y9		6/12/2001	TMANC	0.32	pCi/g	U		0.32	-0.04	pCi/g	U		0.38	0.067	pCi/g	U		0.067	0.038
299-W15-84	151	153	B12100		6/12/2001	TMANC	0.12	pCi/g	U		0.12	0	pCi/g	U		0.22	0.062	pCi/g	U		0.062	0.03
299-W15-84	161	162.5	B12101		6/13/2001	TMANC	0.053	pCi/g	U		0.053	-0.033	pCi/g	U		0.31	0.072	pCi/g	U		0.072	0.041
299-W15-84	171	173	B12640		6/13/2001	TMANC	0.043	pCi/g	U		0.043	0.027	pCi/g	U		0.21	0.067	pCi/g	U		0.067	0.031
299-W15-84	193.5	195	B12632		6/15/2001	TMANC	0.043	pCi/g	U		0.043	-0.03	pCi/g	U		0.23	0.068	pCi/g	U		0.068	0.03

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Table C-3. Radiochemical Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cesium-137 (10045-97-3)			
						GEA			
						Units	Q	VQ	MDA
299-W15-84	110	111.8	B120X9		6/8/2001	pCi/g	U		0.029
299-W15-84	112.5	114.5	B120Y0		6/8/2001	pCi/g	U		0.039
299-W15-84	114.5	116.5	B120Y1		6/11/2001	pCi/g	U		0.03
299-W15-84	117	119	B120Y2		6/11/2001	pCi/g	U		0.033
299-W15-84	119.5	121	B120Y3		6/11/2001	pCi/g	U		0.081
299-W15-84	121.5	123.5	B120Y4		6/11/2001	pCi/g	U		0.027
299-W15-84	123.5	125.4	B120Y5		6/11/2001	pCi/g	U		0.033
299-W15-84	125.5	127	B121H2		6/11/2001	pCi/g	U		0.034
299-W15-84	127	129	B120Y6		6/11/2001	pCi/g	U		0.035
299-W15-84	130	132.3	B120Y7		6/12/2001	pCi/g	U		0.032
299-W15-84	132	134.3	B120Y8		6/12/2001	pCi/g	U		0.019
299-W15-84	141.5	143.5	B120Y9		6/12/2001	pCi/g	U		0.038
299-W15-84	151	153	B12100		6/12/2001	pCi/g	U		0.03
299-W15-84	161	162.5	B12101		6/13/2001	pCi/g	U		0.041
299-W15-84	171	173	B12640		6/13/2001	pCi/g	U		0.031
299-W15-84	193.5	195	B12632		6/15/2001	pCi/g	U		0.03

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Table C-3. Radiochemical Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cobalt-60 (10198-40-0)				Europium-152 (14683-23-9)				Europium-154 (15585-10-1)				Europium-155 (14391-16-3)					
						GEA				GEA				GEA				GEA					
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q
299-W15-84	110	111.8	B120X9		6/8/2001	0.033	pCi/g	U		0.033	0.069	pCi/g	U		0.069	0.11	pCi/g	U		0.11	0.064	pCi/g	U
299-W15-84	112.5	114.5	B120Y0		6/8/2001	0.04	pCi/g	U		0.04	0.087	pCi/g	U		0.087	0.14	pCi/g	U		0.14	0.15	pCi/g	U
299-W15-84	114.5	116.5	B120Y1		6/11/2001	0.03	pCi/g	U		0.03	0.08	pCi/g	U		0.08	0.11	pCi/g	U		0.11	0.13	pCi/g	U
299-W15-84	117	119	B120Y2		6/11/2001	0.035	pCi/g	U		0.035	0.073	pCi/g	U		0.073	0.12	pCi/g	U		0.12	0.11	pCi/g	U
299-W15-84	119.5	121	B120Y3		6/11/2001	0.09	pCi/g	U		0.09	0.22	pCi/g	U		0.22	0.24	pCi/g	U		0.24	0.2	pCi/g	U
299-W15-84	121.5	123.5	B120Y4		6/11/2001	0.032	pCi/g	U		0.032	0.078	pCi/g	U		0.078	0.093	pCi/g	U		0.093	0.086	pCi/g	U
299-W15-84	123.5	125.4	B120Y5		6/11/2001	0.038	pCi/g	U		0.038	0.08	pCi/g	U		0.08	0.12	pCi/g	U		0.12	0.071	pCi/g	U
299-W15-84	125.5	127	B121H2		6/11/2001	0.042	pCi/g	U		0.042	0.081	pCi/g	U		0.081	0.13	pCi/g	U		0.13	0.13	pCi/g	U
299-W15-84	127	129	B120Y6		6/11/2001	0.045	pCi/g	U		0.045	0.082	pCi/g	U		0.082	0.15	pCi/g	U		0.15	0.064	pCi/g	U
299-W15-84	130	132.3	B120Y7		6/12/2001	0.045	pCi/g	U		0.045	0.081	pCi/g	U		0.081	0.14	pCi/g	U		0.14	0.06	pCi/g	U
299-W15-84	132	134.3	B120Y8		6/12/2001	0.023	pCi/g	U		0.023	0.052	pCi/g	U		0.052	0.078	pCi/g	U		0.078	0.064	pCi/g	U
299-W15-84	141.5	143.5	B120Y9		6/12/2001	0.037	pCi/g	U		0.037	0.091	pCi/g	U		0.091	0.13	pCi/g	U		0.13	0.12	pCi/g	U
299-W15-84	151	153	B12100		6/12/2001	0.033	pCi/g	U		0.033	0.071	pCi/g	U		0.071	0.11	pCi/g	U		0.11	0.083	pCi/g	U
299-W15-84	161	162.5	B12101		6/13/2001	0.059	pCi/g	U		0.059	0.09	pCi/g	U		0.09	0.17	pCi/g	U		0.17	0.069	pCi/g	U
299-W15-84	171	173	B12640		6/13/2001	0.037	pCi/g	U		0.037	0.073	pCi/g	U		0.073	0.13	pCi/g	U		0.13	0.07	pCi/g	U
299-W15-84	193.5	195	B12632		6/15/2001	0.033	pCi/g	U		0.033	0.074	pCi/g	U		0.074	0.11	pCi/g	U		0.11	0.069	pCi/g	U

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Table C-3. Radiochemical Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	
						MDA
299-W15-84	110	111.8	B120X9		6/8/2001	0.064
299-W15-84	112.5	114.5	B120Y0		6/8/2001	0.15
299-W15-84	114.5	116.5	B120Y1		6/11/2001	0.13
299-W15-84	117	119	B120Y2		6/11/2001	0.11
299-W15-84	119.5	121	B120Y3		6/11/2001	0.2
299-W15-84	121.5	123.5	B120Y4		6/11/2001	0.086
299-W15-84	123.5	125.4	B120Y5		6/11/2001	0.071
299-W15-84	125.5	127	B121H2		6/11/2001	0.13
299-W15-84	127	129	B120Y6		6/11/2001	0.064
299-W15-84	130	132.3	B120Y7		6/12/2001	0.06
299-W15-84	132	134.3	B120Y8		6/12/2001	0.064
299-W15-84	141.5	143.5	B120Y9		6/12/2001	0.12
299-W15-84	151	153	B12100		6/12/2001	0.083
299-W15-84	161	162.5	B12101		6/13/2001	0.069
299-W15-84	171	173	B12640		6/13/2001	0.07
299-W15-84	193.5	195	B12632		6/15/2001	0.069

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Table C-3. Radiochemical Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Plutonium-238 (13981-16-3)					Plutonium-239/240 (PU-239/240)					Potassium-40 (13966-00-2)					Radium-226 (13982-63-3)			
						Sep/Plate/AEA					Sep/Plate/AEA					GEA					GEA			
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	0.028	pCi/g	U		0.21	0.028	pCi/g	U		0.21	17.3	pCi/g		0.34	0.589	pCi/g			
299-W15-84	112.5	114.5	B120Y0		6/8/2001	0	pCi/g	U		0.43	0.056	pCi/g	U		0.43	18.3	pCi/g		0.4	0.831	pCi/g			
299-W15-84	114.5	116.5	B120Y1		6/11/2001	0.064	pCi/g	U		0.31	0.032	pCi/g	U		0.25	16.7	pCi/g		0.44	0.825	pCi/g			
299-W15-84	117	119	B120Y2		6/11/2001	0	pCi/g	U		0.23	0	pCi/g	U		0.23	16.8	pCi/g		0.34	1.04	pCi/g			
299-W15-84	119.5	121	B120Y3		6/11/2001	0	pCi/g	U		0.25	0.032	pCi/g	U		0.25	9.51	pCi/g		0.98	0.94	pCi/g			
299-W15-84	121.5	123.5	B120Y4		6/11/2001	0	pCi/g	U		0.21	0	pCi/g	U		0.21	6.05	pCi/g		0.39	1.69	pCi/g			
299-W15-84	123.5	125.4	B120Y5		6/11/2001	0.051	pCi/g	U		0.2	0	pCi/g	U		0.2	10	pCi/g		0.36	0.838	pCi/g			
299-W15-84	125.5	127	B121H2		6/11/2001	-0.053	pCi/g	U		0.25	0.027	pCi/g	U		0.2	13.5	pCi/g		0.36	0.539	pCi/g			
299-W15-84	127	129	B120Y6		6/11/2001	0	pCi/g	U		0.18	0.048	pCi/g	U		0.18	9.05	pCi/g		0.52	0.397	pCi/g			
299-W15-84	130	132.3	B120Y7		6/12/2001	0.003	pCi/g	U		0.021	0.003	pCi/g	U		0.021	10.4	pCi/g		0.36	0.407	pCi/g			
299-W15-84	132	134.3	B120Y8		6/12/2001	0.015	pCi/g	U		0.023	0.027	pCi/g	J		0.023	12.1	pCi/g		0.2	0.335	pCi/g			
299-W15-84	141.5	143.5	B120Y9		6/12/2001	0.003	pCi/g	U		0.027	-0.003	pCi/g	U		0.031	15.7	pCi/g		0.38	0.437	pCi/g			
299-W15-84	151	153	B12100		6/12/2001	0.003	pCi/g	U		0.021	0.003	pCi/g	U		0.026	14	pCi/g		0.3	0.365	pCi/g			
299-W15-84	161	162.5	B12101		6/13/2001	-0.019	pCi/g	U		0.14	0.019	pCi/g	U		0.14	12.1	pCi/g		0.43	0.38	pCi/g			
299-W15-84	171	173	B12640		6/13/2001	0.018	pCi/g	U		0.14	-0.018	pCi/g	U		0.14	16.7	pCi/g		0.33	0.461	pCi/g			
299-W15-84	193.5	195	B12632		6/15/2001	-0.027	pCi/g	U		0.21	0	pCi/g	U		0.21	11.6	pCi/g		0.3	0.461	pCi/g			

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Table C-3. Radiochemical Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	
						MDA
299-W15-84	110	111.8	B120X9		6/8/2001	0.063
299-W15-84	112.5	114.5	B120Y0		6/8/2001	0.077
299-W15-84	114.5	116.5	B120Y1		6/11/2001	0.069
299-W15-84	117	119	B120Y2		6/11/2001	0.065
299-W15-84	119.5	121	B120Y3		6/11/2001	0.17
299-W15-84	121.5	123.5	B120Y4		6/11/2001	0.063
299-W15-84	123.5	125.4	B120Y5		6/11/2001	0.066
299-W15-84	125.5	127	B121H2		6/11/2001	0.074
299-W15-84	127	129	B120Y6		6/11/2001	0.081
299-W15-84	130	132.3	B120Y7		6/12/2001	0.066
299-W15-84	132	134.3	B120Y8		6/12/2001	0.042
299-W15-84	141.5	143.5	B120Y9		6/12/2001	0.069
299-W15-84	151	153	B12100		6/12/2001	0.057
299-W15-84	161	162.5	B12101		6/13/2001	0.073
299-W15-84	171	173	B12640		6/13/2001	0.06
299-W15-84	193.5	195	B12632		6/15/2001	0.064

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Table C-3. Radiochemical Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Radium-228 (15262-20-1)					Thorium-228 (14274-82-9)					Thorium-232 (TH-232)					Total beta radiostrom (SR-RAD)			
						GEA					GEA					GEA					Sep/GPC			
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	0.911	pCi/g			0.14	0.786	pCi/g			0.032	0.911	pCi/g			0.14	0.03	pCi/g	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	1.27	pCi/g			0.17	1.09	pCi/g			0.045	1.27	pCi/g			0.17	-0.017	pCi/g	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	1.24	pCi/g			0.17	1.23	pCi/g			0.039	1.24	pCi/g			0.17	-0.068	pCi/g	U	
299-W15-84	117	119	B120Y2		6/11/2001	1.66	pCi/g			0.13	1.43	pCi/g			0.034	1.66	pCi/g			0.13	-0.063	pCi/g	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	1.18	pCi/g			0.37	1.09	pCi/g			0.1	1.18	pCi/g			0.37	-0.052	pCi/g	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	0.371	pCi/g			0.12	0.356	pCi/g			0.04	0.371	pCi/g			0.12	0.107	pCi/g	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	0.494	pCi/g			0.14	0.477	pCi/g			0.039	0.494	pCi/g			0.14	0.133	pCi/g	U	
299-W15-84	125.5	127	B121H2		6/11/2001	0.639	pCi/g			0.19	0.515	pCi/g			0.042	0.639	pCi/g			0.19	-0.017	pCi/g	U	
299-W15-84	127	129	B120Y6		6/11/2001	0.677	pCi/g			0.17	0.47	pCi/g			0.04	0.677	pCi/g			0.17	0.017	pCi/g	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	0.477	pCi/g			0.13	0.44	pCi/g			0.037	0.477	pCi/g			0.13	-0.011	pCi/g	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	0.592	pCi/g			0.092	0.478	pCi/g			0.025	0.592	pCi/g			0.092	-0.008	pCi/g	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	0.791	pCi/g			0.19	0.698	pCi/g			0.04	0.791	pCi/g			0.19	-0.028	pCi/g	U	
299-W15-84	151	153	B12100		6/12/2001	0.666	pCi/g			0.11	0.572	pCi/g			0.032	0.666	pCi/g			0.11	0.016	pCi/g	U	
299-W15-84	161	162.5	B12101		6/13/2001	0.728	pCi/g			0.22	0.56	pCi/g			0.044	0.728	pCi/g			0.22	-0.003	pCi/g	U	
299-W15-84	171	173	B12640		6/13/2001	0.899	pCi/g			0.14	0.677	pCi/g			0.037	0.899	pCi/g			0.14	0.038	pCi/g	U	
299-W15-84	193.5	195	B12632		6/15/2001	0.988	pCi/g			0.14	0.876	pCi/g			0.038	0.988	pCi/g			0.14	-0.065	pCi/g	U	

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Table C-3. Radiochemical Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	ium
						MDA
299-W15-84	110	111.8	B120X9		6/8/2001	0.22
299-W15-84	112.5	114.5	B120Y0		6/8/2001	0.25
299-W15-84	114.5	116.5	B120Y1		6/11/2001	0.3
299-W15-84	117	119	B120Y2		6/11/2001	0.32
299-W15-84	119.5	121	B120Y3		6/11/2001	0.29
299-W15-84	121.5	123.5	B120Y4		6/11/2001	0.33
299-W15-84	123.5	125.4	B120Y5		6/11/2001	0.28
299-W15-84	125.5	127	B121H2		6/11/2001	0.28
299-W15-84	127	129	B120Y6		6/11/2001	0.27
299-W15-84	130	132.3	B120Y7		6/12/2001	0.26
299-W15-84	132	134.3	B120Y8		6/12/2001	0.26
299-W15-84	141.5	143.5	B120Y9		6/12/2001	0.27
299-W15-84	151	153	B12100		6/12/2001	0.26
299-W15-84	161	162.5	B12101		6/13/2001	0.27
299-W15-84	171	173	B12640		6/13/2001	0.29
299-W15-84	193.5	195	B12632		6/15/2001	0.28

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Table C-3. Radiochemical Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Uranium-235 (15117-96-1)				Uranium-238 (U-238)					
						GEA				GEA					
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-84	110	111.8	B120X9		6/8/2001	0.1	pCi/g	U		0.1	3.8	pCi/g	U		3.8
299-W15-84	112.5	114.5	B120Y0		6/8/2001	0.19	pCi/g	U		0.19	4.9	pCi/g	U		4.9
299-W15-84	114.5	116.5	B120Y1		6/11/2001	0.11	pCi/g	U		0.11	3.9	pCi/g	U		3.9
299-W15-84	117	119	B120Y2		6/11/2001	0.15	pCi/g	U		0.15	4.5	pCi/g	U		4.5
299-W15-84	119.5	121	B120Y3		6/11/2001	0.3	pCi/g	U		0.3	11	pCi/g	U		11
299-W15-84	121.5	123.5	B120Y4		6/11/2001	0.16	pCi/g	U		0.16	4.2	pCi/g	U		4.2
299-W15-84	123.5	125.4	B120Y5		6/11/2001	0.13	pCi/g	U		0.13	5	pCi/g	U		5
299-W15-84	125.5	127	B121H2		6/11/2001	0.16	pCi/g	U		0.16	4.7	pCi/g	U		4.7
299-W15-84	127	129	B120Y6		6/11/2001	0.11	pCi/g	U		0.11	5.9	pCi/g	U		5.9
299-W15-84	130	132.3	B120Y7		6/12/2001	0.096	pCi/g	U		0.096	5.2	pCi/g	U		5.2
299-W15-84	132	134.3	B120Y8		6/12/2001	0.086	pCi/g	U		0.086	2.6	pCi/g	U		2.6
299-W15-84	141.5	143.5	B120Y9		6/12/2001	0.16	pCi/g	U		0.16	4.5	pCi/g	U		4.5
299-W15-84	151	153	B12100		6/12/2001	0.12	pCi/g	U		0.12	4.1	pCi/g	U		4.1
299-W15-84	161	162.5	B12101		6/13/2001	0.11	pCi/g	U		0.11	6	pCi/g	U		6
299-W15-84	171	173	B12640		6/13/2001	0.11	pCi/g	U		0.11	3.9	pCi/g	U		3.9
299-W15-84	193.5	195	B12632		6/15/2001	0.11	pCi/g	U		0.11	3.5	pCi/g	U		3.5

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,2,4-Trichlorobenzene (120-82-1)				1,2-Dichlorobenzene (95-50-1)				1,3-Dichlorobenzene (541-73-1)				1,4-Dichlorobenzene (106-46-7)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	RLNP	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	RLNP	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	RLNP	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	RLNP	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	RLNP	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	RLNP	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	RLNP	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2,4,5-Trichlorophenol (95-95-4)				2,4,6-Trichlorophenol (88-06-2)				2,4-Dichlorophenol (120-83-2)				2,4-Dimethylphenol (105-67-9)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	920	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	920	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	950	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	1000	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	960	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	890	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	830	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	950	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	870	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	880	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	840	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2,4-Dinitrophenol (51-28-5)				2,4-Dinitrotoluene (121-14-2)				2,6-Dinitrotoluene (606-20-2)				2-Chloronaphthalene (91-58-7)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	920	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	920	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	950	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	1000	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	960	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	890	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	830	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	950	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	870	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	880	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	840	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Chlorophenol (95-57-8)				2-Methylnaphthalene (91-57-6)				2-Methylphenol (cresol, o-) (95-48-7)				2-Nitroaniline (88-74-4)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		920	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		920	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		950	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		1000	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		960	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		890	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		850	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		830	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		860	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		950	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		860	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		870	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		880	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		860	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		850	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		840	µg/kg	U	

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Nitrophenol (88-75-5)				3,3"-Dichlorobenzidine (91-94-1)				3-Nitroaniline (99-09-2)				4,6-Dinitro-2- methylphenol (534-52-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	370	µg/kg	U		370	µg/kg	U		920	µg/kg	U		920	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	370	µg/kg	U		370	µg/kg	U		920	µg/kg	U		920	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	380	µg/kg	U		380	µg/kg	U		950	µg/kg	U		950	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	400	µg/kg	U		400	µg/kg	U		1000	µg/kg	U		1000	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	380	µg/kg	U		380	µg/kg	U		960	µg/kg	U		960	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	350	µg/kg	U		350	µg/kg	U		890	µg/kg	U		890	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	340	µg/kg	U		340	µg/kg	U		850	µg/kg	U		850	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	330	µg/kg	U		330	µg/kg	U		830	µg/kg	U		830	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	340	µg/kg	U		340	µg/kg	U		860	µg/kg	U		860	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	380	µg/kg	U		380	µg/kg	U		950	µg/kg	U		950	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	340	µg/kg	U		340	µg/kg	U		860	µg/kg	U		860	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	350	µg/kg	U		350	µg/kg	U		870	µg/kg	U		870	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	350	µg/kg	U		350	µg/kg	U		880	µg/kg	U		880	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	340	µg/kg	U		340	µg/kg	U		860	µg/kg	U		860	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	340	µg/kg	U		340	µg/kg	U		850	µg/kg	U		850	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	340	µg/kg	U		340	µg/kg	U		840	µg/kg	U		840	µg/kg	U	

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	4-Bromophenylphenyl ether (101-55-3)				4-Chloro-3-methylphenol (59-50-7)				4-Chloroaniline (106-47-8)				4-Chlorophenylphenyl ether (7005-72-3)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	4-Methylphenol (cresol, p-) (106-44-5)				4-Nitroaniline (100-01-6)				4-Nitrophenol (100-02-7)				Acenaphthene (83-32-9)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	370	µg/kg	U		920	µg/kg	U		920	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	370	µg/kg	U		920	µg/kg	U		920	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	380	µg/kg	U		950	µg/kg	U		950	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	400	µg/kg	U		1000	µg/kg	U		1000	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	380	µg/kg	U		960	µg/kg	U		960	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	350	µg/kg	U		890	µg/kg	U		890	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	340	µg/kg	U		850	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	330	µg/kg	U		830	µg/kg	U		830	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	340	µg/kg	U		860	µg/kg	U		860	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	380	µg/kg	U		950	µg/kg	U		950	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	340	µg/kg	U		860	µg/kg	U		860	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	350	µg/kg	U		870	µg/kg	U		870	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	350	µg/kg	U		880	µg/kg	U		880	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	340	µg/kg	U		860	µg/kg	U		860	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	340	µg/kg	U		850	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	340	µg/kg	U		840	µg/kg	U		840	µg/kg	U		340	µg/kg	U	

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Acenaphthylene (208-96-8)				Anthracene (120-12-7)				Benzo(a)anthracene (56-55-3)				Benzo(a)pyrene (50-32-8)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Benzo(b)fluoranthene (205-99-2)				Benzo(ghi)perylene (191-24-2)				Benzo(k)fluoranthene (207-08-9)				Bis(2-chloro-1- methylethyl)ether (108-60-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Bis(2-Chloroethoxy)methane (111-91-1)				Bis(2-chloroethyl) ether (111-44-4)				Bis(2-ethylhexyl) phthalate (117-81-7)				Butylbenzylphthalate (85-68-7)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	370	µg/kg	U		370	µg/kg	U		101.751	µg/kg	J		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	370	µg/kg	U		370	µg/kg	U		26	µg/kg	J		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	380	µg/kg	U		380	µg/kg	U		36	µg/kg	J		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	350	µg/kg	U		350	µg/kg	U		37	µg/kg	J		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	330	µg/kg	U		330	µg/kg	U		1700	µg/kg			330	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	380	µg/kg	U		380	µg/kg	U		44	µg/kg	J		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	340	µg/kg	U		340	µg/kg	U		49	µg/kg	J		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	340	µg/kg	U		340	µg/kg	U		27	µg/kg	JB		340	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	340	µg/kg	U		340	µg/kg	U		25	µg/kg	JB		340	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Carbazole (86-74-8)				Chrysene (218-01-9)				Dibenz[a,h]anthracene (53-70-3)				Dibenzofuran (132-64-9)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	RLNP	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	RLNP	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	RLNP	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	RLNP	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	RLNP	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	RLNP	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	RLNP	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Diethylphthalate (84-66-2)				Dimethyl phthalate (131-11-3)				Di-n-butylphthalate (84-74-2)				Di-n-octylphthalate (117-84-0)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Fluoranthene (206-44-0)				Fluorene (86-73-7)				Hexachlorobenzene (118-74-1)				Hexachlorobutadiene (87-68-3)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Hexachlorocyclopentadiene (77-47-4)				Hexachloroethane (67-72-1)				Indeno(1,2,3-cd)pyrene (193-39-5)				Isophorone (78-59-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Naphthalene (91-20-3)				Nitrobenzene (98-95-3)				n-Nitrosodi-n- dipropylamine (621-64-7)				n- Nitrosodiphenylamine (86-30-6)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Pentachlorophenol (87-86-5)				Phenanthrene (85-01-8)				Phenol (108-95-2)				Pyrene (129-00-0)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	920	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	920	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	950	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	1000	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	960	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	890	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	830	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	950	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	870	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	880	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	840	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-4. Semi-Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tributyl phosphate (126-73-8)			
						8270			
						Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	380	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	400	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	340	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	330	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	340	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	380	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	350	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	350	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	340	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	340	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	340	µg/kg	U	

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Table C-5. Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1,2,2-Tetrachloroethane (79-34-5)				1,1,2-Trichloroethane (79-00-5)				1,1-Dichloroethane (75-34-3)			
							8260				8260				8260				8260			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	

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Table C-5. Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,1-Dichloroethene (75-35-4)				1,2-Dichloroethane (107-06-2)				1,2-Dichloroethene (Total) (540-59-0)				1,2-Dichloropropane (78-87-5)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	

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Table C-5. Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Butanone (78-93-3)				2-Hexanone (591-78-6)				2-Pentanone, 4-Methyl (108-10-1)				Acetone (67-64-1)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	12	µg/kg	U		12	µg/kg	U		12	µg/kg	U		12	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		10	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		10	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	12	µg/kg	U		12	µg/kg	U		12	µg/kg	U		12	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	12	µg/kg	U		12	µg/kg	U		12	µg/kg	U		12	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	7	µg/kg	J		11	µg/kg	U		11	µg/kg	U		19	µg/kg	B	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		9	µg/kg	J	
299-W15-84	125.5	127	B121H2		6/11/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		5	µg/kg	JB	
299-W15-84	127	129	B120Y6		6/11/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		10	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	11	µg/kg	U		11	µg/kg	U		11	µg/kg	U		7	µg/kg	J	
299-W15-84	132	134.3	B120Y8		6/12/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		12	µg/kg		
299-W15-84	141.5	143.5	B120Y9		6/12/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		6	µg/kg	JB	
299-W15-84	151	153	B12100		6/12/2001	11	µg/kg	U		11	µg/kg	U		11	µg/kg	U		8	µg/kg	JB	
299-W15-84	161	162.5	B12101		6/13/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		10	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		10	µg/kg	JB	
299-W15-84	193.5	195	B12632		6/15/2001	11	µg/kg	U		11	µg/kg	U		11	µg/kg	U		11	µg/kg	U	

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Table C-5. Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Benzene (71-43-2)				Bromodichloromethane (75-27-4)				Bromoform (75-25-2)				Bromomethane (74-83-9)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	

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Table C-5. Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon disulfide (75-15-0)				Carbon tetrachloride (56-23-5)				Chlorobenzene (108-90-7)				Chloroethane (75-00-3)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	6	µg/kg	U		2	µg/kg	J		6	µg/kg	U		12	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	6	µg/kg	U		9	µg/kg			6	µg/kg	U		12	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	

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Table C-5. Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Chloroform (67-66-3)				Chloromethane (74-87-3)				cis-1,3- Dichloropropene (10061-01-5)				Dibromochloromethane (124-48-1)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	6	µg/kg	U		12	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	5	µg/kg	J		12	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	5	µg/kg	J		12	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	

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Table C-5. Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Ethylbenzene (100-41-4)				Methylene chloride (75-09-2)				Styrene (100-42-5)				Tetrachloroethene (127-18-4)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	6	µg/kg	U		7	µg/kg	B		6	µg/kg	U		6	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	5	µg/kg	U		7	µg/kg	B		5	µg/kg	U		5	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	5	µg/kg	U		6	µg/kg	B		5	µg/kg	U		5	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	6	µg/kg	U		24	µg/kg	B		6	µg/kg	U		6	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	6	µg/kg	U		9	µg/kg	B		6	µg/kg	U		6	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	6	µg/kg	U		21	µg/kg	B		6	µg/kg	U		6	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	5	µg/kg	U		7	µg/kg	B		5	µg/kg	U		5	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	5	µg/kg	U		16	µg/kg	B		5	µg/kg	U		5	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	5	µg/kg	U		6	µg/kg	B		5	µg/kg	U		5	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	6	µg/kg	U		20	µg/kg	B		6	µg/kg	U		6	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	5	µg/kg	U		14	µg/kg	B		5	µg/kg	U		5	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	5	µg/kg	U		17	µg/kg	B		5	µg/kg	U		5	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	6	µg/kg	U		17	µg/kg	B		6	µg/kg	U		6	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	5	µg/kg	U		10	µg/kg	B		5	µg/kg	U		5	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	5	µg/kg	U		19	µg/kg	B		5	µg/kg	U		5	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	6	µg/kg	U		15	µg/kg	B		6	µg/kg	U		6	µg/kg	U	

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Table C-5. Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,3- Dichloropropene (10061-02-6)				Trichloroethene (79-01-6)				Vinyl chloride (75-01-4)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	

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Table C-5. Volatile Organic Analysis Results for 299-W15-84 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Xylenes (total) (1330-20-7)			
						8260			
						Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9		6/8/2001	6	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0		6/8/2001	5	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1		6/11/2001	5	µg/kg	U	
299-W15-84	117	119	B120Y2		6/11/2001	6	µg/kg	U	
299-W15-84	119.5	121	B120Y3		6/11/2001	6	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4		6/11/2001	6	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5		6/11/2001	5	µg/kg	U	
299-W15-84	125.5	127	B121H2		6/11/2001	5	µg/kg	U	
299-W15-84	127	129	B120Y6		6/11/2001	5	µg/kg	U	
299-W15-84	130	132.3	B120Y7		6/12/2001	6	µg/kg	U	
299-W15-84	132	134.3	B120Y8		6/12/2001	5	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9		6/12/2001	5	µg/kg	U	
299-W15-84	151	153	B12100		6/12/2001	6	µg/kg	U	
299-W15-84	161	162.5	B12101		6/13/2001	5	µg/kg	U	
299-W15-84	171	173	B12640		6/13/2001	5	µg/kg	U	
299-W15-84	193.5	195	B12632		6/15/2001	6	µg/kg	U	

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Table C-6. Metal Analysis Results for 299-W15-95 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Aluminum (7429-90-5)				Antimony (7440-36-0)				Barium (7440-39-3)				Beryllium (7440-41-7)			
							6010				6010				6010				6010			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	RLNP	5640000	µg/kg			961	µg/kg	U	68400	µg/kg			208	µg/kg			
299-W15-95	99999	107	B120W9		5/21/2001	RLNP	8470000	µg/kg			214	µg/kg	U	94700	µg/kg			364	µg/kg			
299-W15-95	99999	109.5	B120X0		5/21/2001	RLNP	10500000	µg/kg			223	µg/kg	U	115000	µg/kg			497	µg/kg			
299-W15-95	109.5	112	B120X1		5/22/2001	RLNP	9240000	µg/kg			220	µg/kg	U	81200	µg/kg			330	µg/kg			
299-W15-95	112	114.5	B120X2		5/22/2001	RLNP	3930000	µg/kg			220	µg/kg	U	120000	µg/kg			100	µg/kg			
299-W15-95	116	118	B120X3		5/22/2001	RLNP	6920000	µg/kg			190	µg/kg	U	95300	µg/kg			170	µg/kg			
299-W15-95	120	122	B120X4		5/22/2001	RLNP	6460000	µg/kg			190	µg/kg	U	74500	µg/kg			190	µg/kg			
299-W15-95	122.5	125	B120X5		5/23/2001	RLNP	6990000	µg/kg			192	µg/kg	U	56700	µg/kg			383	µg/kg			
299-W15-95	130	132.5	B120X6		5/25/2001	RLNP	7380000	µg/kg			195	µg/kg	U	57700	µg/kg			330	µg/kg			
299-W15-95	155	157.5	B120X7		5/29/2001	RLNP	5120000	µg/kg			195	µg/kg	U	38300	µg/kg			243	µg/kg			
299-W15-95	185	187.5	B120X8		5/31/2001	RLNP	6240000	µg/kg			195	µg/kg	U	58100	µg/kg			268	µg/kg			

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Table C-6. Metal Analysis Results for 299-W15-95 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cadmium (7440-43-9)				Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	774	µg/kg			7630000	µg/kg			19200	µg/kg			25900	µg/kg		
299-W15-95	99999	107	B120W9		5/21/2001	195	µg/kg			13100000	µg/kg			14200	µg/kg			7900	µg/kg		
299-W15-95	99999	109.5	B120X0		5/21/2001	222	µg/kg			14200000	µg/kg			16000	µg/kg			9000	µg/kg		
299-W15-95	109.5	112	B120X1		5/22/2001	180	µg/kg			10500000	µg/kg			20000	µg/kg			7500	µg/kg		
299-W15-95	112	114.5	B120X2		5/22/2001	130	µg/kg			231000000	µg/kg			5600	µg/kg			4200	µg/kg		
299-W15-95	116	118	B120X3		5/22/2001	170	µg/kg			10700000	µg/kg			30800	µg/kg			7700	µg/kg		
299-W15-95	120	122	B120X4		5/22/2001	160	µg/kg			5710000	µg/kg			16900	µg/kg			7800	µg/kg		
299-W15-95	122.5	125	B120X5		5/23/2001	30	µg/kg	U		4630000	µg/kg			31300	µg/kg			7200	µg/kg		
299-W15-95	130	132.5	B120X6		5/25/2001	31	µg/kg	U		5920000	µg/kg			9800	µg/kg			5300	µg/kg		
299-W15-95	155	157.5	B120X7		5/29/2001	31	µg/kg	U		2440000	µg/kg			13300	µg/kg			4900	µg/kg		
299-W15-95	185	187.5	B120X8		5/31/2001	31	µg/kg	U		2630000	µg/kg			21400	µg/kg			5700	µg/kg		

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Table C-6. Metal Analysis Results for 299-W15-95 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Copper (7440-50-8)				Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	2580000	µg/kg			99700000	µg/kg			401000	µg/kg			3870000	µg/kg		
299-W15-95	99999	107	B120W9		5/21/2001	17100	µg/kg			17400000	µg/kg			8200	µg/kg			6380000	µg/kg		
299-W15-95	99999	109.5	B120X0		5/21/2001	21500	µg/kg			20500000	µg/kg			10900	µg/kg			7700000	µg/kg		
299-W15-95	109.5	112	B120X1		5/22/2001	19600	µg/kg			18400000	µg/kg			7600	µg/kg			6820000	µg/kg		
299-W15-95	112	114.5	B120X2		5/22/2001	19400	µg/kg			7550000	µg/kg			1600	µg/kg			14400000	µg/kg		
299-W15-95	116	118	B120X3		5/22/2001	16700	µg/kg			22300000	µg/kg			2500	µg/kg			4210000	µg/kg		
299-W15-95	120	122	B120X4		5/22/2001	17000	µg/kg			21400000	µg/kg			2500	µg/kg			3850000	µg/kg		
299-W15-95	122.5	125	B120X5		5/23/2001	16900	µg/kg			19400000	µg/kg			2500	µg/kg			3970000	µg/kg		
299-W15-95	130	132.5	B120X6		5/25/2001	12400	µg/kg			19000000	µg/kg			3600	µg/kg			4960000	µg/kg		
299-W15-95	155	157.5	B120X7		5/29/2001	10600	µg/kg			12200000	µg/kg			3600	µg/kg			3570000	µg/kg		
299-W15-95	185	187.5	B120X8		5/31/2001	9900	µg/kg			14100000	µg/kg			3600	µg/kg			3710000	µg/kg		

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Table C-6. Metal Analysis Results for 299-W15-95 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Manganese (7439-96-5)				Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)			
						6010				7471				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	917000	µg/kg			17	µg/kg	U		24300	µg/kg			1370000	µg/kg		
299-W15-95	99999	107	B120W9		5/21/2001	373000	µg/kg			19	µg/kg	U		14000	µg/kg			2040000	µg/kg		
299-W15-95	99999	109.5	B120X0		5/21/2001	411000	µg/kg			19	µg/kg	U		15700	µg/kg			2410000	µg/kg		
299-W15-95	109.5	112	B120X1		5/22/2001	290000	µg/kg			20	µg/kg	U		18800	µg/kg			2070000	µg/kg		
299-W15-95	112	114.5	B120X2		5/22/2001	277000	µg/kg			30	µg/kg			7400	µg/kg			758000	µg/kg		
299-W15-95	116	118	B120X3		5/22/2001	268000	µg/kg			10	µg/kg	U		20400	µg/kg			753000	µg/kg		
299-W15-95	120	122	B120X4		5/22/2001	283000	µg/kg			10	µg/kg	U		15100	µg/kg			750000	µg/kg		
299-W15-95	122.5	125	B120X5		5/23/2001	271000	µg/kg			15	µg/kg	U		19600	µg/kg			944000	µg/kg		
299-W15-95	130	132.5	B120X6		5/25/2001	343000	µg/kg			40	µg/kg			8800	µg/kg			1140000	µg/kg		
299-W15-95	155	157.5	B120X7		5/29/2001	192000	µg/kg			16	µg/kg	U		16000	µg/kg			925000	µg/kg		
299-W15-95	185	187.5	B120X8		5/31/2001	217000	µg/kg			17	µg/kg	U		17800	µg/kg			1440000	µg/kg		

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Table C-6. Metal Analysis Results for 299-W15-95 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Silver (7440-22-4)				Sodium (7440-23-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	506	µg/kg	U		124000	µg/kg			24200	µg/kg			202000	µg/kg		
299-W15-95	99999	107	B120W9		5/21/2001	113	µg/kg	U		170000	µg/kg			30400	µg/kg			43500	µg/kg		
299-W15-95	99999	109.5	B120X0		5/21/2001	118	µg/kg	U		179000	µg/kg			34600	µg/kg			53400	µg/kg		
299-W15-95	109.5	112	B120X1		5/22/2001	120	µg/kg	U		224000	µg/kg			29700	µg/kg			43300	µg/kg		
299-W15-95	112	114.5	B120X2		5/22/2001	110	µg/kg	U		326000	µg/kg			28800	µg/kg			14000	µg/kg		
299-W15-95	116	118	B120X3		5/22/2001	100	µg/kg	U		803000	µg/kg			81300	µg/kg			38000	µg/kg		
299-W15-95	120	122	B120X4		5/22/2001	100	µg/kg	U		648000	µg/kg			69200	µg/kg			37700	µg/kg		
299-W15-95	122.5	125	B120X5		5/23/2001	101	µg/kg	U		667000	µg/kg			58800	µg/kg			44800	µg/kg		
299-W15-95	130	132.5	B120X6		5/25/2001	102	µg/kg	U		214000	µg/kg			47400	µg/kg			40900	µg/kg		
299-W15-95	155	157.5	B120X7		5/29/2001	103	µg/kg	U		295000	µg/kg			25200	µg/kg			30000	µg/kg		
299-W15-95	185	187.5	B120X8		5/31/2001	103	µg/kg	U		385000	µg/kg			25500	µg/kg			30000	µg/kg		

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Table C-7. General Chemistry Analysis Results for 299-W15-95 (216-Z-9)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Oil and grease (OIL/GREASE)			
							9071			
							Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	RLNP	738000	µg/kg		
299-W15-95	99999	107	B120W9		5/21/2001	RLNP	209000	µg/kg		
299-W15-95	99999	109.5	B120X0		5/21/2001	RLNP	240000	µg/kg		
299-W15-95	109.5	112	B120X1		5/22/2001	RLNP	236000	µg/kg		
299-W15-95	112	114.5	B120X2		5/22/2001	RLNP	159000	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	RLNP	164000	µg/kg		
299-W15-95	120	122	B120X4		5/22/2001	RLNP	136000	µg/kg		
299-W15-95	122.5	125	B120X5		5/23/2001	RLNP	274000	µg/kg		
299-W15-95	130	132.5	B120X6		5/25/2001	RLNP	362000	µg/kg		
299-W15-95	155	157.5	B120X7		5/29/2001	RLNP	137000	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	RLNP	273000	µg/kg		

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Table C-8. Radiochemical Analysis Results for 299-W15-95 (216-Z-9) (7 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Americium-241 (14596-10-2)				Americium-241 (14596-10-2)				Antimony-125 (14234-35-6)						
							GEA				IX/Plate/AEA				GEA						
							Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-95	102.5	104.5	B120W8		5/21/2001	TMANC	0.098	pCi/g	U		0.098	-0.069	pCi/g	U		0.18	0.047	pCi/g	U		0.047
299-W15-95	99999	107	B120W9		5/21/2001	TMANC	0.32	pCi/g	U		0.32	0.056	pCi/g	U		0.21	0.077	pCi/g	U		0.077
299-W15-95	99999	109.5	B120X0		5/21/2001	TMANC	0.052	pCi/g	U		0.052	-0.046	pCi/g	U		0.18	0.084	pCi/g	U		0.084
299-W15-95	109.5	112	B120X1		5/22/2001	TMANC	0.4	pCi/g	U		0.4	0.1	pCi/g	U		0.26	0.086	pCi/g	U		0.086
299-W15-95	112	114.5	B120X2		5/22/2001	TMANC	0.062	pCi/g	U		0.062	0.033	pCi/g	U		0.25	0.093	pCi/g	U		0.093
299-W15-95	116	118	B120X3		5/22/2001	TMANC	0.12	pCi/g	U		0.12	0	pCi/g	U		0.34	0.071	pCi/g	U		0.071
299-W15-95	118	118.5	B121H0		5/22/2001	TMANC	0.24	pCi/g	U		0.24	-0.09	pCi/g	U		0.34	0.064	pCi/g	U		0.064
299-W15-95	120	122	B120X4		5/22/2001	TMANC	0.059	pCi/g	U		0.059	0.065	pCi/g	U		0.5	0.034	pCi/g	U		0.034
299-W15-95	122.5	125	B120X5		5/23/2001	TMANC	0.081	pCi/g	U		0.081	0.025	pCi/g	U		0.061	0.04	pCi/g	U		0.04
299-W15-95	130	132.5	B120X6		5/25/2001	TMANC	0.28	pCi/g	U		0.28	0	pCi/g	U		0.28	0.074	pCi/g	U		0.074
299-W15-95	145	146.5	B121H1		5/25/2001	TMANC	0.26	pCi/g	U		0.26	0	pCi/g	U		0.23	0.066	pCi/g	U		0.066
299-W15-95	155	157.5	B120X7		5/29/2001	TMANC	0.044	pCi/g	U		0.044	-0.016	pCi/g	U		0.13	0.065	pCi/g	U		0.065
299-W15-95	185	187.5	B120X8		5/31/2001	TMANC	0.17	pCi/g	U		0.17	0.073	pCi/g	U		0.19	0.1	pCi/g	U		0.1

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Table C-8. Radiochemical Analysis Results for 299-W15-95 (216-Z-9) (7 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Barium-133 (13981-41-4)					Cesium-137 (10045-97-3)					Cobalt-60 (10198-40-0)				
						GEA					GEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-95	102.5	104.5	B120W8		5/21/2001	0.024	pCi/g	U		0.024	0.024	pCi/g	U		0.024	0.026	pCi/g	U		0.026
299-W15-95	99999	107	B120W9		5/21/2001	0.039	pCi/g	U		0.039	0.04	pCi/g	U		0.04	0.044	pCi/g	U		0.044
299-W15-95	99999	109.5	B120X0		5/21/2001	0.038	pCi/g	U		0.038	0.036	pCi/g	U		0.036	0.042	pCi/g	U		0.042
299-W15-95	109.5	112	B120X1		5/22/2001	0.044	pCi/g	U		0.044	0.045	pCi/g	U		0.045	0.049	pCi/g	U		0.049
299-W15-95	112	114.5	B120X2		5/22/2001	0.043	pCi/g	U		0.043	0.041	pCi/g	U		0.041	0.042	pCi/g	U		0.042
299-W15-95	116	118	B120X3		5/22/2001	0.038	pCi/g	U		0.038	0.031	pCi/g	U		0.031	0.038	pCi/g	U		0.038
299-W15-95	118	118.5	B121H0		5/22/2001	0.029	pCi/g	U		0.029	0.03	pCi/g	U		0.03	0.034	pCi/g	U		0.034
299-W15-95	120	122	B120X4		5/22/2001	0.019	pCi/g	U		0.019	0.016	pCi/g	U		0.016	0.019	pCi/g	U		0.019
299-W15-95	122.5	125	B120X5		5/23/2001						0.018	pCi/g	U		0.018	0.02	pCi/g	U		0.02
299-W15-95	130	132.5	B120X6		5/25/2001						0.035	pCi/g	U		0.035	0.041	pCi/g	U		0.041
299-W15-95	145	146.5	B121H1		5/25/2001						0.034	pCi/g	U		0.034	0.034	pCi/g	U		0.034
299-W15-95	155	157.5	B120X7		5/29/2001						0.032	pCi/g	U		0.032	0.033	pCi/g	U		0.033
299-W15-95	185	187.5	B120X8		5/31/2001						0.041	pCi/g	U		0.041	0.055	pCi/g	U		0.055

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Table C-8. Radiochemical Analysis Results for 299-W15-95 (216-Z-9) (7 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Europium-152 (14683-23-9)					Europium-154 (15585-10-1)					Europium-155 (14391-16-3)				
						GEA					GEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-95	102.5	104.5	B120W8		5/21/2001	0.06	pCi/g	U		0.06	0.082	pCi/g	U		0.082	0.07	pCi/g	U		0.07
299-W15-95	99999	107	B120W9		5/21/2001	0.088	pCi/g	U		0.088	0.13	pCi/g	U		0.13	0.14	pCi/g	U		0.14
299-W15-95	99999	109.5	B120X0		5/21/2001	0.087	pCi/g	U		0.087	0.13	pCi/g	U		0.13	0.079	pCi/g	U		0.079
299-W15-95	109.5	112	B120X1		5/22/2001	0.1	pCi/g	U		0.1	0.14	pCi/g	U		0.14	0.17	pCi/g	U		0.17
299-W15-95	112	114.5	B120X2		5/22/2001	0.11	pCi/g	U		0.11	0.12	pCi/g	U		0.12	0.092	pCi/g	U		0.092
299-W15-95	116	118	B120X3		5/22/2001	0.088	pCi/g	U		0.088	0.13	pCi/g	U		0.13	0.13	pCi/g	U		0.13
299-W15-95	118	118.5	B121H0		5/22/2001	0.073	pCi/g	U		0.073	0.11	pCi/g	U		0.11	0.11	pCi/g	U		0.11
299-W15-95	120	122	B120X4		5/22/2001	0.037	pCi/g	U		0.037	0.062	pCi/g	U		0.062	0.048	pCi/g	U		0.048
299-W15-95	122.5	125	B120X5		5/23/2001	0.042	pCi/g	U		0.042	0.07	pCi/g	U		0.07	0.058	pCi/g	U		0.058
299-W15-95	130	132.5	B120X6		5/25/2001	0.081	pCi/g	U		0.081	0.14	pCi/g	U		0.14	0.12	pCi/g	U		0.12
299-W15-95	145	146.5	B121H1		5/25/2001	0.075	pCi/g	U		0.075	0.12	pCi/g	U		0.12	0.12	pCi/g	U		0.12
299-W15-95	155	157.5	B120X7		5/29/2001	0.074	pCi/g	U		0.074	0.12	pCi/g	U		0.12	0.07	pCi/g	U		0.07
299-W15-95	185	187.5	B120X8		5/31/2001	0.12	pCi/g	U		0.12	0.19	pCi/g	U		0.19	0.12	pCi/g	U		0.12

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Table C-8. Radiochemical Analysis Results for 299-W15-95 (216-Z-9) (7 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Plutonium-238 (13981-16-3)					Plutonium-239/240 (PU-239/240)					Potassium-40 (13966-00-2)				
						Sep/Plate/AEA					Sep/Plate/AEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-95	102.5	104.5	B120W8		5/21/2001	-0.029	pCi/g	U		0.23	0	pCi/g	U		0.23	13.5	pCi/g			0.2
299-W15-95	99999	107	B120W9		5/21/2001	-0.022	pCi/g	U		0.17	0	pCi/g	U		0.17	15.7	pCi/g			0.4
299-W15-95	99999	109.5	B120X0		5/21/2001	0	pCi/g	U		0.26	0	pCi/g	U		0.26	18.7	pCi/g			0.38
299-W15-95	109.5	112	B120X1		5/22/2001	-0.026	pCi/g	U		0.25	0	pCi/g	U		0.2	17.3	pCi/g			0.46
299-W15-95	112	114.5	B120X2		5/22/2001	0.044	pCi/g	U		0.24	0.022	pCi/g	U		0.24	2.88	pCi/g			0.47
299-W15-95	116	118	B120X3		5/22/2001	-0.005	pCi/g	U		0.05	-0.011	pCi/g	U		0.042	8.44	pCi/g			0.56
299-W15-95	118	118.5	B121H0		5/22/2001	0.007	pCi/g	U		0.039	0.01	pCi/g	U		0.033	10.7	pCi/g			0.34
299-W15-95	120	122	B120X4		5/22/2001	-0.006	pCi/g	U		0.038	0.014	pCi/g	U		0.022	8.81	pCi/g			0.16
299-W15-95	122.5	125	B120X5		5/23/2001	0	pCi/g	U		0.18	0.024	pCi/g	U		0.18	10.7	pCi/g			0.22
299-W15-95	130	132.5	B120X6		5/25/2001	0.084	pCi/g	U		0.21	0.056	pCi/g	U		0.21	13.2	pCi/g			0.42
299-W15-95	145	146.5	B121H1		5/25/2001	0	pCi/g	U		0.21	0.027	pCi/g	U		0.21	14.2	pCi/g			0.19
299-W15-95	155	157.5	B120X7		5/29/2001	0.028	pCi/g	U		0.27	0.056	pCi/g	U		0.21	16.2	pCi/g			0.36
299-W15-95	185	187.5	B120X8		5/31/2001	0	pCi/g	U		0.23	-0.024	pCi/g	U		0.18	11.6	pCi/g			0.86

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Table C-8. Radiochemical Analysis Results for 299-W15-95 (216-Z-9) (7 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Radium-226 (13982-63-3)					Radium-228 (15262-20-1)					Thorium-228 (14274-82-9)				
						GEA					GEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-95	102.5	104.5	B120W8		5/21/2001	0.414	pCi/g			0.048	0.723	pCi/g			0.11	0.62	pCi/g			0.03
299-W15-95	99999	107	B120W9		5/21/2001	0.731	pCi/g			0.074	1.15	pCi/g			0.19	1.01	pCi/g			0.043
299-W15-95	99999	109.5	B120X0		5/21/2001	0.855	pCi/g			0.077	1.52	pCi/g			0.16	1.32	pCi/g			0.045
299-W15-95	109.5	112	B120X1		5/22/2001	1.05	pCi/g			0.08	1.57	pCi/g			0.2	1.44	pCi/g			0.052
299-W15-95	112	114.5	B120X2		5/22/2001	2.55	pCi/g			0.08	0.339	pCi/g			0.17	0.31	pCi/g			0.05
299-W15-95	116	118	B120X3		5/22/2001	0.498	pCi/g			0.071	0.55	pCi/g			0.14	0.475	pCi/g			0.042
299-W15-95	118	118.5	B121H0		5/22/2001	0.552	pCi/g			0.054	0.634	pCi/g			0.13	0.487	pCi/g			0.034
299-W15-95	120	122	B120X4		5/22/2001	0.302	pCi/g			0.035	0.487	pCi/g			0.062	0.394	pCi/g			0.022
299-W15-95	122.5	125	B120X5		5/23/2001	0.344	pCi/g			0.037	0.517	pCi/g			0.085	0.464	pCi/g			0.025
299-W15-95	130	132.5	B120X6		5/25/2001	0.292	pCi/g			0.076	0.492	pCi/g			0.13	0.474	pCi/g			0.07
299-W15-95	145	146.5	B121H1		5/25/2001	0.354	pCi/g			0.058	0.505	pCi/g			0.16	0.401	pCi/g			0.038
299-W15-95	155	157.5	B120X7		5/29/2001	0.356	pCi/g			0.053	0.707	pCi/g			0.14	0.648	pCi/g			0.035
299-W15-95	185	187.5	B120X8		5/31/2001	0.406	pCi/g			0.11	0.826	pCi/g			0.23	0.708	pCi/g			0.057

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Table C-8. Radiochemical Analysis Results for 299-W15-95 (216-Z-9) (7 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Thorium-232 (TH-232)					Total beta radiostrontium (SR-RAD)					Uranium-235 (15117-96-1)				
						GEA					Sep/GPC					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-95	102.5	104.5	B120W8		5/21/2001	0.723	pCi/g			0.11	0.067	pCi/g	U		0.27	0.097	pCi/g	U		0.097
299-W15-95	99999	107	B120W9		5/21/2001	1.15	pCi/g			0.19	0.083	pCi/g	U		0.27	0.17	pCi/g	U		0.17
299-W15-95	99999	109.5	B120X0		5/21/2001	1.52	pCi/g			0.16	0.001	pCi/g	U		0.27	0.13	pCi/g	U		0.13
299-W15-95	109.5	112	B120X1		5/22/2001	1.57	pCi/g			0.2	0.364	pCi/g	J		0.26	0.2	pCi/g	U		0.2
299-W15-95	112	114.5	B120X2		5/22/2001	0.339	pCi/g			0.17	-0.085	pCi/g	U		0.25	0.166	pCi/g	U		0.21
299-W15-95	116	118	B120X3		5/22/2001	0.55	pCi/g			0.14	-0.042	pCi/g	U		0.25	0.13	pCi/g	U		0.13
299-W15-95	118	118.5	B121H0		5/22/2001	0.634	pCi/g			0.13	0.355	pCi/g	J		0.28	0.14	pCi/g	U		0.14
299-W15-95	120	122	B120X4		5/22/2001	0.487	pCi/g			0.062	0.017	pCi/g	U		0.24	0.067	pCi/g	U		0.067
299-W15-95	122.5	125	B120X5		5/23/2001	0.517	pCi/g			0.085	0.123	pCi/g	U		0.27	0.081	pCi/g	U		0.081
299-W15-95	130	132.5	B120X6		5/25/2001	0.492	pCi/g			0.13	0.069	pCi/g	U		0.28	0.16	pCi/g	U		0.16
299-W15-95	145	146.5	B121H1		5/25/2001	0.505	pCi/g			0.16	-0.161	pCi/g	U		0.3	0.15	pCi/g	U		0.15
299-W15-95	155	157.5	B120X7		5/29/2001	0.707	pCi/g			0.14	-0.021	pCi/g	U		0.2	0.11	pCi/g	U		0.11
299-W15-95	185	187.5	B120X8		5/31/2001	0.826	pCi/g			0.23	-0.002	pCi/g	U		0.27	0.17	pCi/g	U		0.17

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Table C-8. Radiochemical Analysis Results for 299-W15-95 (216-Z-9) (7 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Uranium-238 (U-238)				
						GEA				
						Conc'n	Units	Q	VQ	MDA
299-W15-95	102.5	104.5	B120W8		5/21/2001	3	pCi/g	U		3
299-W15-95	99999	107	B120W9		5/21/2001	5.1	pCi/g	U		5.1
299-W15-95	99999	109.5	B120X0		5/21/2001	4.6	pCi/g	U		4.6
299-W15-95	109.5	112	B120X1		5/22/2001	5.4	pCi/g	U		5.4
299-W15-95	112	114.5	B120X2		5/22/2001	5.6	pCi/g	U		5.6
299-W15-95	116	118	B120X3		5/22/2001	4.4	pCi/g	U		4.4
299-W15-95	118	118.5	B121H0		5/22/2001	3.9	pCi/g	U		3.9
299-W15-95	120	122	B120X4		5/22/2001	2.3	pCi/g	U		2.3
299-W15-95	122.5	125	B120X5		5/23/2001	2.2	pCi/g	U		2.2
299-W15-95	130	132.5	B120X6		5/25/2001	5.2	pCi/g	U		5.2
299-W15-95	145	146.5	B121H1		5/25/2001	4.8	pCi/g	U		4.8
299-W15-95	155	157.5	B120X7		5/29/2001	4.2	pCi/g	U		4.2
299-W15-95	185	187.5	B120X8		5/31/2001	6.4	pCi/g	U		6.4

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,2,4-Trichlorobenzene (120-82-1)				1,2-Dichlorobenzene (95-50-1)				1,3-Dichlorobenzene (541-73-1)				1,4-Dichlorobenzene (106-46-7)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	RLNP	1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	RLNP	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	RLNP	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	RLNP	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	RLNP	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	RLNP	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2,4,5-Trichlorophenol (95-95-4)				2,4,6-Trichlorophenol (88-06-2)				2,4-Dichlorophenol (120-83-2)				2,4-Dimethylphenol (105-67-9)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	4400	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	900	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	990	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	980	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	1000	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	1800	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	870	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2,4-Dinitrophenol (51-28-5)				2,4-Dinitrotoluene (121-14-2)				2,6-Dinitrotoluene (606-20-2)				2-Chloronaphthalene (91-58-7)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	4400	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	900	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	990	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	980	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	1000	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	1800	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	870	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Chlorophenol (95-57-8)				2-Methylnaphthalene (91-57-6)				2-Methylphenol (cresol, o-) (95-48-7)				2-Nitroaniline (88-74-4)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	1700	µg/kg	U		250	µg/kg	J		1700	µg/kg	U		4400	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		900	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		990	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		980	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		1000	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		1800	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		850	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		850	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		850	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		860	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		870	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		850	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		860	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		860	µg/kg	U	

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Nitrophenol (88-75-5)				3,3'-Dichlorobenzidine (91-94-1)				3-Nitroaniline (99-09-2)				4,6-Dinitro-2- methylphenol (534-52-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	1700	µg/kg	U		1700	µg/kg	U		4400	µg/kg	U		4400	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	360	µg/kg	U		360	µg/kg	U		900	µg/kg	U		900	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	390	µg/kg	U		390	µg/kg	U		990	µg/kg	U		990	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	390	µg/kg	U		390	µg/kg	U		980	µg/kg	U		980	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	400	µg/kg	U		400	µg/kg	U		1000	µg/kg	U		1000	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	730	µg/kg	U		730	µg/kg	U		1800	µg/kg	U		1800	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	340	µg/kg	U		340	µg/kg	U		850	µg/kg	U		850	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	340	µg/kg	U		340	µg/kg	U		850	µg/kg	U		850	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	340	µg/kg	U		340	µg/kg	U		850	µg/kg	U		850	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	340	µg/kg	U		340	µg/kg	U		860	µg/kg	U		860	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	350	µg/kg	U		350	µg/kg	U		870	µg/kg	U		870	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	340	µg/kg	U		340	µg/kg	U		850	µg/kg	U		850	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	340	µg/kg	U		340	µg/kg	U		860	µg/kg	U		860	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	340	µg/kg	U		340	µg/kg	U		860	µg/kg	U		860	µg/kg	U	

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	4-Bromophenylphenyl ether (101-55-3)				4-Chloro-3-methylphenol (59-50-7)				4-Chloroaniline (106-47-8)				4-Chlorophenylphenyl ether (7005-72-3)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	4-Methylphenol (cresol, p-) (106-44-5)				4-Nitroaniline (100-01-6)				4-Nitrophenol (100-02-7)				Acenaphthene (83-32-9)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	1700	µg/kg	U		4400	µg/kg	U		4400	µg/kg	U		170	µg/kg	J	
299-W15-95	99999	107	B120W9		5/21/2001	360	µg/kg	U		900	µg/kg	U		900	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	390	µg/kg	U		990	µg/kg	U		990	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	390	µg/kg	U		980	µg/kg	U		980	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	400	µg/kg	U		1000	µg/kg	U		1000	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	730	µg/kg	U		1800	µg/kg	U		1800	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	340	µg/kg	U		850	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	340	µg/kg	U		850	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	340	µg/kg	U		850	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	340	µg/kg	U		860	µg/kg	U		860	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	350	µg/kg	U		870	µg/kg	U		870	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	340	µg/kg	U		850	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	340	µg/kg	U		860	µg/kg	U		860	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	340	µg/kg	U		860	µg/kg	U		860	µg/kg	U		340	µg/kg	U	

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Acenaphthylene (208-96-8)				Anthracene (120-12-7)				Benzo(a)anthracene (56-55-3)				Benzo(a)pyrene (50-32-8)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	340	µg/kg	J		88	µg/kg	J		150	µg/kg	J		110	µg/kg	J	
299-W15-95	99999	107	B120W9		5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Benzo(b)fluoranthene (205-99-2)				Benzo(ghi)perylene (191-24-2)				Benzo(k)fluoranthene (207-08-9)				Bis(2-chloro-1- methylethyl)ether (108-60-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	130	µg/kg	J		310	µg/kg	J		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Bis(2-Chloroethoxy)methane (111-91-1)				Bis(2-chloroethyl) ether (111-44-4)				Bis(2-ethylhexyl) phthalate (117-81-7)				Butylbenzylphthalate (85-68-7)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	1700	µg/kg	U		1700	µg/kg	U		3200	µg/kg			1700	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	360	µg/kg	U		360	µg/kg	U		500	µg/kg			360	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	390	µg/kg	U		390	µg/kg	U		45	µg/kg	J		390	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	400	µg/kg	U		400	µg/kg	U		37	µg/kg	J		400	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	730	µg/kg	U		730	µg/kg	U		126.004	µg/kg	J		730	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	340	µg/kg	U		340	µg/kg	U		19.676	µg/kg	J		340	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	340	µg/kg	U		340	µg/kg	U		18	µg/kg	J		340	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	340	µg/kg	U		340	µg/kg	U		34	µg/kg	JB		340	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	340	µg/kg	U		340	µg/kg	U		60	µg/kg	JB		340	µg/kg	U	

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Carbazole (86-74-8)				Chrysene (218-01-9)				Dibenz[a,h]anthracene (53-70-3)				Dibenzofuran (132-64-9)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	RLNP	1700	µg/kg	U		270	µg/kg	J		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	RLNP	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	RLNP	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	RLNP	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	RLNP	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	RLNP	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Diethylphthalate (84-66-2)				Dimethyl phthalate (131-11-3)				Di-n-butylphthalate (84-74-2)				Di-n-octylphthalate (117-84-0)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Fluoranthene (206-44-0)				Fluorene (86-73-7)				Hexachlorobenzene (118-74-1)				Hexachlorobutadiene (87-68-3)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	350	µg/kg	J		290	µg/kg	J		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Hexachlorocyclopentadiene (77-47-4)				Hexachloroethane (67-72-1)				Indeno(1,2,3-cd)pyrene (193-39-5)				Isophorone (78-59-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	1700	µg/kg	U		1700	µg/kg	U		110	µg/kg	J		1700	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Naphthalene (91-20-3)				Nitrobenzene (98-95-3)				n-Nitrosodi-n- dipropylamine (621-64-7)				n- Nitrosodiphenylamine (86-30-6)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	390	µg/kg	J		1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Pentachlorophenol (87-86-5)				Phenanthrene (85-01-8)				Phenol (108-95-2)				Pyrene (129-00-0)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	4400	µg/kg	U		1200	µg/kg	J		1700	µg/kg	U		960	µg/kg	J	
299-W15-95	99999	107	B120W9		5/21/2001	900	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	990	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	980	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	1000	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	1800	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	870	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

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Table C-9. Semi-Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tributyl phosphate (126-73-8)			
						8270			
						Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	1700	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	360	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	390	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	390	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	400	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	730	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	340	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	340	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	340	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	340	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	350	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	340	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	340	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	340	µg/kg	U	

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Table C-10. Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1,2,2-Tetrachloroethane (79-34-5)				1,1,2-Trichloroethane (79-00-5)				1,1-Dichloroethane (75-34-3)			
							8260				8260				8260				8260			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	

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Table C-10. Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,1-Dichloroethene (75-35-4)				1,2-Dichloroethane (107-06-2)				1,2-Dichloroethene (Total) (540-59-0)				1,2-Dichloropropane (78-87-5)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	

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Table C-10. Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Butanone (78-93-3)				2-Hexanone (591-78-6)				2-Pentanone, 4-Methyl (108-10-1)				Acetone (67-64-1)				
						8260				8260				8260				8260				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
299-W15-95	102.5	104.5	B120W8		5/21/2001	12	µg/kg			11	µg/kg	U			11	µg/kg	U			11	µg/kg	U
299-W15-95	99999	107	B120W9		5/21/2001	11	µg/kg	U		11	µg/kg	U			11	µg/kg	U			11	µg/kg	U
299-W15-95	99999	109.5	B120X0		5/21/2001	12	µg/kg	U		12	µg/kg	U			12	µg/kg	U			12	µg/kg	U
299-W15-95	109.5	112	B120X1		5/22/2001	12	µg/kg	U		12	µg/kg	U			12	µg/kg	U			12	µg/kg	U
299-W15-95	112	114.5	B120X2		5/22/2001	12	µg/kg	U		12	µg/kg	U			12	µg/kg	U			12	µg/kg	U
299-W15-95	114.5	116	B121F9		5/22/2001	11	µg/kg	U		11	µg/kg	U			11	µg/kg	U			19	µg/kg	
299-W15-95	116	118	B120X3		5/22/2001	10	µg/kg	U		10	µg/kg	U			10	µg/kg	U			10	µg/kg	U
299-W15-95	118	118.5	B121H0		5/22/2001	10	µg/kg	U		10	µg/kg	U			10	µg/kg	U			10	µg/kg	U
299-W15-95	120	122	B120X4		5/22/2001	10	µg/kg	U		10	µg/kg	U			10	µg/kg	U			5	µg/kg	J
299-W15-95	122.5	125	B120X5		5/23/2001	11	µg/kg	U		11	µg/kg	U			11	µg/kg	U			11	µg/kg	U
299-W15-95	130	132.5	B120X6		5/25/2001	11	µg/kg	U		11	µg/kg	U			11	µg/kg	U			11	µg/kg	U
299-W15-95	145	146.5	B121H1		5/25/2001	11	µg/kg	U		11	µg/kg	U			11	µg/kg	U			11	µg/kg	U
299-W15-95	155	157.5	B120X7		5/29/2001	10	µg/kg	U		10	µg/kg	U			10	µg/kg	U			6	µg/kg	JB
299-W15-95	185	187.5	B120X8		5/31/2001	10	µg/kg	U		10	µg/kg	U			10	µg/kg	U			6	µg/kg	JB

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Table C-10. Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Benzene (71-43-2)				Bromodichloromethane (75-27-4)				Bromoform (75-25-2)				Bromomethane (74-83-9)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	

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Table C-10. Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon disulfide (75-15-0)				Carbon tetrachloride (56-23-5)				Chlorobenzene (108-90-7)				Chloroethane (75-00-3)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	6	µg/kg	U		5	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	

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Table C-10. Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Chloroform (67-66-3)				Chloromethane (74-87-3)				cis-1,3- Dichloropropene (10061-01-5)				Dibromochloromethane (124-48-1)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	2	µg/kg	J		12	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	6	µg/kg	U		12	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	6	µg/kg	U		12	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	

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Table C-10. Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Ethylbenzene (100-41-4)				Methylene chloride (75-09-2)				Styrene (100-42-5)				Tetrachloroethene (127-18-4)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	6	µg/kg	U		18	µg/kg	B		1	µg/kg	J		2	µg/kg	J	
299-W15-95	99999	107	B120W9		5/21/2001	6	µg/kg	U		16	µg/kg	B		6	µg/kg	U		6	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	6	µg/kg	U		18	µg/kg	B		6	µg/kg	U		6	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	6	µg/kg	U		14	µg/kg	B		6	µg/kg	U		6	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	6	µg/kg	U		11	µg/kg	B		6	µg/kg	U		6	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	6	µg/kg	U		14	µg/kg	B		6	µg/kg	U		6	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	5	µg/kg	U		11	µg/kg	B		5	µg/kg	U		5	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	5	µg/kg	U		13	µg/kg	B		5	µg/kg	U		5	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	5	µg/kg	U		11	µg/kg	B		5	µg/kg	U		5	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	6	µg/kg	U		4	µg/kg	J		6	µg/kg	U		6	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	6	µg/kg	U		7	µg/kg			6	µg/kg	U		6	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	6	µg/kg	U		3	µg/kg	J		6	µg/kg	U		6	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	5	µg/kg	U		26	µg/kg	B		5	µg/kg	U		5	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	5	µg/kg	U		26	µg/kg	B		5	µg/kg	U		5	µg/kg	U	

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Table C-10. Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,3- Dichloropropene (10061-02-6)				Trichloroethene (79-01-6)				Vinyl chloride (75-01-4)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	1	µg/kg	J		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	

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Table C-10. Volatile Organic Analysis Results for 299-W15-95 (216-Z-9) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Xylenes (total) (1330-20-7)			
						8260			
						Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	6	µg/kg	U	
299-W15-95	99999	107	B120W9		5/21/2001	6	µg/kg	U	
299-W15-95	99999	109.5	B120X0		5/21/2001	6	µg/kg	U	
299-W15-95	109.5	112	B120X1		5/22/2001	6	µg/kg	U	
299-W15-95	112	114.5	B120X2		5/22/2001	6	µg/kg	U	
299-W15-95	114.5	116	B121F9		5/22/2001	6	µg/kg	U	
299-W15-95	116	118	B120X3		5/22/2001	5	µg/kg	U	
299-W15-95	118	118.5	B121H0		5/22/2001	5	µg/kg	U	
299-W15-95	120	122	B120X4		5/22/2001	5	µg/kg	U	
299-W15-95	122.5	125	B120X5		5/23/2001	6	µg/kg	U	
299-W15-95	130	132.5	B120X6		5/25/2001	6	µg/kg	U	
299-W15-95	145	146.5	B121H1		5/25/2001	6	µg/kg	U	
299-W15-95	155	157.5	B120X7		5/29/2001	5	µg/kg	U	
299-W15-95	185	187.5	B120X8		5/31/2001	5	µg/kg	U	

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Table C-11. Metal Analysis Results for 299-W15-216 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)				Copper (7440-50-8)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2		5/20/1992	8600000	μg/kg			12000	μg/kg			6500	μg/kg			9600	μg/kg		
299-W15-216	110.2	110.7	B067K1		6/2/1992	14000000	μg/kg			18000	μg/kg			8200	μg/kg			20000	μg/kg		
299-W15-216	116.3	116.8	B066V6		6/3/1992	160000000	μg/kg			5900	μg/kg			3500	μg/kg			20000	μg/kg		
299-W15-216	120.5	121	B066W4		6/8/1992	11000000	μg/kg			17000	μg/kg			11000	μg/kg			22000	μg/kg		
299-W15-216	128.5	129	B066W8		6/10/1992	5700000	μg/kg			10000	μg/kg			9100	μg/kg			16000	μg/kg		
299-W15-216	198.7	198.7	B066Z3		6/23/1992	31000	μg/L			22	μg/L					U		32	μg/L		
299-W15-216	203	203	B066Z6		6/24/1992	42000	μg/L			38	μg/L			30	μg/L			90	μg/L		
299-W15-216	208.7	208.7	B066Z7		6/25/1992	51000	μg/L			62	μg/L			32	μg/L			120	μg/L		

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Table C-11. Metal Analysis Results for 299-W15-216 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)				Manganese (7439-96-5)			
						6010				7421				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2		5/20/1992	16000000	μg/kg			4100	μg/kg			5300000	μg/kg			400000	μg/kg		
299-W15-216	110.2	110.7	B067K1		6/2/1992	21000000	μg/kg			11000	μg/kg			7700000	μg/kg			360000	μg/kg		
299-W15-216	116.3	116.8	B066V6		6/3/1992	7700000	μg/kg			1500	μg/kg			12000000	μg/kg			130000	μg/kg		
299-W15-216	120.5	121	B066W4		6/8/1992	25000000	μg/kg			2600	μg/kg			4600000	μg/kg			270000	μg/kg		
299-W15-216	128.5	129	B066W8		6/10/1992	21000000	μg/kg			1900	μg/kg			6100000	μg/kg			340000	μg/kg		
299-W15-216	198.7	198.7	B066Z3		6/23/1992	11000	μg/L							9800	μg/L			1000	μg/L		
299-W15-216	203	203	B066Z6		6/24/1992	33000	μg/L							13000	μg/L			2400	μg/L		
299-W15-216	208.7	208.7	B066Z7		6/25/1992	110000	μg/L							21000	μg/L			2200	μg/L		

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Table C-11. Metal Analysis Results for 299-W15-216 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)				Silver (7440-22-4)			
						7470				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2		5/20/1992			U		13000	μg/kg			1500000	μg/kg					U	
299-W15-216	110.2	110.7	B067K1		6/2/1992			U		16000	μg/kg			2900000	μg/kg					U	
299-W15-216	116.3	116.8	B066V6		6/3/1992			U		6000	μg/kg			660000	μg/kg					U	
299-W15-216	120.5	121	B066W4		6/8/1992			U		15000	μg/kg			740000	μg/kg					U	
299-W15-216	128.5	129	B066W8		6/10/1992			U		31000	μg/kg			790000	μg/kg					U	
299-W15-216	198.7	198.7	B066Z3		6/23/1992							U		6900	μg/L					U	
299-W15-216	203	203	B066Z6		6/24/1992					63	μg/L			6200	μg/L					U	
299-W15-216	208.7	208.7	B066Z7		6/25/1992					67	μg/L			10000	μg/L					U	

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Table C-11. Metal Analysis Results for 299-W15-216 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sodium (7440-23-5)				Tin (7440-31-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2		5/20/1992	180000	µg/kg					U		30000	µg/kg			35000	µg/kg		
299-W15-216	110.2	110.7	B067K1		6/2/1992	300000	µg/kg					U		36000	µg/kg			53000	µg/kg		
299-W15-216	116.3	116.8	B066V6		6/3/1992	550000	µg/kg					U		28000	µg/kg			17000	µg/kg		
299-W15-216	120.5	121	B066W4		6/8/1992	2500000	µg/kg					U		78000	µg/kg			41000	µg/kg		
299-W15-216	128.5	129	B066W8		6/10/1992	1000000	µg/kg					U		54000	µg/kg			39000	µg/kg		
299-W15-216	198.7	198.7	B066Z3		6/23/1992	22000	µg/L					U				U		36	µg/L		
299-W15-216	203	203	B066Z6		6/24/1992	20000	µg/L					U		56	µg/L			80	µg/L		
299-W15-216	208.7	208.7	B066Z7		6/25/1992	26000	µg/L					U		86	µg/L			93	µg/L		

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Table C-12. Radiochemistry Analysis Results for 299-W15-216 (216-Z-9) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Antimony-125 (14234-35-6)					Cesium-137 (10045-97-3)					Cobalt-60 (10198-40-0)				
							GEA					GEA					GEA				
							Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-216	198.7	198.7	B066Z3		6/23/1992	ITASRL	6.13999986 64856	pCi/L				1.15999996 66214	pCi/L				2.19000005 722046	pCi/L			
299-W15-216	203	203	B066Z6		6/24/1992	ITASRL	6.84000015 258789	pCi/L				3.47000002 861023	pCi/L				0	pCi/L			
299-W15-216	208.7	208.7	B066Z7		6/25/1992	ITASRL	5.46999979 019165	pCi/L				0.50400000 8106232	pCi/L	U			0	pCi/L			

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Table C-12. Radiochemistry Analysis Results for 299-W15-216 (216-Z-9) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Gross alpha (12587-46-1)					Gross beta (12587-47-2)					Ruthenium-106 (13967-48-1)				
						9310					9310					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-216	198.7	198.7	B066Z3		6/23/1992	3.60999989 509583	pCi/L				9.14000034 332275	pCi/L				29.5	pCi/L			
299-W15-216	203	203	B066Z6		6/24/1992	17.5	pCi/L				15.1000003 814697	pCi/L				-12.5	pCi/L	U		
299-W15-216	208.7	208.7	B066Z7		6/25/1992	3.29999995 231628	pCi/L				5.71999979 019165	pCi/L				11.8999996 185303	pCi/L	U		

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Table C-13. Semi-Volatile Organic Analysis Results for 299-W15-216 (216-Z-9) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	2-Methylphenol (cresol, o-) (95-48-7)				3-Methylphenol (cresol, m-) (108-39-4)				4-Methylphenol (cresol, p-) (106-44-5)				Decane (124-18-5)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2		5/20/1992	DATACH			U			U			U			U				
299-W15-216	110.2	110.7	B067K1		6/2/1992	DATACH			U			U			U			U				
299-W15-216	116.3	116.8	B066V6		6/3/1992	DATACH			U			U			U			U				
299-W15-216	120.5	121	B066W4		6/8/1992	DATACH			U			U			U			U				
299-W15-216	128.5	129	B066W8		6/10/1992	DATACH			U			U			U			U				
299-W15-216	198.7	198.7	B066Z3		6/23/1992	DATACH			U			U			U			U				
299-W15-216	208.7	208.7	B066Z7		6/25/1992	DATACH			U			U			U			U				

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Table C-13. Semi-Volatile Organic Analysis Results for 299-W15-216 (216-Z-9) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dodecane (112-40-3)				Naphthalene (91-20-3)				Pentachlorophenol (87-86-5)				Phenol (108-95-2)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2		5/20/1992			U				U			U			U			
299-W15-216	110.2	110.7	B067K1		6/2/1992			U				U			U			U			
299-W15-216	116.3	116.8	B066V6		6/3/1992			U				U			U			U			
299-W15-216	120.5	121	B066W4		6/8/1992			U				U			U			U			
299-W15-216	128.5	129	B066W8		6/10/1992			U				U			U			U			
299-W15-216	198.7	198.7	B066Z3		6/23/1992			U				U			U			U			
299-W15-216	208.7	208.7	B066Z7		6/25/1992			U				U			U			U			

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Table C-13. Semi-Volatile Organic Analysis Results for 299-W15-216 (216-Z-9) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)			
						8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2		5/20/1992			U				U	
299-W15-216	110.2	110.7	B067K1		6/2/1992			U				U	
299-W15-216	116.3	116.8	B066V6		6/3/1992			U				U	
299-W15-216	120.5	121	B066W4		6/8/1992			U				U	
299-W15-216	128.5	129	B066W8		6/10/1992			U				U	
299-W15-216	198.7	198.7	B066Z3		6/23/1992			U				U	
299-W15-216	208.7	208.7	B066Z7		6/25/1992			U				U	

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Table C-14. Volatile Organic Analysis Results for 299-W15-216 (216-Z-9) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2- Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2		5/20/1992	67	µg/kg					U				U					U
299-W15-216	110.2	110.7	B066V1		6/2/1992	40	µg/kg					U				U					U
299-W15-216	110.2	110.7	B066V2		6/2/1992				U			U				U					U
299-W15-216	110.2	110.7	B067K1		6/2/1992	54	µg/kg					U				U					U
299-W15-216	116.3	116.8	B066V6		6/3/1992	27	µg/kg					U				U					U
299-W15-216	120.5	121	B066W4		6/8/1992				U			U				U					U
299-W15-216	128.5	129	B066W8		6/10/1992				U			U				U					U
299-W15-216	198.7	198.7	B066Z3		6/23/1992	4148	µg/L			976	µg/L					U					U
299-W15-216	203	203	B066Z6		6/24/1992	4479	µg/L			410	µg/L					U					U
299-W15-216	208.7	208.7	B066Z7		6/25/1992	4437	µg/L			350	µg/L					U					U

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Table C-14. Volatile Organic Analysis Results for 299-W15-216 (216-Z-9) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2		5/20/1992			U		2754	µg/kg					U		7	µg/kg		
299-W15-216	110.2	110.7	B066V1		6/2/1992			U		338	µg/kg					U					U
299-W15-216	110.2	110.7	B066V2		6/2/1992			U		198	µg/kg					U					U
299-W15-216	110.2	110.7	B067K1		6/2/1992			U				U			U						U
299-W15-216	116.3	116.8	B066V6		6/3/1992			U				U			U						U
299-W15-216	120.5	121	B066W4		6/8/1992			U				U			U						U
299-W15-216	128.5	129	B066W8		6/10/1992			U		428	µg/kg				U						U
299-W15-216	198.7	198.7	B066Z3		6/23/1992			U		630	µg/L				U			2.4	µg/L		
299-W15-216	203	203	B066Z6		6/24/1992			U		160	µg/L				U			2.6	µg/L		
299-W15-216	208.7	208.7	B066Z7		6/25/1992			U		28	µg/L				U						U

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Table C-14. Volatile Organic Analysis Results for 299-W15-216 (216-Z-9) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)				Xylenes (total) (1330-20-7)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2		5/20/1992				U												
299-W15-216	110.2	110.7	B066V1		6/2/1992	220	µg/kg														
299-W15-216	110.2	110.7	B066V2		6/2/1992				U												
299-W15-216	110.2	110.7	B067K1		6/2/1992	171	µg/kg														
299-W15-216	116.3	116.8	B066V6		6/3/1992	348	µg/kg														
299-W15-216	120.5	121	B066W4		6/8/1992	13	µg/kg														
299-W15-216	128.5	129	B066W8		6/10/1992				U												
299-W15-216	198.7	198.7	B066Z3		6/23/1992				U				0.8	µg/L					U		
299-W15-216	203	203	B066Z6		6/24/1992				U				0.9	µg/L					U		
299-W15-216	208.7	208.7	B066Z7		6/25/1992				U										U		

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Table C-15. Wet Chemistry Analysis Results for 299-W15-216 (216-Z-9) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						9010				D4327				D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2		5/20/1992			U				U					3000	$\mu\text{g}/\text{kg}$			
299-W15-216	110.2	110.7	B067K1		6/2/1992			U				U								U	
299-W15-216	116.3	116.8	B066V6		6/3/1992			U	1300	$\mu\text{g}/\text{kg}$							9100	$\mu\text{g}/\text{kg}$			
299-W15-216	120.5	121	B066W4		6/8/1992			U	1300	$\mu\text{g}/\text{kg}$							15000	$\mu\text{g}/\text{kg}$			
299-W15-216	128.5	129	B066W8		6/10/1992			U	600	$\mu\text{g}/\text{kg}$							3000	$\mu\text{g}/\text{kg}$			
299-W15-216	198.7	198.7	B066Z3		6/23/1992				700	$\mu\text{g}/\text{L}$							16000	$\mu\text{g}/\text{L}$			
299-W15-216	203	203	B066Z6		6/24/1992				600	$\mu\text{g}/\text{L}$							15000	$\mu\text{g}/\text{L}$			
299-W15-216	208.7	208.7	B066Z7		6/25/1992				800	$\mu\text{g}/\text{L}$							16000	$\mu\text{g}/\text{L}$			

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Table C-16. Metal Analysis Results for 299-W-15-217 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)				Copper (7440-50-8)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07		6/9/1992	12000000	µg/kg			9400	µg/kg			14000	µg/kg			21000	µg/kg		
299-W15-217	25.5	26	B06K12		6/10/1992	10000000	µg/kg			8200	µg/kg			10000	µg/kg			14000	µg/kg		
299-W15-217	40.5	41	B06JZ2		6/15/1992	6400000	µg/kg			9800	µg/kg			8900	µg/kg			16000	µg/kg		
299-W15-217	53.8	54.3	B06VW8		6/17/1992	8000000	µg/kg			15000	µg/kg			7100	µg/kg			13000	µg/kg		
299-W15-217	80.5	81	B06VX4		6/19/1992	9600000	µg/kg			21000	µg/kg			8300	µg/kg			18000	µg/kg		
299-W15-217	101	101.5	B06VX8		6/29/1992	8800000	µg/kg			15000	µg/kg			7600	µg/kg			13000	µg/kg		
299-W15-217	115.1	115.6	B06VY2		6/30/1992	23000000	µg/kg			14000	µg/kg			7000	µg/kg			14000	µg/kg		
299-W15-217	121.6	122.1	B06VY4		6/30/1992	14000000	µg/kg			11000	µg/kg			5800	µg/kg			16000	µg/kg		

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Table C-16. Metal Analysis Results for 299-W-15-217 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)				Manganese (7439-96-5)			
						6010				7421				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07		6/9/1992	29000000	µg/kg			8000	µg/kg			5500000	µg/kg			380000	µg/kg		
299-W15-217	25.5	26	B06K12		6/10/1992	31000000	µg/kg			2100	µg/kg			5300000	µg/kg			380000	µg/kg		
299-W15-217	40.5	41	B06JZ2		6/15/1992	26000000	µg/kg			2600	µg/kg			4800000	µg/kg			280000	µg/kg		
299-W15-217	53.8	54.3	B06VW8		6/17/1992	20000000	µg/kg			4700	µg/kg			5700000	µg/kg			290000	µg/kg		
299-W15-217	80.5	81	B06VX4		6/19/1992	19000000	µg/kg			7600	µg/kg			6400000	µg/kg			340000	µg/kg		
299-W15-217	101	101.5	B06VX8		6/29/1992	17000000	µg/kg			5900	µg/kg			5600000	µg/kg			310000	µg/kg		
299-W15-217	115.1	115.6	B06VY2		6/30/1992	19000000	µg/kg			5000	µg/kg			6000000	µg/kg			350000	µg/kg		
299-W15-217	121.6	122.1	B06VY4		6/30/1992	10000000	µg/kg			2800	µg/kg			7700000	µg/kg			270000	µg/kg		

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Table C-16. Metal Analysis Results for 299-W-15-217 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)				Silver (7440-22-4)			
						7470				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07		6/9/1992			U		9300	$\mu\text{g/kg}$			1900000	$\mu\text{g/kg}$					U	
299-W15-217	25.5	26	B06K12		6/10/1992			U		8400	$\mu\text{g/kg}$			1200000	$\mu\text{g/kg}$					U	
299-W15-217	40.5	41	B06JZ2		6/15/1992			U		15000	$\mu\text{g/kg}$			820000	$\mu\text{g/kg}$					U	
299-W15-217	53.8	54.3	B06VW8		6/17/1992			U		16000	$\mu\text{g/kg}$			1600000	$\mu\text{g/kg}$					U	
299-W15-217	80.5	81	B06VX4		6/19/1992			U		20000	$\mu\text{g/kg}$			2500000	$\mu\text{g/kg}$					U	
299-W15-217	101	101.5	B06VX8		6/29/1992			U		15000	$\mu\text{g/kg}$			2000000	$\mu\text{g/kg}$					U	
299-W15-217	115.1	115.6	B06VY2		6/30/1992			U		15000	$\mu\text{g/kg}$			1800000	$\mu\text{g/kg}$					U	
299-W15-217	121.6	122.1	B06VY4		6/30/1992			U		10000	$\mu\text{g/kg}$			940000	$\mu\text{g/kg}$					U	

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Table C-16. Metal Analysis Results for 299-W-15-217 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sodium (7440-23-5)				Tin (7440-31-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07		6/9/1992	1200000	μg/kg				U		89000	μg/kg			57000	μg/kg			
299-W15-217	25.5	26	B06K12		6/10/1992	1500000	μg/kg				U		80000	μg/kg			55000	μg/kg			
299-W15-217	40.5	41	B06JZ2		6/15/1992	390000	μg/kg				U		64000	μg/kg			44000	μg/kg			
299-W15-217	53.8	54.3	B06VW8		6/17/1992	230000	μg/kg				U		41000	μg/kg			39000	μg/kg			
299-W15-217	80.5	81	B06VX4		6/19/1992	270000	μg/kg				U		37000	μg/kg			48000	μg/kg			
299-W15-217	101	101.5	B06VX8		6/29/1992	210000	μg/kg				U		33000	μg/kg			40000	μg/kg			
299-W15-217	115.1	115.6	B06VY2		6/30/1992	280000	μg/kg				U		45000	μg/kg			44000	μg/kg			
299-W15-217	121.6	122.1	B06VY4		6/30/1992	640000	μg/kg				U		24000	μg/kg			20000	μg/kg			

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Table C-17. Semi-Volatile Organic Analysis Results for 299-W-15-217 (216-Z-9) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	2-Methylphenol (cresol, o-) (95-48-7)				3-Methylphenol (cresol, m-) (108-39-4)				4-Methylphenol (cresol, p-) (106-44-5)				Decane (124-18-5)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07		6/9/1992	DATACH			U			U			U			U				
299-W15-217	25.5	26	B06K12		6/10/1992	DATACH			U			U			U			U				
299-W15-217	40.5	41	B06JZ2		6/15/1992	DATACH			U			U			U			U				
299-W15-217	53.8	54.3	B06VW8		6/17/1992	DATACH			U			U			U			U				
299-W15-217	80.5	81	B06VX4		6/19/1992	DATACH			U			U			U			U				
299-W15-217	101	101.5	B06VX8		6/29/1992	DATACH			U			U			U			U				
299-W15-217	115.1	115.6	B06VY2		6/30/1992	DATACH			U			U			U			U				
299-W15-217	121.6	122.1	B06VY4		6/30/1992	DATACH			U			U			U			U				

Table C-17. Semi-Volatile Organic Analysis Results for 299-W-15-217 (216-Z-9) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dodecane (112-40-3)				Naphthalene (91-20-3)				Pentachlorophenol (87-86-5)				Phenol (108-95-2)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07		6/9/1992			U				U							U		
299-W15-217	25.5	26	B06K12		6/10/1992			U				U							U		
299-W15-217	40.5	41	B06JZ2		6/15/1992			U				U							U		
299-W15-217	53.8	54.3	B06VW8		6/17/1992			U				U							U		
299-W15-217	80.5	81	B06VX4		6/19/1992			U				U							U		
299-W15-217	101	101.5	B06VX8		6/29/1992			U				U	220	µg/kg	J				U		
299-W15-217	115.1	115.6	B06VY2		6/30/1992			U				U							U		
299-W15-217	121.6	122.1	B06VY4		6/30/1992			U				U							U		

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Table C-17. Semi-Volatile Organic Analysis Results for 299-W-15-217 (216-Z-9) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)			
						8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07		6/9/1992			U				U	
299-W15-217	25.5	26	B06K12		6/10/1992			U				U	
299-W15-217	40.5	41	B06JZ2		6/15/1992			U				U	
299-W15-217	53.8	54.3	B06VW8		6/17/1992			U				U	
299-W15-217	80.5	81	B06VX4		6/19/1992			U		62	µg/kg	J	
299-W15-217	101	101.5	B06VX8		6/29/1992			U				U	
299-W15-217	115.1	115.6	B06VY2		6/30/1992			U				U	
299-W15-217	121.6	122.1	B06VY4		6/30/1992			U				U	

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Table C-18. Volatile Organic Analysis Results for 299-W-15-217 (216-Z-9) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)				
						502.2				502.2				502.2				502.2				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
299-W15-217	5	5	B06K01		6/8/1992			U		6	µg/kg					U					U	
299-W15-217	10	10	B06K02		6/8/1992			U								U					U	
299-W15-217	15	15	B06K03		6/9/1992			U		6	µg/kg					U					U	
299-W15-217	20	20	B06K04		6/9/1992			U								U					U	
299-W15-217	20.5	21	B06K07		6/9/1992			U								U					U	
299-W15-217	24.5	24.5	B06K09		6/10/1992			U		90	µg/kg					U					U	
299-W15-217	25.5	26	B06K12		6/10/1992			U								U					U	
299-W15-217	30	30	B06K10		6/11/1992			U		67	µg/kg					U					U	
299-W15-217	35	35	B06K14		6/11/1992			U								U					U	
299-W15-217	40.5	41	B06JZ2		6/15/1992			U								U					U	
299-W15-217	45	45	B06K16		6/16/1992			U		67	µg/kg					U					U	
299-W15-217	50	50	B06K17		6/16/1992			U								U					U	
299-W15-217	53.8	54.3	B06VW8		6/17/1992			U								U			8	µg/kg		
299-W15-217	53.8	54.3	B06VX0		6/17/1992			U								U			8	µg/kg		
299-W15-217	53.8	54.3	B06VX1		6/17/1992			U								U					U	
299-W15-217	55	55	B06K20		6/17/1992			U		215	µg/kg					U			13	µg/kg		
299-W15-217	60	60	B06K21		6/17/1992			U								U			12	µg/kg		
299-W15-217	65	65	B06K22		6/18/1992			U		75	µg/kg					U			17	µg/kg		
299-W15-217	70	70	B06K24		6/18/1992			U								U			15	µg/kg		
299-W15-217	75	75	B06K25		6/18/1992			U								U			14	µg/kg		
299-W15-217	80.5	81	B06VX4		6/19/1992			U								U			14	µg/kg		
299-W15-217	85	85	B06K28		6/23/1992			U		31	µg/kg					U			15	µg/kg		
299-W15-217	90	90	B06K29		6/26/1992			U								U			21	µg/kg		
299-W15-217	95	95	B06K30		6/26/1992			U								U			17	µg/kg		
299-W15-217	100	100	B06K31		6/26/1992			U								U			13	µg/kg		
299-W15-217	101	101.5	B06VX8		6/29/1992			U		669	µg/kg					U			11	µg/kg		
299-W15-217	105	105	B06K32		6/29/1992			U		8	µg/kg					U			11	µg/kg		
299-W15-217	110	110	B06K33		6/29/1992			U								U			12	µg/kg		
299-W15-217	114	114	B06K34		6/29/1992			U		14	µg/kg					U			28	µg/kg		
299-W15-217	115.1	115.6	B06VY2		6/30/1992			U		9	µg/kg					U		3	µg/kg		5	µg/kg
299-W15-217	121.6	122.1	B06VY4		6/30/1992			U								U			17	µg/kg		

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Table C-18. Volatile Organic Analysis Results for 299-W-15-217 (216-Z-9) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	5	5	B06K01		6/8/1992			U				U				U	
299-W15-217	10	10	B06K02		6/8/1992			U				U				U	
299-W15-217	15	15	B06K03		6/9/1992			U				U				U	
299-W15-217	20	20	B06K04		6/9/1992			U				U				U	
299-W15-217	20.5	21	B06K07		6/9/1992			U				U				U	
299-W15-217	24.5	24.5	B06K09		6/10/1992			U		8	µg/kg					U	
299-W15-217	25.5	26	B06K12		6/10/1992			U				U				U	
299-W15-217	30	30	B06K10		6/11/1992			U				U				U	
299-W15-217	35	35	B06K14		6/11/1992			U				U				U	
299-W15-217	40.5	41	B06JZ2		6/15/1992			U				U				U	
299-W15-217	45	45	B06K16		6/16/1992			U				U				U	
299-W15-217	50	50	B06K17		6/16/1992			U				U				U	
299-W15-217	53.8	54.3	B06VW8		6/17/1992	3	µg/kg					U				U	
299-W15-217	53.8	54.3	B06VX0		6/17/1992			U				U				U	
299-W15-217	53.8	54.3	B06VX1		6/17/1992			U				U				U	
299-W15-217	55	55	B06K20		6/17/1992			U				U				U	
299-W15-217	60	60	B06K21		6/17/1992			U				U				U	
299-W15-217	65	65	B06K22		6/18/1992			U				U				U	
299-W15-217	70	70	B06K24		6/18/1992			U				U		3	µg/kg		
299-W15-217	75	75	B06K25		6/18/1992			U				U				U	
299-W15-217	80.5	81	B06VX4		6/19/1992			U				U				U	
299-W15-217	85	85	B06K28		6/23/1992	20	µg/kg					U				U	
299-W15-217	90	90	B06K29		6/26/1992			U				U				U	
299-W15-217	95	95	B06K30		6/26/1992			U				U				U	
299-W15-217	100	100	B06K31		6/26/1992			U				U				U	
299-W15-217	101	101.5	B06VX8		6/29/1992			U				U				U	
299-W15-217	105	105	B06K32		6/29/1992	4	µg/kg					U				U	
299-W15-217	110	110	B06K33		6/29/1992			U				U				U	
299-W15-217	114	114	B06K34		6/29/1992			U				U		13	µg/kg		
299-W15-217	115.1	115.6	B06VY2		6/30/1992	400	µg/kg					U				U	
299-W15-217	121.6	122.1	B06VY4		6/30/1992			U				U				U	

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Table C-19. Wet Chemistry Analysis Results for 299-W-15-217 (216-Z-9) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Nitrate (14797-55-8)				Nitrite (14797-65-0)				Bromide (24959-67-9)				Chloride (16887-00-6)			
							D4327				D4327				D4327				D4327			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07		6/9/1992	DATACH	13000	µg/kg				U					1400	µg/kg				
299-W15-217	25.5	26	B06K12		6/10/1992	DATACH	2700	µg/kg				U					600	µg/kg				
299-W15-217	40.5	41	B06JZ2		6/15/1992	DATACH	2200	µg/kg				U					600	µg/kg				
299-W15-217	53.8	54.3	B06VW8		6/17/1992	DATACH	20000	µg/kg				U					7600	µg/kg				
299-W15-217	80.5	81	B06VX4		6/19/1992	DATACH	65000	µg/kg				U					54000	µg/kg				
299-W15-217	101	101.5	B06VX8		6/29/1992	DATACH	260000	µg/kg				U					16000	µg/kg				
299-W15-217	115.1	115.6	B06VY2		6/30/1992	DATACH	350000	µg/kg				U					5100	µg/kg				
299-W15-217	121.6	122.1	B06VY4		6/30/1992	DATACH	1600000	µg/kg				U					12000	µg/kg				

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Table C-19. Wet Chemistry Analysis Results for 299-W-15-217 (216-Z-9) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						9010				D4327				D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07		6/9/1992			U		1600	µg/kg					U		18000	µg/kg		
299-W15-217	25.5	26	B06K12		6/10/1992			U								U		17000	µg/kg		
299-W15-217	40.5	41	B06JZ2		6/15/1992			U		300	µg/kg					U		27000	µg/kg		
299-W15-217	53.8	54.3	B06VW8		6/17/1992			U		300	µg/kg					U		17000	µg/kg		
299-W15-217	80.5	81	B06VX4		6/19/1992			U		800	µg/kg					U		69000	µg/kg		
299-W15-217	101	101.5	B06VX8		6/29/1992			U		700	µg/kg					U		25000	µg/kg		
299-W15-217	115.1	115.6	B06VY2		6/30/1992			U		1000	µg/kg					U		7800	µg/kg		
299-W15-217	121.6	122.1	B06VY4		6/30/1992			U		2600	µg/kg					U		22000	µg/kg		

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Table C-20. Metal Analysis Results for 299-W-15-218 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)				Copper (7440-50-8)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	199	199	B01NQ7		3/19/1993	40000	µg/L			47	µg/L			35	µg/L			68	µg/L		

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Table C-20. Metal Analysis Results for 299-W-15-218 (216-Z-9) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Vanadium (7440-62-2)				Zinc (7440-66-6)			
						6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	199	199	B01NQ7		3/19/1993	71	µg/L			230	µg/L		

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Table C-21. Semi-Volatile Organic Analysis Results for 299-W-15-218 (216-Z-9) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	2-Methylphenol (cresol, o-) (95-48-7)				3-Methylphenol (cresol, m-) (108-39-4)				4-Methylphenol (cresol, p-) (106-44-5)				Decane (124-18-5)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	199	199	B01NQ7		3/19/1993	DATACH			U			U			U				U			

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Table C-21. Semi-Volatile Organic Analysis Results for 299-W-15-218 (216-Z-9) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dodecane (112-40-3)				Naphthalene (91-20-3)				Pentachlorophenol (87-86-5)				Phenol (108-95-2)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	199	199	B01NQ7		3/19/1993			U				U					U				

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Table C-21. Semi-Volatile Organic Analysis Results for 299-W-15-218 (216-Z-9) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)			
						8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	199	199	B01NQ7		3/19/1993			U				U	

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Table C-22. Volatile Organic Analysis Results for 299-W-15-218 (216-Z-9) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	7	7	B01MT6		2/4/1993	PNL1			U			U			U			U				
299-W15-218	10	10	B01MT7		2/4/1993	PNL1			U			U			U			U				
299-W15-218	15	15	B01MT9		2/5/1993	PNL1			U			U			U			U				
299-W15-218	15	15	B01MV0		2/5/1993	PNL1			U			U			U			U				
299-W15-218	20	20	B01MV1		2/5/1993	PNL1			U			U			U			U				
299-W15-218	25	25	B01MV3		2/8/1993	PNL1			U			U			U			U				
299-W15-218	27	27	B01MV4		2/8/1993	PNL1			U			U			U			U				
299-W15-218	30	30	B01MV5		2/8/1993	PNL1			U			U			U			U				
299-W15-218	30	30	B01MV6		2/8/1993	PNL1			U			U			U			U				
299-W15-218	35	35	B01MV7		2/9/1993	PNL1			U			U			U			U				
299-W15-218	35	35	B01MV8		2/9/1993	PNL1			U			U			U			U				
299-W15-218	35	35	B01MV9		2/9/1993	PNL1			U			U			U			U				
299-W15-218	35	35	B01MW0		2/9/1993	PNL1			U			U			U			U				
299-W15-218	42	42	B01MW1		2/10/1993	PNL1			U			U			U			U				
299-W15-218	51	51	B01MW2		2/10/1993	PNL1			U			U			U			U				
299-W15-218	52.5	52.5	B01NV3		2/11/1993	PNL1			U			U			U			U				
299-W15-218	55	55	B01NV4		2/11/1993	PNL1			U			U			U			U				
299-W15-218	60	60	B01NV5		2/11/1993	PNL1			U			U			U			U				
299-W15-218	65	65	B01NV7		2/12/1993	PNL1			U			U			U			U				
299-W15-218	70	70	B01NV8		2/12/1993	PNL1			U			U			U			U				
299-W15-218	75	75	B01NV9		2/12/1993	PNL1			U			U			U			U				
299-W15-218	80	80	B01NW6		2/12/1993	PNL1			U			U			U			U				
299-W15-218	85	85	B01NW0		2/16/1993	PNL1			U			U			U			U				
299-W15-218	90	90	B01NW1		2/16/1993	PNL1			U			U			U			U				
299-W15-218	95	95	B01NW3		2/17/1993	PNL1			U			U			U			U				
299-W15-218	100	100	B01NW2		2/17/1993	PNL1			U			U			U			U				
299-W15-218	104.5	104.5	B01NW5		2/17/1993	PNL1			U			U			U			U				
299-W15-218	110	110	B01NW4		2/17/1993	PNL1			U			U			U			U				
299-W15-218	116.5	116.5	B01P75		2/24/1993	PNL1			U			U			U			U				
299-W15-218	116.5	116.5	B01P76		2/24/1993	PNL1			U			U			U			U				
299-W15-218	120	120	B01P77		2/25/1993	PNL1			U			U			U			U				
299-W15-218	125	125	B08435		3/8/1993	PNL1			U			U			U			U				
299-W15-218	130	130	B08436		3/8/1993	PNL1			U			U			U			U				
299-W15-218	140	140	B01P79		3/9/1993	PNL1			U			U			U			U				
299-W15-218	145	145	B01P80		3/10/1993	PNL1			U			U			U			U				
299-W15-218	150	150	B01P81		3/10/1993	PNL1			U			U			U			U				
299-W15-218	155	155	B01P82		3/10/1993	PNL1			U			U			U			U				

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Table C-22. Volatile Organic Analysis Results for 299-W-15-218 (216-Z-9) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	160	160	B01P83		3/11/1993	PNL1			U			U			U				U			
299-W15-218	165	165	B01P84		3/11/1993	PNL1			U			U			U				U			
299-W15-218	170	170	B01P85		3/12/1993	PNL1			U			U			U				U			
299-W15-218	175	175	B01P86		3/12/1993	PNL1			U			U			U				U			
299-W15-218	180	180	B01P87		3/15/1993	PNL1			U			U			U				U			
299-W15-218	185	185	B01P89		3/16/1993	PNL1			U			U			U				U			
299-W15-218	190	190	B01P90		3/16/1993	PNL1			U			U			U				U			
299-W15-218	195	195	B01NX0		3/18/1993	PNL1			U			U			U				U			
299-W15-218	199	199	B01NQ8		3/23/1993	PNL1			U			U			U				U			
299-W15-218	200	200	B08438		3/18/1993	PNL1			U			U			U				U			
299-W15-218	205	205	B08439		3/18/1993	PNL1			U			U			U				U			

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Table C-22. Volatile Organic Analysis Results for 299-W-15-218 (216-Z-9) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2- Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	7	7	B01MT6		2/4/1993	82	µg/kg					U			U			U			
299-W15-218	10	10	B01MT7		2/4/1993	84	µg/kg	J				U			U			U			
299-W15-218	15	15	B01MT9		2/5/1993	15	µg/kg	J				U			U			U			
299-W15-218	15	15	B01MV0		2/5/1993	23	µg/kg	J				U			U			U			
299-W15-218	20	20	B01MV1		2/5/1993	17	µg/kg	J				U			U			U			
299-W15-218	25	25	B01MV3		2/8/1993	36	µg/kg					U			U			U			
299-W15-218	27	27	B01MV4		2/8/1993	106	µg/kg					U			U			U			
299-W15-218	30	30	B01MV5		2/8/1993	96	µg/kg					U			U			U			
299-W15-218	30	30	B01MV6		2/8/1993	112	µg/kg					U			U			U			
299-W15-218	35	35	B01MV7		2/9/1993	9	µg/kg	J				U			U			U			
299-W15-218	35	35	B01MV8		2/9/1993	7	µg/kg	J				U			U			U			
299-W15-218	35	35	B01MV9		2/9/1993	11	µg/kg	J				U			U			U			
299-W15-218	35	35	B01MW0		2/9/1993	16	µg/kg	J				U			U			U			
299-W15-218	42	42	B01MW1		2/10/1993							U			U			U			
299-W15-218	51	51	B01MW2		2/10/1993	40	µg/kg					U			U			U			
299-W15-218	52.5	52.5	B01NV3		2/11/1993	1876	µg/kg			30	µg/kg	J			U			U			
299-W15-218	55	55	B01NV4		2/11/1993	198	µg/kg					U			U			U			
299-W15-218	60	60	B01NV5		2/11/1993	354	µg/kg					U			U			U			
299-W15-218	65	65	B01NV7		2/12/1993	75	µg/kg					U			U			U			
299-W15-218	70	70	B01NV8		2/12/1993	175	µg/kg					U			U			U			
299-W15-218	75	75	B01NV9		2/12/1993	389	µg/kg					U			U			U			
299-W15-218	80	80	B01NW6		2/12/1993	1334	µg/kg			7	µg/kg	J			U			U			
299-W15-218	85	85	B01NW0		2/16/1993	206	µg/kg					U			U			U			
299-W15-218	90	90	B01NW1		2/16/1993	810	µg/kg			7	µg/kg	J			U			U			
299-W15-218	95	95	B01NW3		2/17/1993	11804	µg/kg	D		44	µg/kg				U			U			
299-W15-218	100	100	B01NW2		2/17/1993	1182	µg/kg			10	µg/kg	J			U			U			
299-W15-218	104.5	104.5	B01NW5		2/17/1993	2600	µg/kg			15	µg/kg	J			U			U			
299-W15-218	110	110	B01NW4		2/17/1993	15794	µg/kg	D		93	µg/kg				U			U			
299-W15-218	116.5	116.5	B01P75		2/24/1993	6816	µg/kg	D		128	µg/kg				U			U			
299-W15-218	116.5	116.5	B01P76		2/24/1993	9932	µg/kg	D		166	µg/kg				U			U			
299-W15-218	120	120	B01P77		2/25/1993	31	µg/kg					U			U			U			
299-W15-218	125	125	B08435		3/8/1993					439	µg/kg				U			U			
299-W15-218	130	130	B08436		3/8/1993	19	µg/kg			730	µg/kg				U			U			
299-W15-218	140	140	B01P79		3/9/1993	244	µg/kg			11	µg/kg	J			U			U			
299-W15-218	145	145	B01P80		3/10/1993	3915	µg/kg	D		27	µg/kg				U			U			
299-W15-218	150	150	B01P81		3/10/1993	81	µg/kg					U			U			U			
299-W15-218	155	155	B01P82		3/10/1993	54	µg/kg					U			U			U			

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Table C-22. Volatile Organic Analysis Results for 299-W-15-218 (216-Z-9) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	7	7	B01MT6		2/4/1993			U			U			U			U				
299-W15-218	10	10	B01MT7		2/4/1993			U	307	µg/kg				U			U				
299-W15-218	15	15	B01MT9		2/5/1993			U			U			U			U				
299-W15-218	15	15	B01MV0		2/5/1993			U			U			U			U				
299-W15-218	20	20	B01MV1		2/5/1993			U			U			U			U				
299-W15-218	25	25	B01MV3		2/8/1993			U			U			U			U				
299-W15-218	27	27	B01MV4		2/8/1993			U			U			U			U				
299-W15-218	30	30	B01MV5		2/8/1993			U			U			U			U				
299-W15-218	30	30	B01MV6		2/8/1993			U			U			U			U				
299-W15-218	35	35	B01MV7		2/9/1993			U			U			U			U				
299-W15-218	35	35	B01MV8		2/9/1993			U			U			U			U				
299-W15-218	35	35	B01MV9		2/9/1993			U			U			U			U				
299-W15-218	35	35	B01MW0		2/9/1993			U			U			U			U				
299-W15-218	42	42	B01MW1		2/10/1993			U			U			U			U				
299-W15-218	51	51	B01MW2		2/10/1993			U			U			U			U				
299-W15-218	52.5	52.5	B01NV3		2/11/1993			U			U			U			U				
299-W15-218	55	55	B01NV4		2/11/1993			U			U			U			U				
299-W15-218	60	60	B01NV5		2/11/1993			U			U			U			U				
299-W15-218	65	65	B01NV7		2/12/1993			U			U			U			U				
299-W15-218	70	70	B01NV8		2/12/1993			U			U			U			U				
299-W15-218	75	75	B01NV9		2/12/1993			U			U			U			U				
299-W15-218	80	80	B01NW6		2/12/1993			U			U			U			U				
299-W15-218	85	85	B01NW0		2/16/1993			U			U			U			U				
299-W15-218	90	90	B01NW1		2/16/1993			U			U			U		2	µg/kg J				
299-W15-218	95	95	B01NW3		2/17/1993			U			U			U		11	µg/kg J				
299-W15-218	100	100	B01NW2		2/17/1993			U			U			U		7	µg/kg J				
299-W15-218	104.5	104.5	B01NW5		2/17/1993			U			U			U		8	µg/kg J				
299-W15-218	110	110	B01NW4		2/17/1993			U			U			U		12	µg/kg J				
299-W15-218	116.5	116.5	B01P75		2/24/1993			U			U			U		9	µg/kg J				
299-W15-218	116.5	116.5	B01P76		2/24/1993			U			U			U		12	µg/kg				
299-W15-218	120	120	B01P77		2/25/1993			U			U			U			U				
299-W15-218	125	125	B08435		3/8/1993			U	206	µg/kg				U			U				
299-W15-218	130	130	B08436		3/8/1993			U	221	µg/kg				U		4	µg/kg J				
299-W15-218	140	140	B01P79		3/9/1993			U			U			U			U				
299-W15-218	145	145	B01P80		3/10/1993			U			U			U			U				
299-W15-218	150	150	B01P81		3/10/1993			U			U			U			U				
299-W15-218	155	155	B01P82		3/10/1993			U			U			U			U				

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Table C-22. Volatile Organic Analysis Results for 299-W-15-218 (216-Z-9) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	160	160	B01P83		3/11/1993			U			U			U			U				
299-W15-218	165	165	B01P84		3/11/1993			U			U			U			U				
299-W15-218	170	170	B01P85		3/12/1993			U			U			U			U				
299-W15-218	175	175	B01P86		3/12/1993			U			U			U			U				
299-W15-218	180	180	B01P87		3/15/1993			U			U			U			U				
299-W15-218	185	185	B01P89		3/16/1993	5	$\mu\text{g/kg}$				U		8	$\mu\text{g/kg}$			U				
299-W15-218	190	190	B01P90		3/16/1993			U			U			U			U				
299-W15-218	195	195	B01NX0		3/18/1993	6	$\mu\text{g/kg}$	J	412	$\mu\text{g/kg}$		16	$\mu\text{g/kg}$				U				
299-W15-218	199	199	B01NQ8		3/23/1993			U	16	$\mu\text{g/L}$				U		5.7	$\mu\text{g/L}$				
299-W15-218	200	200	B08438		3/18/1993			U			U			U			U				
299-W15-218	205	205	B08439		3/18/1993			U			U			U			U				

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Table C-22. Volatile Organic Analysis Results for 299-W-15-218 (216-Z-9) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	7	7	B01MT6		2/4/1993			U				U					U
299-W15-218	10	10	B01MT7		2/4/1993			U				U					U
299-W15-218	15	15	B01MT9		2/5/1993			U				U					U
299-W15-218	15	15	B01MV0		2/5/1993			U				U					U
299-W15-218	20	20	B01MV1		2/5/1993			U				U					U
299-W15-218	25	25	B01MV3		2/8/1993			U				U					U
299-W15-218	27	27	B01MV4		2/8/1993			U				U					U
299-W15-218	30	30	B01MV5		2/8/1993			U				U					U
299-W15-218	30	30	B01MV6		2/8/1993			U				U					U
299-W15-218	35	35	B01MV7		2/9/1993			U				U					U
299-W15-218	35	35	B01MV8		2/9/1993			U				U					U
299-W15-218	35	35	B01MV9		2/9/1993			U				U					U
299-W15-218	35	35	B01MW0		2/9/1993			U				U					U
299-W15-218	42	42	B01MW1		2/10/1993			U				U					U
299-W15-218	51	51	B01MW2		2/10/1993			U				U					U
299-W15-218	52.5	52.5	B01NV3		2/11/1993			U				U					U
299-W15-218	55	55	B01NV4		2/11/1993			U				U					U
299-W15-218	60	60	B01NV5		2/11/1993			U				U					U
299-W15-218	65	65	B01NV7		2/12/1993			U				U					U
299-W15-218	70	70	B01NV8		2/12/1993			U				U					U
299-W15-218	75	75	B01NV9		2/12/1993			U				U					U
299-W15-218	80	80	B01NW6		2/12/1993			U				U					U
299-W15-218	85	85	B01NW0		2/16/1993			U				U					U
299-W15-218	90	90	B01NW1		2/16/1993			U				U					U
299-W15-218	95	95	B01NW3		2/17/1993			U				U			6 $\mu\text{g/kg}$		J
299-W15-218	100	100	B01NW2		2/17/1993			U				U					U
299-W15-218	104.5	104.5	B01NW5		2/17/1993			U				U			10 $\mu\text{g/kg}$		J
299-W15-218	110	110	B01NW4		2/17/1993			U				U					U
299-W15-218	116.5	116.5	B01P75		2/24/1993			U				U					U
299-W15-218	116.5	116.5	B01P76		2/24/1993			U				U					U
299-W15-218	120	120	B01P77		2/25/1993			U				U					U
299-W15-218	125	125	B08435		3/8/1993			U				U					U
299-W15-218	130	130	B08436		3/8/1993			U				U					U
299-W15-218	140	140	B01P79		3/9/1993			U				U					U
299-W15-218	145	145	B01P80		3/10/1993			U				U					U
299-W15-218	150	150	B01P81		3/10/1993	35	$\mu\text{g/kg}$					U					U
299-W15-218	155	155	B01P82		3/10/1993			U				U					U

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Table C-22. Volatile Organic Analysis Results for 299-W-15-218 (216-Z-9) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	160	160	B01P83		3/11/1993			U			U			U			
299-W15-218	165	165	B01P84		3/11/1993	161	$\mu\text{g}/\text{kg}$				U			U			
299-W15-218	170	170	B01P85		3/12/1993			U			U			U			
299-W15-218	175	175	B01P86		3/12/1993	285	$\mu\text{g}/\text{kg}$	J			U			U			
299-W15-218	180	180	B01P87		3/15/1993	87	$\mu\text{g}/\text{kg}$				U			U			
299-W15-218	185	185	B01P89		3/16/1993	207	$\mu\text{g}/\text{kg}$				U			U			
299-W15-218	190	190	B01P90		3/16/1993			U			U			U			
299-W15-218	195	195	B01NX0		3/18/1993	33	$\mu\text{g}/\text{kg}$				U			U			
299-W15-218	199	199	B01NQ8		3/23/1993			U			U		1.4	$\mu\text{g}/\text{L}$			
299-W15-218	200	200	B08438		3/18/1993			U			U			U			
299-W15-218	205	205	B08439		3/18/1993	13	$\mu\text{g}/\text{kg}$				U			U			

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Table C-23. Wet Chemistry Analysis Results for 299-W-15-218 (216-Z-9) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Nitrate (14797-55-8)				Nitrite (14797-65-0)				Bromide (24959-67-9)				Chloride (16887-00-6)				
							D4327				D4327				D4327				D4327				
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
299-W15-218	199	199	B01NQ7		3/19/1993	DATACH	4400	µg/L												9100	µg/L		

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Table C-23. Wet Chemistry Analysis Results for 299-W-15-218 (216-Z-9) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Fluoride (16984-48-8)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						D4327				D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	199	199	B01NQ7		3/19/1993	700	µg/L					U		18000	µg/L		

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Table C-24. Volatile Organic Analysis Results for 299-W-15-219 (216-Z-9) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-219	25.9	25.9	B01NT5		4/22/1993	PNL1				U					U							U
299-W15-219	29.5	29.5	B01NT7		4/23/1993	PNL1				U					U							U
299-W15-219	35.5	35.5	B01NT8		4/23/1993	PNL1				U					U							U
299-W15-219	39.8	39.8	B01NT6		4/27/1993	PNL1				U					U							U
299-W15-219	44.8	44.8	B01NT9		4/27/1993	PNL1				U					U							U
299-W15-219	49.5	49.5	B01NV0		4/27/1993	PNL1				U					U							U
299-W15-219	53.5	53.5	B01NV1		4/28/1993	PNL1				U					U							U
299-W15-219	54.3	54.3	B01PW6		4/28/1993	PNL1				U					U							U
299-W15-219	56.5	56.5	B01PW7		4/28/1993	PNL1				U					U							U
299-W15-219	57.9	57.9	B01NV2		4/29/1993	PNL1				U					U							U
299-W15-219	65	65	B01PR8		4/29/1993	PNL1				U					U							U
299-W15-219	70	70	B01PR9		4/29/1993	PNL1				U					U							U
299-W15-219	75.5	75.5	B01PS0		4/29/1993	PNL1				U					U							U
299-W15-219	79.5	79.5	B01PS1		4/30/1993	PNL1				U					U							U
299-W15-219	84.5	84.5	B01PS2		4/30/1993	PNL1				U					U							U
299-W15-219	87	87	B01PW8		5/3/1993	PNL1				U					U							U
299-W15-219	89.5	89.5	B01PS3		5/3/1993	PNL1				U					U							U
299-W15-219	91	91	B01PW9		5/3/1993	PNL1				U					U							U
299-W15-219	95.5	95.5	B01PX0		5/4/1993	PNL1				U					U							U
299-W15-219	96.5	96.5	B01PS4		5/4/1993	PNL1				U					U							U
299-W15-219	100	100	B01PS5		5/4/1993	PNL1				U					U							U
299-W15-219	105.5	105.5	B01PS6		5/4/1993	PNL1				U					U							U
299-W15-219	109.5	109.5	B01PS7		5/4/1993	PNL1				U					U							U
299-W15-219	111.1	111.1	B01PX1		5/5/1993	PNL1				U					U							U
299-W15-219	114.5	114.5	B01PX2		5/5/1993	PNL1				U					U							U
299-W15-219	114.5	114.5	B01PX3		5/5/1993	PNL1				U					U							U
299-W15-219	114.9	114.9	B01PS8		5/5/1993	PNL1				U					U							U
299-W15-219	120	120	B01PS9		5/5/1993	PNL1				U					U							U
299-W15-219	124.5	124.5	B01PT0		5/11/1993	PNL1				U					U							U
299-W15-219	129.5	129.5	B01PT1		5/11/1993	PNL1				U					U							U
299-W15-219	131.5	131.5	B01PT2		5/11/1993	PNL1				U					U							U
299-W15-219	140	140	B01PT3		5/13/1993	PNL1				U					U							U
299-W15-219	145	145	B01PT4		5/13/1993	PNL1				U					U							U
299-W15-219	149	149	B01PT5		5/14/1993	PNL1				U					U							U
299-W15-219	150.3	150.3	B01PX4		5/14/1993	PNL1				U					U							U
299-W15-219	153.4	153.4	B01PX5		5/17/1993	PNL1				U					U							U
299-W15-219	155	155	B01PT6		5/17/1993	PNL1				U					U							U

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Table C-24. Volatile Organic Analysis Results for 299-W-15-219 (216-Z-9) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-219	160	160	B01PT7		5/17/1993	PNL1			U			U			U					U		
299-W15-219	165	165	B01PT8		5/18/1993	PNL1			U			U			U					U		
299-W15-219	170	170	B01PT9		5/18/1993	PNL1			U			U			U					U		
299-W15-219	175	175	B01PV0		5/18/1993	PNL1			U			U			U					U		
299-W15-219	180	180	B01PV1		5/19/1993	PNL1			U			U			U					U		
299-W15-219	185	185	B01PV2		5/19/1993	PNL1			U			U			U					U		
299-W15-219	187	187	B01PV3		5/19/1993	PNL1			U			U			U					U		
299-W15-219	190.3	190.3	B01PV4		5/20/1993	PNL1			U			U			U					U		
299-W15-219	195	195	B01PV5		5/20/1993	PNL1			U			U			U					U		
299-W15-219	200	200	B01PV6		5/21/1993	PNL1			U			U			U					U		
299-W15-219	205	205	B01PV7		5/24/1993	PNL1			U			U			U					U		
299-W15-219	210.5	210.5	B01PV8		5/25/1993	PNL1			U			U			U					U		
299-W15-219	211	211	B07BS6		5/25/1993	PNL1																

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Table C-24. Volatile Organic Analysis Results for 299-W-15-219 (216-Z-9) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2- Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-219	25.9	25.9	B01NT5		4/22/1993			U			U			U			U				
299-W15-219	29.5	29.5	B01NT7		4/23/1993	8	µg/kg				U			U			U				
299-W15-219	35.5	35.5	B01NT8		4/23/1993	12	µg/kg	J			U			U			U				
299-W15-219	39.8	39.8	B01NT6		4/27/1993			U			U			U			U				
299-W15-219	44.8	44.8	B01NT9		4/27/1993	117	µg/kg				U			U			U				
299-W15-219	49.5	49.5	B01NV0		4/27/1993	407	µg/kg				U			U			U				
299-W15-219	53.5	53.5	B01NV1		4/28/1993	182	µg/kg				U			U			U				
299-W15-219	54.3	54.3	B01PW6		4/28/1993	288	µg/kg		3	µg/kg	J			U			U				
299-W15-219	56.5	56.5	B01PW7		4/28/1993	213	µg/kg				U			U			U				
299-W15-219	57.9	57.9	B01NV2		4/29/1993	495	µg/kg		6	µg/kg	J			U			U				
299-W15-219	65	65	B01PR8		4/29/1993	283	µg/kg		4	µg/kg	J			U			U				
299-W15-219	70	70	B01PR9		4/29/1993	679	µg/kg	D	8	µg/kg	J			U			U				
299-W15-219	75.5	75.5	B01PS0		4/29/1993	867	µg/kg		5	µg/kg	J			U			U				
299-W15-219	79.5	79.5	B01PS1		4/30/1993	9558	µg/kg	D	77	µg/kg				U			U				
299-W15-219	84.5	84.5	B01PS2		4/30/1993	2039	µg/kg	D	23	µg/kg				U			U				
299-W15-219	87	87	B01PW8		5/3/1993	577	µg/kg		23	µg/kg				U			U				
299-W15-219	89.5	89.5	B01PS3		5/3/1993	1557	µg/kg				U			U			U				
299-W15-219	91	91	B01PW9		5/3/1993	3095	µg/kg	D	13	µg/kg	J			U			U				
299-W15-219	95.5	95.5	B01PX0		5/4/1993	106	µg/kg				U			U			U				
299-W15-219	96.5	96.5	B01PS4		5/4/1993	80	µg/kg				U			U			U				
299-W15-219	100	100	B01PS5		5/4/1993	198	µg/kg				U			U			U				
299-W15-219	105.5	105.5	B01PS6		5/4/1993	376	µg/kg				U			U			U				
299-W15-219	109.5	109.5	B01PS7		5/4/1993	606	µg/kg		12	µg/kg				U			U				
299-W15-219	111.1	111.1	B01PX1		5/5/1993	288	µg/kg				U			U			U				
299-W15-219	114.5	114.5	B01PX2		5/5/1993	10488	µg/kg	D	57	µg/kg				U			U				
299-W15-219	114.5	114.5	B01PX3		5/5/1993	11688	µg/kg	D	53	µg/kg				U			U				
299-W15-219	114.9	114.9	B01PS8		5/5/1993	9866	µg/kg	D	61	µg/kg				U			U				
299-W15-219	120	120	B01PS9		5/5/1993	1349	µg/kg		39	µg/kg				U			U				
299-W15-219	124.5	124.5	B01PT0		5/11/1993	2345	µg/kg	D	168	µg/kg				U			U				
299-W15-219	129.5	129.5	B01PT1		5/11/1993	4905	µg/kg	D	241	µg/kg				U			U				
299-W15-219	131.5	131.5	B01PT2		5/11/1993	574	µg/kg		227	µg/kg				U			U				
299-W15-219	140	140	B01PT3		5/13/1993	3752	µg/kg	D	595	µg/kg				U			U				
299-W15-219	145	145	B01PT4		5/13/1993	55	µg/kg		19	µg/kg				U			U				
299-W15-219	149	149	B01PT5		5/14/1993	3798	µg/kg	D	65	µg/kg				U			U				
299-W15-219	150.3	150.3	B01PX4		5/14/1993	172	µg/kg		18	µg/kg	J			U			U				
299-W15-219	153.4	153.4	B01PX5		5/17/1993	23	µg/kg				U			U			U				
299-W15-219	155	155	B01PT6		5/17/1993			U			U			U			U				

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Table C-24. Volatile Organic Analysis Results for 299-W-15-219 (216-Z-9) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2- Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-219	160	160	B01PT7		5/17/1993	1305	µg/kg	D		162	µg/kg					U				U	
299-W15-219	165	165	B01PT8		5/18/1993	242	µg/kg			230	µg/kg					U				U	
299-W15-219	170	170	B01PT9		5/18/1993	1311	µg/kg	D		703	µg/kg	D				U				U	
299-W15-219	175	175	B01PV0		5/18/1993	1620	µg/kg	D		207	µg/kg					U				U	
299-W15-219	180	180	B01PV1		5/19/1993	1418	µg/kg	D		130	µg/kg					U				U	
299-W15-219	185	185	B01PV2		5/19/1993	876	µg/kg	D		154	µg/kg					U				U	
299-W15-219	187	187	B01PV3		5/19/1993	705	µg/kg			164	µg/kg					U				U	
299-W15-219	190.3	190.3	B01PV4		5/20/1993	5	µg/kg	J				U				U				U	
299-W15-219	195	195	B01PV5		5/20/1993	120	µg/kg					U				U				U	
299-W15-219	200	200	B01PV6		5/21/1993	13	µg/kg	J				U				U				U	
299-W15-219	205	205	B01PV7		5/24/1993	382	µg/kg			78	µg/kg					U				U	
299-W15-219	210.5	210.5	B01PV8		5/25/1993	107	µg/kg			139	µg/kg					U				U	
299-W15-219	211	211	B07BS6		5/25/1993	3862	µg/L	D		862	µg/L	D									

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Table C-24. Volatile Organic Analysis Results for 299-W-15-219 (216-Z-9) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-219	25.9	25.9	B01NT5		4/22/1993			U				U					U				
299-W15-219	29.5	29.5	B01NT7		4/23/1993			U				U							U		
299-W15-219	35.5	35.5	B01NT8		4/23/1993			U				U							U		
299-W15-219	39.8	39.8	B01NT6		4/27/1993			U				U							U		
299-W15-219	44.8	44.8	B01NT9		4/27/1993			U				U							U		
299-W15-219	49.5	49.5	B01NV0		4/27/1993			U				U							U		
299-W15-219	53.5	53.5	B01NV1		4/28/1993			U				U							U		
299-W15-219	54.3	54.3	B01PW6		4/28/1993			U				U					3	µg/kg	J		
299-W15-219	56.5	56.5	B01PW7		4/28/1993			U				U							U		
299-W15-219	57.9	57.9	B01NV2		4/29/1993			U				U							U		
299-W15-219	65	65	B01PR8		4/29/1993			U				U					4	µg/kg	J		
299-W15-219	70	70	B01PR9		4/29/1993			U				U					5	µg/kg	J		
299-W15-219	75.5	75.5	B01PS0		4/29/1993			U				U					7	µg/kg	J		
299-W15-219	79.5	79.5	B01PS1		4/30/1993			U				U					9	µg/kg	J		
299-W15-219	84.5	84.5	B01PS2		4/30/1993			U				U					10	µg/kg	J		
299-W15-219	87	87	B01PW8		5/3/1993			U				U							U		
299-W15-219	89.5	89.5	B01PS3		5/3/1993			U				U							U		
299-W15-219	91	91	B01PW9		5/3/1993			U				U							U		
299-W15-219	95.5	95.5	B01PX0		5/4/1993			U				U							U		
299-W15-219	96.5	96.5	B01PS4		5/4/1993			U				U					11	µg/kg	J		
299-W15-219	100	100	B01PS5		5/4/1993			U				U					5	µg/kg	J		
299-W15-219	105.5	105.5	B01PS6		5/4/1993			U				U							U		
299-W15-219	109.5	109.5	B01PS7		5/4/1993			U				U					3	µg/kg	J		
299-W15-219	111.1	111.1	B01PX1		5/5/1993			U				U							U		
299-W15-219	114.5	114.5	B01PX2		5/5/1993			U				U							U		
299-W15-219	114.5	114.5	B01PX3		5/5/1993			U				U							U		
299-W15-219	114.9	114.9	B01PS8		5/5/1993			U				U							U		
299-W15-219	120	120	B01PS9		5/5/1993			U				U							U		
299-W15-219	124.5	124.5	B01PT0		5/11/1993			U				U							U		
299-W15-219	129.5	129.5	B01PT1		5/11/1993			U				U							U		
299-W15-219	131.5	131.5	B01PT2		5/11/1993			U				U							U		
299-W15-219	140	140	B01PT3		5/13/1993			U				U							U		
299-W15-219	145	145	B01PT4		5/13/1993			U				U							U		
299-W15-219	149	149	B01PT5		5/14/1993			U				U							U		
299-W15-219	150.3	150.3	B01PX4		5/14/1993			U				U							U		
299-W15-219	153.4	153.4	B01PX5		5/17/1993			U				U							U		
299-W15-219	155	155	B01PT6		5/17/1993			U				U							U		

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Table C-24. Volatile Organic Analysis Results for 299-W-15-219 (216-Z-9) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-219	25.9	25.9	B01NT5		4/22/1993			U				U				U	
299-W15-219	29.5	29.5	B01NT7		4/23/1993			U				U				U	
299-W15-219	35.5	35.5	B01NT8		4/23/1993			U				U				U	
299-W15-219	39.8	39.8	B01NT6		4/27/1993			U				U				U	
299-W15-219	44.8	44.8	B01NT9		4/27/1993			U				U				U	
299-W15-219	49.5	49.5	B01NV0		4/27/1993			U				U				U	
299-W15-219	53.5	53.5	B01NV1		4/28/1993			U				U				U	
299-W15-219	54.3	54.3	B01PW6		4/28/1993			U				U				U	
299-W15-219	56.5	56.5	B01PW7		4/28/1993			U				U				U	
299-W15-219	57.9	57.9	B01NV2		4/29/1993			U				U				U	
299-W15-219	65	65	B01PR8		4/29/1993			U				U				U	
299-W15-219	70	70	B01PR9		4/29/1993			U				U				U	
299-W15-219	75.5	75.5	B01PS0		4/29/1993			U				U				U	
299-W15-219	79.5	79.5	B01PS1		4/30/1993			U				U				U	
299-W15-219	84.5	84.5	B01PS2		4/30/1993			U				U				U	
299-W15-219	87	87	B01PW8		5/3/1993			U				U	7	µg/kg		J	
299-W15-219	89.5	89.5	B01PS3		5/3/1993			U				U				U	
299-W15-219	91	91	B01PW9		5/3/1993			U				U				U	
299-W15-219	95.5	95.5	B01PX0		5/4/1993			U				U				U	
299-W15-219	96.5	96.5	B01PS4		5/4/1993			U				U				U	
299-W15-219	100	100	B01PS5		5/4/1993			U				U				U	
299-W15-219	105.5	105.5	B01PS6		5/4/1993			U				U				U	
299-W15-219	109.5	109.5	B01PS7		5/4/1993			U				U				U	
299-W15-219	111.1	111.1	B01PX1		5/5/1993			U				U				U	
299-W15-219	114.5	114.5	B01PX2		5/5/1993			U				U				U	
299-W15-219	114.5	114.5	B01PX3		5/5/1993			U				U				U	
299-W15-219	114.9	114.9	B01PS8		5/5/1993			U				U				U	
299-W15-219	120	120	B01PS9		5/5/1993			U				U				U	
299-W15-219	124.5	124.5	B01PT0		5/11/1993			U				U				U	
299-W15-219	129.5	129.5	B01PT1		5/11/1993			U				U				U	
299-W15-219	131.5	131.5	B01PT2		5/11/1993			U				U				U	
299-W15-219	140	140	B01PT3		5/13/1993			U				U				U	
299-W15-219	145	145	B01PT4		5/13/1993			U				U				U	
299-W15-219	149	149	B01PT5		5/14/1993			U				U				U	
299-W15-219	150.3	150.3	B01PX4		5/14/1993			U				U				U	
299-W15-219	153.4	153.4	B01PX5		5/17/1993			34	µg/kg			U				U	
299-W15-219	155	155	B01PT6		5/17/1993			37	µg/kg			U				U	

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Table C-24. Volatile Organic Analysis Results for 299-W-15-219 (216-Z-9) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-219	160	160	B01PT7		5/17/1993			U			U			U			
299-W15-219	165	165	B01PT8		5/18/1993			U			U			U			
299-W15-219	170	170	B01PT9		5/18/1993			U			U			U			
299-W15-219	175	175	B01PV0		5/18/1993			U			U			U			
299-W15-219	180	180	B01PV1		5/19/1993			U			U			U			
299-W15-219	185	185	B01PV2		5/19/1993			U			U			U			
299-W15-219	187	187	B01PV3		5/19/1993			U			U			U			
299-W15-219	190.3	190.3	B01PV4		5/20/1993	47	µg/kg				U			U			
299-W15-219	195	195	B01PV5		5/20/1993	376	µg/kg	J			U			U			
299-W15-219	200	200	B01PV6		5/21/1993	1329	µg/kg	J			U			U			
299-W15-219	205	205	B01PV7		5/24/1993			U			U			U			
299-W15-219	210.5	210.5	B01PV8		5/25/1993			U			U			U			
299-W15-219	211	211	B07BS6		5/25/1993								1.1	µg/L			

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Table C-25. Volatile Organic Analysis Results for 299-W-15-220 (216-Z-9) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-220	24.8	24.8	B07BT4		6/3/1993	PNL1			U			U			U			U			U	
299-W15-220	29.7	29.7	B07BT5		6/5/1993	PNL1			U			U			U			U			U	
299-W15-220	34.7	34.7	B07BT6		6/7/1993	PNL1			U			U			U			U			U	
299-W15-220	40	40	B07BT7		6/8/1993	PNL1			U			U			U			U			U	
299-W15-220	45	45	B07BT8		6/9/1993	PNL1			U			U			U			U			U	
299-W15-220	50	50	B07BT9		6/9/1993	PNL1			U			U			U			U			U	
299-W15-220	55	55	B07BV0		6/9/1993	PNL1			U			U			U			U			U	
299-W15-220	60	60	B07BV1		6/10/1993	PNL1			U			U			U			U			U	
299-W15-220	64.8	64.8	B07BV2		6/10/1993	PNL1			U			U			U			U			U	
299-W15-220	69.6	69.6	B07BV3		6/11/1993	PNL1			U			U			U			U			U	
299-W15-220	75	75	B07BV4		6/14/1993	PNL1			U			U			U			U			U	
299-W15-220	79.8	79.8	B07BV5		6/14/1993	PNL1			U			U			U			U			U	
299-W15-220	84.6	84.6	B07BV6		6/15/1993	PNL1			U			U			U			U			U	
299-W15-220	90.5	90.5	B07BV7		6/15/1993	PNL1			U			U			U			U			U	
299-W15-220	94.6	94.6	B07BV8		6/16/1993	PNL1			U			U			U			U			U	
299-W15-220	100.5	100.5	B07BV9		6/16/1993	PNL1			U			U			U			U			U	
299-W15-220	104.5	104.5	B07BW0		6/16/1993	PNL1			U			U			U			U			U	
299-W15-220	107.8	107.8	B07BT3		6/17/1993	PNL1			U			U			U			U			U	
299-W15-220	109.6	109.6	B07BW1		6/17/1993	PNL1			U			U			U			U			U	
299-W15-220	114.8	114.8	B07BW2		6/24/1993	PNL1			U			U			U			U			U	
299-W15-220	120	120	B07BW3		6/25/1993	PNL1			U			U			U			U			U	
299-W15-220	123	123	B07BW4		6/25/1993	PNL1			U			U			U			U			U	
299-W15-220	127	127	B07BW5		6/28/1993	PNL1			U			U			U			U			U	
299-W15-220	133	133	B07BW6		6/28/1993	PNL1			U			U			U			U			U	
299-W15-220	138.5	138.5	B07BW7		6/29/1993	PNL1			U			U			U			U			U	
299-W15-220	146	146	B07BW8		7/9/1993	PNL1			U			U			U			U			U	
299-W15-220	150	150	B07BW9		7/12/1993	PNL1			U			U			U			U			U	
299-W15-220	155	155	B07BX0		7/12/1993	PNL1			U			U			U			U			U	
299-W15-220	160	160	B07BX1		7/12/1993	PNL1			U			U			U			U			U	
299-W15-220	164.5	164.5	B07BX2		7/14/1993	PNL1			U			U			U			U			U	
299-W15-220	170	170	B07BX3		7/14/1993	PNL1			U			U			U			U			U	
299-W15-220	175	175	B07BX4		7/15/1993	PNL1			U			U			U			U			U	
299-W15-220	180.5	180.5	B07BX5		7/15/1993	PNL1			U			U			U			U			U	
299-W15-220	185	185	B07BX6		7/19/1993	PNL1			U			U			U			U			U	
299-W15-220	190	190	B07BX7		7/20/1993	PNL1			U			U			U			U			U	
299-W15-220	195	195	B07BX8		7/21/1993	PNL1			U			U			U			U			U	
299-W15-220	200	200	B07BX9		7/21/1993	PNL1			U			U			U			U			U	
299-W15-220	200	200	B07CF4		7/23/1993	PNL1	0.3	µg/L	J			U			U			U			U	

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Table C-25. Volatile Organic Analysis Results for 299-W-15-220 (216-Z-9) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)			Tetrachloroethene (127-18-4)		
						502.2				502.2				502.2			502.2		
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units
299-W15-220	24.8	24.8	B07BT4		6/3/1993			U				U					U		
299-W15-220	29.7	29.7	B07BT5		6/5/1993			U				U							U
299-W15-220	34.7	34.7	B07BT6		6/7/1993			U				U							U
299-W15-220	40	40	B07BT7		6/8/1993			U				U							U
299-W15-220	45	45	B07BT8		6/9/1993			U				U							U
299-W15-220	50	50	B07BT9		6/9/1993			U				U							U
299-W15-220	55	55	B07BV0		6/9/1993			U				U							U
299-W15-220	60	60	B07BV1		6/10/1993			U				U							U
299-W15-220	64.8	64.8	B07BV2		6/10/1993			U				U							U
299-W15-220	69.6	69.6	B07BV3		6/11/1993			U				U							U
299-W15-220	75	75	B07BV4		6/14/1993			U				U							U
299-W15-220	79.8	79.8	B07BV5		6/14/1993			U				U							U
299-W15-220	84.6	84.6	B07BV6		6/15/1993			U				U							U
299-W15-220	90.5	90.5	B07BV7		6/15/1993			U				U							U
299-W15-220	94.6	94.6	B07BV8		6/16/1993			U				U							U
299-W15-220	100.5	100.5	B07BV9		6/16/1993			U		1171	µg/kg								U
299-W15-220	104.5	104.5	B07BW0		6/16/1993			U		86	µg/kg								U
299-W15-220	107.8	107.8	B07BT3		6/17/1993			U		1.6	µg/L	J							U
299-W15-220	109.6	109.6	B07BW1		6/17/1993			U		380	µg/kg								U
299-W15-220	114.8	114.8	B07BW2		6/24/1993			U				U							U
299-W15-220	120	120	B07BW3		6/25/1993			U				U							U
299-W15-220	123	123	B07BW4		6/25/1993			U				U							U
299-W15-220	127	127	B07BW5		6/28/1993			U				U							U
299-W15-220	133	133	B07BW6		6/28/1993			U				U							U
299-W15-220	138.5	138.5	B07BW7		6/29/1993			U				U							U
299-W15-220	146	146	B07BW8		7/9/1993			U				U							U
299-W15-220	150	150	B07BW9		7/12/1993			U				U							U
299-W15-220	155	155	B07BX0		7/12/1993			U				U							U
299-W15-220	160	160	B07BX1		7/12/1993			U				U							U
299-W15-220	164.5	164.5	B07BX2		7/14/1993			U				U							U
299-W15-220	170	170	B07BX3		7/14/1993			U				U							U
299-W15-220	175	175	B07BX4		7/15/1993			U				U							U
299-W15-220	180.5	180.5	B07BX5		7/15/1993			U				U							U
299-W15-220	185	185	B07BX6		7/19/1993			U				U							U
299-W15-220	190	190	B07BX7		7/20/1993			U				U							U
299-W15-220	195	195	B07BX8		7/21/1993			U				U							U
299-W15-220	200	200	B07BX9		7/21/1993			U		4	µg/kg	J							U
299-W15-220	200	200	B07CF4		7/23/1993			U		32	µg/L							1.1	µg/L

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Table C-25. Volatile Organic Analysis Results for 299-W-15-220 (216-Z-9) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-220	24.8	24.8	B07BT4		6/3/1993			U				U				U	
299-W15-220	29.7	29.7	B07BT5		6/5/1993			U				U				U	
299-W15-220	34.7	34.7	B07BT6		6/7/1993			U				U				U	
299-W15-220	40	40	B07BT7		6/8/1993			U				U				U	
299-W15-220	45	45	B07BT8		6/9/1993			U				U				U	
299-W15-220	50	50	B07BT9		6/9/1993			U				U				U	
299-W15-220	55	55	B07BV0		6/9/1993			U				U				U	
299-W15-220	60	60	B07BV1		6/10/1993			U				U				U	
299-W15-220	64.8	64.8	B07BV2		6/10/1993			U				U				U	
299-W15-220	69.6	69.6	B07BV3		6/11/1993			U				U				U	
299-W15-220	75	75	B07BV4		6/14/1993			U				U				U	
299-W15-220	79.8	79.8	B07BV5		6/14/1993			U				U				U	
299-W15-220	84.6	84.6	B07BV6		6/15/1993			U				U				U	
299-W15-220	90.5	90.5	B07BV7		6/15/1993			U				U				U	
299-W15-220	94.6	94.6	B07BV8		6/16/1993			U				U				U	
299-W15-220	100.5	100.5	B07BV9		6/16/1993			U				U				U	
299-W15-220	104.5	104.5	B07BW0		6/16/1993			U				U				U	
299-W15-220	107.8	107.8	B07BT3		6/17/1993			U				U				U	
299-W15-220	109.6	109.6	B07BW1		6/17/1993			U				U				U	
299-W15-220	114.8	114.8	B07BW2		6/24/1993	59	µg/kg					U				U	
299-W15-220	120	120	B07BW3		6/25/1993			U				U				U	
299-W15-220	123	123	B07BW4		6/25/1993	25	µg/kg					U				U	
299-W15-220	127	127	B07BW5		6/28/1993			U				U				U	
299-W15-220	133	133	B07BW6		6/28/1993	29	µg/kg					U				U	
299-W15-220	138.5	138.5	B07BW7		6/29/1993	22	µg/kg					U				U	
299-W15-220	146	146	B07BW8		7/9/1993			U				U				U	
299-W15-220	150	150	B07BW9		7/12/1993			U				U				U	
299-W15-220	155	155	B07BX0		7/12/1993			U				U				U	
299-W15-220	160	160	B07BX1		7/12/1993			U				U				U	
299-W15-220	164.5	164.5	B07BX2		7/14/1993			U				U				U	
299-W15-220	170	170	B07BX3		7/14/1993			U				U				U	
299-W15-220	175	175	B07BX4		7/15/1993			U				U				U	
299-W15-220	180.5	180.5	B07BX5		7/15/1993			U				U				U	
299-W15-220	185	185	B07BX6		7/19/1993			U				U				U	
299-W15-220	190	190	B07BX7		7/20/1993			U				U				U	
299-W15-220	195	195	B07BX8		7/21/1993			U				U				U	
299-W15-220	200	200	B07BX9		7/21/1993	6	µg/kg					U				U	
299-W15-220	200	200	B07CF4		7/23/1993	0.4	µg/L	J				U			0.6	µg/L	

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Table C-26. Metal Analysis Results for 299-W-18-96 (216-Z-18) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Aluminum (7429-90-5)				Antimony (7440-36-0)				Barium (7440-39-3)				Beryllium (7440-41-7)				
							6010				6010				6010				6010				
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
299-W18-96	84	84.5	B01NW7		2/10/1993	DATACH						U				87000	µg/kg			400	µg/kg		
299-W18-96	100.5	100.5	B01NX9		2/12/1993	DATACH						U				73000	µg/kg			400	µg/kg		
299-W18-96	120	120	B01NY7		2/17/1993	DATACH						U				87000	µg/kg			300	µg/kg		
299-W18-96	123.5	123.5	B01NZ1		2/17/1993	DATACH	12000000	µg/kg			8100	µg/kg	L			90000	µg/kg			420	µg/kg		
299-W18-96	125.5	125.5	B01P91		2/18/1993	DATACH						U				70000	µg/kg					U	
299-W18-96	130.5	130.5	B01NZ5		2/22/1993	DATACH						U				86000	µg/kg			300	µg/kg		
299-W18-96	130.5	130.5	B01NZ6		2/22/1993	DATACH						U				84000	µg/kg			400	µg/kg		
299-W18-96	136.5	136.5	B01P03		2/23/1993	DATACH						U				110000	µg/kg			600	µg/kg		
299-W18-96	143.8	143.8	B01P95		2/25/1993	DATACH	13000000	µg/kg			6300	µg/kg	L			88000	µg/kg			580	µg/kg		
299-W18-96	146.5	146.5	B01P99		2/25/1993	DATACH	9300000	µg/kg			8600	µg/kg	L			78000	µg/kg			530	µg/kg		

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Table C-26. Metal Analysis Results for 299-W-18-96 (216-Z-18) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cadmium (7440-43-9)				Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7		2/10/1993			U				U		12000	μg/kg			9000	μg/kg		
299-W18-96	100.5	100.5	B01NX9		2/12/1993			U	8600000	μg/kg				12000	μg/kg			6000	μg/kg		
299-W18-96	120	120	B01NY7		2/17/1993			U	9500000	μg/kg				14000	μg/kg			9000	μg/kg		
299-W18-96	123.5	123.5	B01NZ1		2/17/1993			U	1200000	μg/kg				22000	μg/kg			10000	μg/kg		
299-W18-96	125.5	125.5	B01P91		2/18/1993			U	6300000	μg/kg				10000	μg/kg			9000	μg/kg		
299-W18-96	130.5	130.5	B01NZ5		2/22/1993			U	8600000	μg/kg				13000	μg/kg			7000	μg/kg		
299-W18-96	130.5	130.5	B01NZ6		2/22/1993			U	8800000	μg/kg				16000	μg/kg			7000	μg/kg		
299-W18-96	136.5	136.5	B01P03		2/23/1993			U				U		17000	μg/kg			9000	μg/kg		
299-W18-96	143.8	143.8	B01P95		2/25/1993			U	11000000	μg/kg				20000	μg/kg			7700	μg/kg		
299-W18-96	146.5	146.5	B01P99		2/25/1993			U	23000000	μg/kg				22000	μg/kg			6800	μg/kg		

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Table C-26. Metal Analysis Results for 299-W-18-96 (216-Z-18) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Copper (7440-50-8)				Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)				
						6010				6010				7421				6010				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
299-W18-96	84	84.5	B01NW7		2/10/1993	16000	µg/kg					U			5300	µg/kg			5000000	µg/kg		
299-W18-96	100.5	100.5	B01NX9		2/12/1993	10000	µg/kg					U			4900	µg/kg			5300000	µg/kg		
299-W18-96	120	120	B01NY7		2/17/1993	14000	µg/kg					U			2900	µg/kg			4600000	µg/kg		
299-W18-96	123.5	123.5	B01NZ1		2/17/1993	30000	µg/kg			28000000	µg/kg				5900	µg/kg			4800000	µg/kg		
299-W18-96	125.5	125.5	B01P91		2/18/1993	14000	µg/kg					U			1800	µg/kg			3800000	µg/kg		
299-W18-96	130.5	130.5	B01NZ5		2/22/1993	13000	µg/kg					U			3200	µg/kg			3800000	µg/kg		
299-W18-96	130.5	130.5	B01NZ6		2/22/1993	13000	µg/kg					U			6100	µg/kg			5600000	µg/kg		
299-W18-96	136.5	136.5	B01P03		2/23/1993	20000	µg/kg					U			12000	µg/kg			7000000	µg/kg		
299-W18-96	143.8	143.8	B01P95		2/25/1993	21000	µg/kg			19000000	µg/kg				10000	µg/kg			7300000	µg/kg		
299-W18-96	146.5	146.5	B01P99		2/25/1993	15000	µg/kg			20000000	µg/kg				5400	µg/kg			5900000	µg/kg		

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Table C-26. Metal Analysis Results for 299-W-18-96 (216-Z-18) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Manganese (7439-96-5)				Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)				
						6010				7470				6010				6010				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
299-W18-96	84	84.5	B01NW7		2/10/1993	420000	µg/kg					U			14000	µg/kg			1400000	µg/kg		
299-W18-96	100.5	100.5	B01NX9		2/12/1993	330000	µg/kg					U			12000	µg/kg			2000000	µg/kg		
299-W18-96	120	120	B01NY7		2/17/1993	270000	µg/kg					U			12000	µg/kg			900000	µg/kg		
299-W18-96	123.5	123.5	B01NZ1		2/17/1993	330000	µg/kg					U			14000	µg/kg			750000	µg/kg		
299-W18-96	125.5	125.5	B01P91		2/18/1993	220000	µg/kg					U			16000	µg/kg			630000	µg/kg		
299-W18-96	130.5	130.5	B01NZ5		2/22/1993	230000	µg/kg					U			13000	µg/kg			790000	µg/kg		
299-W18-96	130.5	130.5	B01NZ6		2/22/1993	330000	µg/kg					U			20000	µg/kg			1900000	µg/kg		
299-W18-96	136.5	136.5	B01P03		2/23/1993	330000	µg/kg					U			17000	µg/kg			2100000	µg/kg		
299-W18-96	143.8	143.8	B01P95		2/25/1993	280000	µg/kg					U			16000	µg/kg			2200000	µg/kg		
299-W18-96	146.5	146.5	B01P99		2/25/1993	260000	µg/kg					U			14000	µg/kg			1200000	µg/kg		

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Table C-26. Metal Analysis Results for 299-W-18-96 (216-Z-18) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Silver (7440-22-4)				Sodium (7440-23-5)				Tin (7440-31-5)				Vanadium (7440-62-2)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7		2/10/1993			U	1300000	$\mu\text{g}/\text{kg}$					U	54000	$\mu\text{g}/\text{kg}$				
299-W18-96	100.5	100.5	B01NX9		2/12/1993			U	170000	$\mu\text{g}/\text{kg}$					U	30000	$\mu\text{g}/\text{kg}$				
299-W18-96	120	120	B01NY7		2/17/1993			U	440000	$\mu\text{g}/\text{kg}$					U	57000	$\mu\text{g}/\text{kg}$				
299-W18-96	123.5	123.5	B01NZ1		2/17/1993	330	$\mu\text{g}/\text{kg}$	L	970000	$\mu\text{g}/\text{kg}$			5700	$\mu\text{g}/\text{kg}$	L	77000	$\mu\text{g}/\text{kg}$				
299-W18-96	125.5	125.5	B01P91		2/18/1993			U	450000	$\mu\text{g}/\text{kg}$					U	47000	$\mu\text{g}/\text{kg}$				
299-W18-96	130.5	130.5	B01NZ5		2/22/1993			U	420000	$\mu\text{g}/\text{kg}$					U	49000	$\mu\text{g}/\text{kg}$				
299-W18-96	130.5	130.5	B01NZ6		2/22/1993			U	200000	$\mu\text{g}/\text{kg}$					U	37000	$\mu\text{g}/\text{kg}$				
299-W18-96	136.5	136.5	B01P03		2/23/1993			U	170000	$\mu\text{g}/\text{kg}$					U	33000	$\mu\text{g}/\text{kg}$				
299-W18-96	143.8	143.8	B01P95		2/25/1993			U	200000	$\mu\text{g}/\text{kg}$			5500	$\mu\text{g}/\text{kg}$	L	34000	$\mu\text{g}/\text{kg}$				
299-W18-96	146.5	146.5	B01P99		2/25/1993	500	$\mu\text{g}/\text{kg}$	L	400000	$\mu\text{g}/\text{kg}$					U	67000	$\mu\text{g}/\text{kg}$				

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Table C-26. Metal Analysis Results for 299-W-18-96 (216-Z-18) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Zinc (7440-66-6)			
						6010			
						Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7		2/10/1993	39000	$\mu\text{g}/\text{kg}$		
299-W18-96	100.5	100.5	B01NX9		2/12/1993	37000	$\mu\text{g}/\text{kg}$		
299-W18-96	120	120	B01NY7		2/17/1993	43000	$\mu\text{g}/\text{kg}$		
299-W18-96	123.5	123.5	B01NZ1		2/17/1993	74000	$\mu\text{g}/\text{kg}$		
299-W18-96	125.5	125.5	B01P91		2/18/1993	31000	$\mu\text{g}/\text{kg}$		
299-W18-96	130.5	130.5	B01NZ5		2/22/1993	36000	$\mu\text{g}/\text{kg}$		
299-W18-96	130.5	130.5	B01NZ6		2/22/1993	42000	$\mu\text{g}/\text{kg}$		
299-W18-96	136.5	136.5	B01P03		2/23/1993	54000	$\mu\text{g}/\text{kg}$		
299-W18-96	143.8	143.8	B01P95		2/25/1993	52000	$\mu\text{g}/\text{kg}$		
299-W18-96	146.5	146.5	B01P99		2/25/1993	41000	$\mu\text{g}/\text{kg}$		

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Table C-27. Semi-Volatile Organic Analysis Results for 299-W-18-96 (216-Z-18) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	3-Methylphenol (cresol, m-) (108-39-4)				4-Methylphenol (cresol, p-) (106-44-5)				Benzothiazole (95-16-9)				Bis(2-ethylhexyl) phthalate (117-81-7)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7		2/10/1993				U												
299-W18-96	86.5	86.5	B01NX1		2/11/1993				U												
299-W18-96	86.5	86.5	B01NX3		2/11/1993				U												
299-W18-96	90	90	B01NW9		2/12/1993				U												
299-W18-96	92.3	92.3	B01NX5		2/12/1993				U												
299-W18-96	95	95	B01NX8		2/12/1993				U												
299-W18-96	98	98	B01NY1		2/12/1993				U												
299-W18-96	100.5	100.5	B01NX9		2/12/1993				U												
299-W18-96	104	104	B01NY3		2/12/1993				U												
299-W18-96	110.1	110.1	B01NY4		2/16/1993				U												
299-W18-96	116	116	B01NY6		2/16/1993				U												
299-W18-96	119	119	B01NY9		2/17/1993				U												
299-W18-96	120	120	B01NY7		2/17/1993				U												
299-W18-96	123.5	123.5	B01NZ1		2/17/1993			XU						U					U		
299-W18-96	125.5	125.5	B01P91		2/18/1993				U												
299-W18-96	125.5	125.5	B01P93		2/18/1993				U												
299-W18-96	129	129	B01NZ9		2/22/1993				U												
299-W18-96	129	129	B01P00		2/22/1993				U												
299-W18-96	130.5	130.5	B01NZ5		2/22/1993				U												
299-W18-96	130.5	130.5	B01NZ6		2/22/1993				U												
299-W18-96	134.5	134.5	B01P05		2/22/1993				U												
299-W18-96	136.5	136.5	B01P03		2/23/1993				U												
299-W18-96	138.5	138.5	B01NZ3		2/24/1993			XU						U					U		
299-W18-96	143.8	143.8	B01P95		2/25/1993			XU						U					U		
299-W18-96	144.5	144.5	B01PB1		2/25/1993			XU						U					U		
299-W18-96	146.5	146.5	B01P99		2/25/1993			XU						U					U		

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Table C-27. Semi-Volatile Organic Analysis Results for 299-W-18-96 (216-Z-18) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Decane (124-18-5)				Dodecane (112-40-3)				Naphthalene (91-20-3)				Nitrobenzene-d5 (4165-60-0)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7		2/10/1993			U				U					2900	µg/kg			
299-W18-96	86.5	86.5	B01NX1		2/11/1993			U				U					2900	µg/kg			
299-W18-96	86.5	86.5	B01NX3		2/11/1993			U				U					3300	µg/kg			
299-W18-96	90	90	B01NW9		2/12/1993			U				U					3000	µg/kg			
299-W18-96	92.3	92.3	B01NX5		2/12/1993			U				U					4100	µg/kg			
299-W18-96	95	95	B01NX8		2/12/1993			U				U					3700	µg/kg			
299-W18-96	98	98	B01NY1		2/12/1993			U				U					3400	µg/kg			
299-W18-96	100.5	100.5	B01NX9		2/12/1993			U				U					3000	µg/kg			
299-W18-96	104	104	B01NY3		2/12/1993			U				U					3200	µg/kg			
299-W18-96	110.1	110.1	B01NY4		2/16/1993			U				U					3600	µg/kg			
299-W18-96	116	116	B01NY6		2/16/1993			U				U					3300	µg/kg			
299-W18-96	119	119	B01NY9		2/17/1993			U				U					3100	µg/kg			
299-W18-96	120	120	B01NY7		2/17/1993			U				U					3400	µg/kg			
299-W18-96	123.5	123.5	B01NZ1		2/17/1993			U				U									
299-W18-96	125.5	125.5	B01P91		2/18/1993			U				U					3400	µg/kg			
299-W18-96	125.5	125.5	B01P93		2/18/1993			U				U					3600	µg/kg			
299-W18-96	129	129	B01NZ9		2/22/1993			U				U					3400	µg/kg			
299-W18-96	129	129	B01P00		2/22/1993			U				U					3600	µg/kg			
299-W18-96	130.5	130.5	B01NZ5		2/22/1993			U				U					3300	µg/kg			
299-W18-96	130.5	130.5	B01NZ6		2/22/1993			U				U					3600	µg/kg			
299-W18-96	134.5	134.5	B01P05		2/22/1993			U				U					3600	µg/kg			
299-W18-96	136.5	136.5	B01P03		2/23/1993			U				U					3900	µg/kg			
299-W18-96	138.5	138.5	B01NZ3		2/24/1993			U				U									
299-W18-96	143.8	143.8	B01P95		2/25/1993			U				U									
299-W18-96	144.5	144.5	B01PB1		2/25/1993			U				U									
299-W18-96	146.5	146.5	B01P99		2/25/1993			U				U									

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Table C-27. Semi-Volatile Organic Analysis Results for 299-W-18-96 (216-Z-18) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Pentachlorophenol (87-86-5)				Phenol (108-95-2)				Phenol-d6 (13127-88-3)				Terphenyl-d14 (7Cl) (98904-43-9)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7		2/10/1993			U				U		6300	µg/kg			3400	µg/kg		
299-W18-96	86.5	86.5	B01NX1		2/11/1993			U				U		6000	µg/kg			3100	µg/kg		
299-W18-96	86.5	86.5	B01NX3		2/11/1993			U				U		7000	µg/kg			3200	µg/kg		
299-W18-96	90	90	B01NW9		2/12/1993			U				U		6200	µg/kg			3100	µg/kg		
299-W18-96	92.3	92.3	B01NX5		2/12/1993			U				U		8400	µg/kg			3900	µg/kg		
299-W18-96	95	95	B01NX8		2/12/1993			U				U		7300	µg/kg			3500	µg/kg		
299-W18-96	98	98	B01NY1		2/12/1993			U				U		7000	µg/kg			3500	µg/kg		
299-W18-96	100.5	100.5	B01NX9		2/12/1993			U				U		6200	µg/kg			3300	µg/kg		
299-W18-96	104	104	B01NY3		2/12/1993			U				U		6800	µg/kg			3000	µg/kg		
299-W18-96	110.1	110.1	B01NY4		2/16/1993			U				U		7300	µg/kg			3200	µg/kg		
299-W18-96	116	116	B01NY6		2/16/1993			U				U		6900	µg/kg			3000	µg/kg		
299-W18-96	119	119	B01NY9		2/17/1993			U				U		6300	µg/kg			3200	µg/kg		
299-W18-96	120	120	B01NY7		2/17/1993			U				U		6900	µg/kg			3200	µg/kg		
299-W18-96	123.5	123.5	B01NZ1		2/17/1993			U				U									
299-W18-96	125.5	125.5	B01P91		2/18/1993			U				U		7200	µg/kg			3100	µg/kg		
299-W18-96	125.5	125.5	B01P93		2/18/1993			U				U		7200	µg/kg			3300	µg/kg		
299-W18-96	129	129	B01NZ9		2/22/1993			U				U		7100	µg/kg			3300	µg/kg		
299-W18-96	129	129	B01P00		2/22/1993			U				U		7600	µg/kg			3400	µg/kg		
299-W18-96	130.5	130.5	B01NZ5		2/22/1993			U				U		6600	µg/kg			3300	µg/kg		
299-W18-96	130.5	130.5	B01NZ6		2/22/1993			U				U		7200	µg/kg			3200	µg/kg		
299-W18-96	134.5	134.5	B01P05		2/22/1993			U				U		7600	µg/kg			3400	µg/kg		
299-W18-96	136.5	136.5	B01P03		2/23/1993			U				U		8400	µg/kg			3900	µg/kg		
299-W18-96	138.5	138.5	B01NZ3		2/24/1993			U				U									
299-W18-96	143.8	143.8	B01P95		2/25/1993			U				U									
299-W18-96	144.5	144.5	B01PB1		2/25/1993			U				U									
299-W18-96	146.5	146.5	B01P99		2/25/1993			U				U									

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Table C-27. Semi-Volatile Organic Analysis Results for 299-W-18-96 (216-Z-18) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)				Tris-2-chloroethyl phosphate (115-96-8)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7		2/10/1993			U			U						
299-W18-96	86.5	86.5	B01NX1		2/11/1993			U			U						
299-W18-96	86.5	86.5	B01NX3		2/11/1993			U			U						
299-W18-96	90	90	B01NW9		2/12/1993			U			U						
299-W18-96	92.3	92.3	B01NX5		2/12/1993			U			U						
299-W18-96	95	95	B01NX8		2/12/1993			U			U						
299-W18-96	98	98	B01NY1		2/12/1993			U			U						
299-W18-96	100.5	100.5	B01NX9		2/12/1993			U			U						
299-W18-96	104	104	B01NY3		2/12/1993			U			U						
299-W18-96	110.1	110.1	B01NY4		2/16/1993			U			U						
299-W18-96	116	116	B01NY6		2/16/1993			U			U						
299-W18-96	119	119	B01NY9		2/17/1993			U			U						
299-W18-96	120	120	B01NY7		2/17/1993			U			U						
299-W18-96	123.5	123.5	B01NZ1		2/17/1993			U			U					U	
299-W18-96	125.5	125.5	B01P91		2/18/1993			U			U						
299-W18-96	125.5	125.5	B01P93		2/18/1993			U			U						
299-W18-96	129	129	B01NZ9		2/22/1993			U			U						
299-W18-96	129	129	B01P00		2/22/1993			U			U						
299-W18-96	130.5	130.5	B01NZ5		2/22/1993			U			U						
299-W18-96	130.5	130.5	B01NZ6		2/22/1993			U			U						
299-W18-96	134.5	134.5	B01P05		2/22/1993			U			U						
299-W18-96	136.5	136.5	B01P03		2/23/1993			U			U						
299-W18-96	138.5	138.5	B01NZ3		2/24/1993			U			U						U
299-W18-96	143.8	143.8	B01P95		2/25/1993			U			U						U
299-W18-96	144.5	144.5	B01PB1		2/25/1993			U			U						U
299-W18-96	146.5	146.5	B01P99		2/25/1993			U			U						U

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Table C-28. Volatile Organic Analysis Results for 299-W-18-96 (216-Z-18) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7		2/10/1993	PNL1			U			U			U			U				
299-W18-96	86.5	86.5	B01NX1		2/11/1993	PNL1			U			U			U			U				
299-W18-96	86.5	86.5	B01NX3		2/11/1993	PNL1			U			U			U			U				
299-W18-96	90	90	B01NW8		2/12/1993	PNL1			U			U			U			U				
299-W18-96	90	90	B01NW9		2/12/1993	PNL1			U			U			U			U				
299-W18-96	92.3	92.3	B01NX5		2/12/1993	PNL1			U			U			U			U				
299-W18-96	92.3	92.3	B01NX7		2/12/1993	PNL1			U			U			U			U				
299-W18-96	95	95	B01NX8		2/12/1993	PNL1			U			U			U			U				
299-W18-96	98	98	B01NY1		2/12/1993	PNL1			U			U			U			U				
299-W18-96	98	98	B01NY2		2/12/1993	PNL1			U			U			U			U				
299-W18-96	100.5	100.5	B01NX9		2/12/1993	PNL1			U			U			U			U				
299-W18-96	100.5	100.5	B01NY0		2/12/1993	PNL1			U			U			U			U				
299-W18-96	104	104	B01NY3		2/12/1993	PNL1			U			U			U			U				
299-W18-96	110.1	110.1	B01NY4		2/16/1993	PNL1			U			U			U			U				
299-W18-96	110.1	110.1	B01NY5		2/16/1993	PNL1			U			U			U			U				
299-W18-96	116	116	B01NY6		2/16/1993	PNL1			U			U			U			U				
299-W18-96	119	119	B01NY9		2/17/1993	PNL1			U			U			U			U				
299-W18-96	120	120	B01NY7		2/17/1993	PNL1			U			U			U			U				
299-W18-96	120	120	B01NY8		2/17/1993	PNL1			U			U			U			U				
299-W18-96	123.5	123.5	B01NZ1		2/17/1993	PNL1			U			U			U			U				
299-W18-96	123.5	123.5	B01NZ2		2/17/1993	PNL1			U			U			U			U				
299-W18-96	125.5	125.5	B01P91		2/18/1993	PNL1			U			U			U			U				
299-W18-96	125.5	125.5	B01P92		2/18/1993	PNL1			U			U			U			U				
299-W18-96	125.5	125.5	B01P93		2/18/1993	PNL1			U			U			U			U				
299-W18-96	125.5	125.5	B01P94		2/18/1993	PNL1			U			U			U			U				
299-W18-96	129	129	B01NZ9		2/22/1993	PNL1			U			U			U			U				
299-W18-96	129	129	B01P00		2/22/1993	PNL1			U			U			U			U				
299-W18-96	129	129	B01P01		2/22/1993	PNL1			U			U			U			U				
299-W18-96	129	129	B01P02		2/22/1993	PNL1			U			U			U			U				
299-W18-96	130.5	130.5	B01NZ5		2/22/1993	PNL1			U			U			U			U				
299-W18-96	130.5	130.5	B01NZ6		2/22/1993	PNL1			U			U			U			U				
299-W18-96	130.5	130.5	B01NZ7		2/22/1993	PNL1			U			U			U			U				
299-W18-96	130.5	130.5	B01NZ8		2/22/1993	PNL1			U			U			U			U				
299-W18-96	134.5	134.5	B01P05		2/22/1993	PNL1			U			U			U			U				
299-W18-96	134.5	134.5	B01P06		2/22/1993	PNL1			U			U			U			U				
299-W18-96	136.5	136.5	B01P03		2/23/1993	PNL1			U			U			U			U				
299-W18-96	136.5	136.5	B01P04		2/23/1993	PNL1			U			U			U			U				

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Table C-28. Volatile Organic Analysis Results for 299-W-18-96 (216-Z-18) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	138.5	138.5	B01NZ3		2/24/1993	PNL1			U					U					U			
299-W18-96	138.5	138.5	B01NZ4		2/24/1993	PNL1			U					U					U			
299-W18-96	143.8	143.8	B01P95		2/25/1993	PNL1			U					U					U			
299-W18-96	143.8	143.8	B01P96		2/25/1993	PNL1			U					U					U			
299-W18-96	143.8	143.8	B01P98		2/25/1993	PNL1			U					U					U			
299-W18-96	144.5	144.5	B01PB0		2/25/1993	PNL1			U					U					U			
299-W18-96	144.5	144.5	B01PB1		2/25/1993	PNL1			U					U					U			
299-W18-96	146.5	146.5	B01P99		2/25/1993	PNL1			U					U					U			
299-W18-96	146.5	146.5	B01PB2		2/25/1993	PNL1			U					U					U			

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Table C-28. Volatile Organic Analysis Results for 299-W-18-96 (216-Z-18) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2- Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7		2/10/1993	89	µg/kg					U			U			U			
299-W18-96	86.5	86.5	B01NX1		2/11/1993	79	µg/kg					U			U			U			
299-W18-96	86.5	86.5	B01NX3		2/11/1993	93	µg/kg					U			U			U			
299-W18-96	90	90	B01NW8		2/12/1993	332	µg/kg			16	µg/kg	J			U			U			
299-W18-96	90	90	B01NW9		2/12/1993	440	µg/kg			21	µg/kg	J			U			U			
299-W18-96	92.3	92.3	B01NX5		2/12/1993	99	µg/kg					U			U			U			
299-W18-96	92.3	92.3	B01NX7		2/12/1993	56	µg/kg					U			U			U			
299-W18-96	95	95	B01NX8		2/12/1993	124	µg/kg					U			U			U			
299-W18-96	98	98	B01NY1		2/12/1993	111	µg/kg					U			U			U			
299-W18-96	98	98	B01NY2		2/12/1993	193	µg/kg					U			U			U			
299-W18-96	100.5	100.5	B01NX9		2/12/1993	242	µg/kg					U			U			U			
299-W18-96	100.5	100.5	B01NY0		2/12/1993	127	µg/kg					U			U			U			
299-W18-96	104	104	B01NY3		2/12/1993	140	µg/kg					U			U			U			
299-W18-96	110.1	110.1	B01NY4		2/16/1993	10	µg/kg	J				U			U			U			
299-W18-96	110.1	110.1	B01NY5		2/16/1993	4	µg/kg	J				U			U			U			
299-W18-96	116	116	B01NY6		2/16/1993	12	µg/kg					U			U			U			
299-W18-96	119	119	B01NY9		2/17/1993	6	µg/kg	J				U			U			U			
299-W18-96	120	120	B01NY7		2/17/1993	7	µg/kg	J				U			U			U			
299-W18-96	120	120	B01NY8		2/17/1993	2	µg/kg	J				U			U			U			
299-W18-96	123.5	123.5	B01NZ1		2/17/1993	41	µg/kg					U			U			U			
299-W18-96	123.5	123.5	B01NZ2		2/17/1993	52	µg/kg					U			U			U			
299-W18-96	125.5	125.5	B01P91		2/18/1993	41	µg/kg					U			U			U			
299-W18-96	125.5	125.5	B01P92		2/18/1993	68	µg/kg					U			U			U			
299-W18-96	125.5	125.5	B01P93		2/18/1993	5	µg/kg	J				U			U			U			
299-W18-96	125.5	125.5	B01P94		2/18/1993	8	µg/kg	J				U			U			U			
299-W18-96	129	129	B01NZ9		2/22/1993	65	µg/kg					U			U			U			
299-W18-96	129	129	B01P00		2/22/1993	43	µg/kg					U			U			U			
299-W18-96	129	129	B01P01		2/22/1993	28	µg/kg					U			U			U			
299-W18-96	129	129	B01P02		2/22/1993	39	µg/kg					U			U			U			
299-W18-96	130.5	130.5	B01NZ5		2/22/1993	16	µg/kg					U			U			U			
299-W18-96	130.5	130.5	B01NZ6		2/22/1993	14	µg/kg					U			U			U			
299-W18-96	130.5	130.5	B01NZ7		2/22/1993	5	µg/kg	J				U			U			U			
299-W18-96	130.5	130.5	B01NZ8		2/22/1993	4	µg/kg	J				U			U			U			
299-W18-96	134.5	134.5	B01P05		2/22/1993	111	µg/kg			44	µg/kg				U			U			
299-W18-96	134.5	134.5	B01P06		2/22/1993	17	µg/kg	J				U			U			U			
299-W18-96	136.5	136.5	B01P03		2/23/1993	786	µg/kg			7	µg/kg	J			U			U			
299-W18-96	136.5	136.5	B01P04		2/23/1993	759	µg/kg			5	µg/kg	J			U			U			

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Table C-28. Volatile Organic Analysis Results for 299-W-18-96 (216-Z-18) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2- Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	138.5	138.5	B01NZ3		2/24/1993	334	µg/kg			4	µg/kg	J				U			U		
299-W18-96	138.5	138.5	B01NZ4		2/24/1993	494	µg/kg			4	µg/kg	J				U			U		
299-W18-96	143.8	143.8	B01P95		2/25/1993	861	µg/kg			5	µg/kg	J				U			U		
299-W18-96	143.8	143.8	B01P96		2/25/1993	714	µg/kg			4	µg/kg	J				U			U		
299-W18-96	143.8	143.8	B01P98		2/25/1993	626	µg/kg					U				U			U		
299-W18-96	144.5	144.5	B01PB0		2/25/1993	24	µg/kg	J		4	µg/kg	J				U			U		
299-W18-96	144.5	144.5	B01PB1		2/25/1993	28	µg/kg			3	µg/kg	J				U			U		
299-W18-96	146.5	146.5	B01P99		2/25/1993	33	µg/kg					U				U			U		
299-W18-96	146.5	146.5	B01PB2		2/25/1993	33	µg/kg					U				U			U		

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Table C-28. Volatile Organic Analysis Results for 299-W-18-96 (216-Z-18) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7		2/10/1993			U				U			U				U		
299-W18-96	86.5	86.5	B01NX1		2/11/1993			U				U			U				U		
299-W18-96	86.5	86.5	B01NX3		2/11/1993			U				U			U				U		
299-W18-96	90	90	B01NW8		2/12/1993			U				U			U				U		
299-W18-96	90	90	B01NW9		2/12/1993			U				U			U				U		
299-W18-96	92.3	92.3	B01NX5		2/12/1993			U				U			U				U		
299-W18-96	92.3	92.3	B01NX7		2/12/1993			U				U			U				U		
299-W18-96	95	95	B01NX8		2/12/1993			U				U			U				U		
299-W18-96	98	98	B01NY1		2/12/1993			U				U			U				U		
299-W18-96	98	98	B01NY2		2/12/1993			U				U			U				U		
299-W18-96	100.5	100.5	B01NX9		2/12/1993			U				U			U				U		
299-W18-96	100.5	100.5	B01NY0		2/12/1993			U				U			U				U		
299-W18-96	104	104	B01NY3		2/12/1993			U				U			U				U		
299-W18-96	110.1	110.1	B01NY4		2/16/1993			U				U			U				U		
299-W18-96	110.1	110.1	B01NY5		2/16/1993			U				U			U				U		
299-W18-96	116	116	B01NY6		2/16/1993			U				U			U				U		
299-W18-96	119	119	B01NY9		2/17/1993			U				U			U				U		
299-W18-96	120	120	B01NY7		2/17/1993			U				U			U				U		
299-W18-96	120	120	B01NY8		2/17/1993			U				U			U				U		
299-W18-96	123.5	123.5	B01NZ1		2/17/1993			U				U			U				U		
299-W18-96	123.5	123.5	B01NZ2		2/17/1993			U				U			U				U		
299-W18-96	125.5	125.5	B01P91		2/18/1993			U		61	µg/kg				U				U		
299-W18-96	125.5	125.5	B01P92		2/18/1993			U				U			U				U		
299-W18-96	125.5	125.5	B01P93		2/18/1993			U				U			U				U		
299-W18-96	125.5	125.5	B01P94		2/18/1993			U		85	µg/kg				U				U		
299-W18-96	129	129	B01NZ9		2/22/1993			U				U			U				U		
299-W18-96	129	129	B01P00		2/22/1993			U				U			U				U		
299-W18-96	129	129	B01P01		2/22/1993			U				U			U				U		
299-W18-96	129	129	B01P02		2/22/1993			U				U			U				U		
299-W18-96	130.5	130.5	B01NZ5		2/22/1993			U				U			U				U		
299-W18-96	130.5	130.5	B01NZ6		2/22/1993			U				U			U				U		
299-W18-96	130.5	130.5	B01NZ7		2/22/1993			U		182	µg/kg				U				U		
299-W18-96	130.5	130.5	B01NZ8		2/22/1993			U				U			U				U		
299-W18-96	134.5	134.5	B01P05		2/22/1993			U				U			U				U		
299-W18-96	134.5	134.5	B01P06		2/22/1993			U				U			U				U		
299-W18-96	136.5	136.5	B01P03		2/23/1993			U				U			U				U		
299-W18-96	136.5	136.5	B01P04		2/23/1993			U				U			U				U		

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Table C-28. Volatile Organic Analysis Results for 299-W-18-96 (216-Z-18) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	138.5	138.5	B01NZ3		2/24/1993			U				U			U				U		
299-W18-96	138.5	138.5	B01NZ4		2/24/1993			U				U			U				U		
299-W18-96	143.8	143.8	B01P95		2/25/1993			U				U			U				U		
299-W18-96	143.8	143.8	B01P96		2/25/1993			U				U			U				U		
299-W18-96	143.8	143.8	B01P98		2/25/1993			U				U			U				U		
299-W18-96	144.5	144.5	B01PB0		2/25/1993			U				U			U				U		
299-W18-96	144.5	144.5	B01PB1		2/25/1993			U				U			U				U		
299-W18-96	146.5	146.5	B01P99		2/25/1993			U				U			U				U		
299-W18-96	146.5	146.5	B01PB2		2/25/1993			U				U			U				U		

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Table C-28. Volatile Organic Analysis Results for 299-W-18-96 (216-Z-18) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7		2/10/1993			U				U				U	
299-W18-96	86.5	86.5	B01NX1		2/11/1993	94	µg/kg					U				U	
299-W18-96	86.5	86.5	B01NX3		2/11/1993			U				U				U	
299-W18-96	90	90	B01NW8		2/12/1993			U				U				U	
299-W18-96	90	90	B01NW9		2/12/1993			U				U				U	
299-W18-96	92.3	92.3	B01NX5		2/12/1993			U				U				U	
299-W18-96	92.3	92.3	B01NX7		2/12/1993			U				U				U	
299-W18-96	95	95	B01NX8		2/12/1993			U				U				U	
299-W18-96	98	98	B01NY1		2/12/1993			U				U				U	
299-W18-96	98	98	B01NY2		2/12/1993			U				U				U	
299-W18-96	100.5	100.5	B01NX9		2/12/1993			U				U				U	
299-W18-96	100.5	100.5	B01NY0		2/12/1993			U				U				U	
299-W18-96	104	104	B01NY3		2/12/1993			U				U				U	
299-W18-96	110.1	110.1	B01NY4		2/16/1993			U				U				U	
299-W18-96	110.1	110.1	B01NY5		2/16/1993			U				U				U	
299-W18-96	116	116	B01NY6		2/16/1993			U				U				U	
299-W18-96	119	119	B01NY9		2/17/1993			U				U				U	
299-W18-96	120	120	B01NY7		2/17/1993	14	µg/kg					U				U	
299-W18-96	120	120	B01NY8		2/17/1993			U				U				U	
299-W18-96	123.5	123.5	B01NZ1		2/17/1993	12	µg/kg					U				U	
299-W18-96	123.5	123.5	B01NZ2		2/17/1993			U				U				U	
299-W18-96	125.5	125.5	B01P91		2/18/1993			U				U				U	
299-W18-96	125.5	125.5	B01P92		2/18/1993			U				U				U	
299-W18-96	125.5	125.5	B01P93		2/18/1993	55	µg/kg					U				U	
299-W18-96	125.5	125.5	B01P94		2/18/1993	54	µg/kg					U				U	
299-W18-96	129	129	B01NZ9		2/22/1993			U				U				U	
299-W18-96	129	129	B01P00		2/22/1993			U				U				U	
299-W18-96	129	129	B01P01		2/22/1993			U				U				U	
299-W18-96	129	129	B01P02		2/22/1993			U				U				U	
299-W18-96	130.5	130.5	B01NZ5		2/22/1993	7	µg/kg					U				U	
299-W18-96	130.5	130.5	B01NZ6		2/22/1993	12	µg/kg					U				U	
299-W18-96	130.5	130.5	B01NZ7		2/22/1993	84	µg/kg					U				U	
299-W18-96	130.5	130.5	B01NZ8		2/22/1993			U				U				U	
299-W18-96	134.5	134.5	B01P05		2/22/1993	15	µg/kg					U				U	
299-W18-96	134.5	134.5	B01P06		2/22/1993	25	µg/kg					U				U	
299-W18-96	136.5	136.5	B01P03		2/23/1993			U				U				U	
299-W18-96	136.5	136.5	B01P04		2/23/1993			U				U				U	

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Table C-28. Volatile Organic Analysis Results for 299-W-18-96 (216-Z-18) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	138.5	138.5	B01NZ3		2/24/1993	12	µg/kg					U					U
299-W18-96	138.5	138.5	B01NZ4		2/24/1993	13	µg/kg					U					U
299-W18-96	143.8	143.8	B01P95		2/25/1993				U			U					U
299-W18-96	143.8	143.8	B01P96		2/25/1993				U			U					U
299-W18-96	143.8	143.8	B01P98		2/25/1993				U			U					U
299-W18-96	144.5	144.5	B01PB0		2/25/1993				U			U					U
299-W18-96	144.5	144.5	B01PB1		2/25/1993				U			U					U
299-W18-96	146.5	146.5	B01P99		2/25/1993				U			U					U
299-W18-96	146.5	146.5	B01PB2		2/25/1993				U			U					U

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Table C-29. Wet Chemistry Analysis Results for 299-W-18-96 (216-Z-18) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Nitrate (14797-55-8)				Nitrite (14797-65-0)				Bromide (24959-67-9)				Chloride (16887-00-6)								
							D4327				D4327				D4327				D4327								
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ					
299-W18-96	84	84.5	B01NW7		2/10/1993	DATACH	4400000	µg/kg					1900	µg/kg					U		22000	µg/kg					
299-W18-96	100.5	100.5	B01NX9		2/12/1993	DATACH	990000	µg/kg												U		6300	µg/kg				
299-W18-96	120	120	B01NY7		2/17/1993	DATACH	12000	µg/kg												U		3800	µg/kg				
299-W18-96	123.5	123.5	B01NZ1		2/17/1993	DATACH	11000	µg/kg					600	µg/kg							U		3900	µg/kg			
299-W18-96	125.5	125.5	B01P91		2/18/1993	DATACH	6000	µg/kg													U		3400	µg/kg			
299-W18-96	130.5	130.5	B01NZ5		2/22/1993	DATACH	2400	µg/kg													U		1800	µg/kg			
299-W18-96	130.5	130.5	B01NZ6		2/22/1993	DATACH	1800	µg/kg									600	µg/kg				U		1800	µg/kg		
299-W18-96	136.5	136.5	B01P03		2/23/1993	DATACH	1200	µg/kg													U		900	µg/kg			
299-W18-96	143.8	143.8	B01P95		2/25/1993	DATACH	1400	µg/kg													U		1900	µg/kg			
299-W18-96	146.5	146.5	B01P99		2/25/1993	DATACH	1200	µg/kg													U		1600	µg/kg			

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Table C-29. Wet Chemistry Analysis Results for 299-W-18-96 (216-Z-18) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)			
						9010				9012				D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7		2/10/1993			U						4700	$\mu\text{g}/\text{kg}$					U	
299-W18-96	100.5	100.5	B01NX9		2/12/1993			U						1000	$\mu\text{g}/\text{kg}$					U	
299-W18-96	120	120	B01NY7		2/17/1993			U						1000	$\mu\text{g}/\text{kg}$					U	
299-W18-96	123.5	123.5	B01NZ1		2/17/1993						U			400	$\mu\text{g}/\text{kg}$					U	
299-W18-96	125.5	125.5	B01P91		2/18/1993			U						900	$\mu\text{g}/\text{kg}$					U	
299-W18-96	130.5	130.5	B01NZ5		2/22/1993			U						700	$\mu\text{g}/\text{kg}$					U	
299-W18-96	130.5	130.5	B01NZ6		2/22/1993			U						700	$\mu\text{g}/\text{kg}$					U	
299-W18-96	136.5	136.5	B01P03		2/23/1993			U						300	$\mu\text{g}/\text{kg}$					U	
299-W18-96	143.8	143.8	B01P95		2/25/1993						U			600	$\mu\text{g}/\text{kg}$		800	$\mu\text{g}/\text{kg}$		L	
299-W18-96	146.5	146.5	B01P99		2/25/1993						U			300	$\mu\text{g}/\text{kg}$		1100	$\mu\text{g}/\text{kg}$			

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Table C-29. Wet Chemistry Analysis Results for 299-W-18-96 (216-Z-18) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sulfate (14808-79-8)			
						D4327			
						Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7		2/10/1993	22000	µg/kg		
299-W18-96	100.5	100.5	B01NX9		2/12/1993	7000	µg/kg		
299-W18-96	120	120	B01NY7		2/17/1993	19000	µg/kg		
299-W18-96	123.5	123.5	B01NZ1		2/17/1993	15000	µg/kg		
299-W18-96	125.5	125.5	B01P91		2/18/1993	18000	µg/kg		
299-W18-96	130.5	130.5	B01NZ5		2/22/1993	8000	µg/kg		
299-W18-96	130.5	130.5	B01NZ6		2/22/1993	8000	µg/kg		
299-W18-96	136.5	136.5	B01P03		2/23/1993	3000	µg/kg		
299-W18-96	143.8	143.8	B01P95		2/25/1993	4800	µg/kg		
299-W18-96	146.5	146.5	B01P99		2/25/1993	3200	µg/kg		

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Table C-30. Metal Analysis Results for 299-W-18-174 (216-Z-1A) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)				Copper (7440-50-8)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	56	56	B01PH5		3/22/1993	11000000	µg/kg			15000	µg/kg			9000	µg/kg			24000	µg/kg		
299-W18-174	74.5	74.5	B01PH7		3/25/1993	9500000	µg/kg			10000	µg/kg			7000	µg/kg			10000	µg/kg		
299-W18-174	93.5	93.5	B01PH9		3/30/1993	11000000	µg/kg			11000	µg/kg			10000	µg/kg			23000	µg/kg		
299-W18-174	114.2	114.2	B01PJ1		4/5/1993	9900000	µg/kg			14000	µg/kg			7000	µg/kg			21000	µg/kg		
299-W18-174	118.5	118.5	B01PJ3		4/5/1993	12000000	µg/kg			19000	µg/kg			7000	µg/kg			16000	µg/kg		
299-W18-174	124.9	124.9	B01PJ5		4/6/1993	13000000	µg/kg			16000	µg/kg			9000	µg/kg			18000	µg/kg		
299-W18-174	124.9	125.4	B01PN6		4/6/1993	13000000	µg/kg			15000	µg/kg			8000	µg/kg			17000	µg/kg		
299-W18-174	128.9	128.9	B01PJ7		4/7/1993	18000000	µg/kg			17000	µg/kg			9000	µg/kg			16000	µg/kg		

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Table C-30. Metal Analysis Results for 299-W-18-174 (216-Z-1A) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)				Manganese (7439-96-5)			
						6010				7421				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	56	56	B01PH5		3/22/1993	21000000	µg/kg			6000	µg/kg			6500000	µg/kg			430000	µg/kg		
299-W18-174	74.5	74.5	B01PH7		3/25/1993	18000000	µg/kg			3300	µg/kg			4900000	µg/kg			340000	µg/kg		
299-W18-174	93.5	93.5	B01PH9		3/30/1993	23000000	µg/kg			1800	µg/kg			5400000	µg/kg			270000	µg/kg		
299-W18-174	114.2	114.2	B01PJ1		4/5/1993	17000000	µg/kg			6200	µg/kg			5400000	µg/kg			320000	µg/kg		
299-W18-174	118.5	118.5	B01PJ3		4/5/1993	19000000	µg/kg			4100	µg/kg			5900000	µg/kg			340000	µg/kg		
299-W18-174	124.9	124.9	B01PJ5		4/6/1993	19000000	µg/kg			5900	µg/kg			7400000	µg/kg			330000	µg/kg		
299-W18-174	124.9	125.4	B01PN6		4/6/1993	19000000	µg/kg			11000	µg/kg			7200000	µg/kg			310000	µg/kg		
299-W18-174	128.9	128.9	B01PJ7		4/7/1993	15000000	µg/kg			4600	µg/kg			6100000	µg/kg			240000	µg/kg		

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Table C-30. Metal Analysis Results for 299-W-18-174 (216-Z-1A) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)				Silver (7440-22-4)			
						7470				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	56	56	B01PH5		3/22/1993			U		13000	µg/kg			2700000	µg/kg					U	
299-W18-174	74.5	74.5	B01PH7		3/25/1993			U		9000	µg/kg			1400000	µg/kg					U	
299-W18-174	93.5	93.5	B01PH9		3/30/1993			U		15000	µg/kg			1100000	µg/kg					U	
299-W18-174	114.2	114.2	B01PJ1		4/5/1993			U		14000	µg/kg			1600000	µg/kg					U	
299-W18-174	118.5	118.5	B01PJ3		4/5/1993			U		12000	µg/kg			1800000	µg/kg					U	
299-W18-174	124.9	124.9	B01PJ5		4/6/1993			U		15000	µg/kg			2200000	µg/kg					U	
299-W18-174	124.9	125.4	B01PN6		4/6/1993			U		15000	µg/kg			2100000	µg/kg					U	
299-W18-174	128.9	128.9	B01PJ7		4/7/1993			U		16000	µg/kg			1500000	µg/kg					U	

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Table C-30. Metal Analysis Results for 299-W-18-174 (216-Z-1A) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sodium (7440-23-5)				Tin (7440-31-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)							
						6010				6010				6010				6010							
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ				
299-W18-174	56	56	B01PH5		3/22/1993	1300000	µg/kg					U						40000	µg/kg			52000	µg/kg		
299-W18-174	74.5	74.5	B01PH7		3/25/1993	550000	µg/kg					U						40000	µg/kg			38000	µg/kg		
299-W18-174	93.5	93.5	B01PH9		3/30/1993	1600000	µg/kg					U						52000	µg/kg			42000	µg/kg		
299-W18-174	114.2	114.2	B01PJ1		4/5/1993	510000	µg/kg					U						36000	µg/kg			41000	µg/kg		
299-W18-174	118.5	118.5	B01PJ3		4/5/1993	590000	µg/kg					U						43000	µg/kg			42000	µg/kg		
299-W18-174	124.9	124.9	B01PJ5		4/6/1993	600000	µg/kg					U						31000	µg/kg			47000	µg/kg		
299-W18-174	124.9	125.4	B01PN6		4/6/1993	580000	µg/kg					U						30000	µg/kg			45000	µg/kg		
299-W18-174	128.9	128.9	B01PJ7		4/7/1993	410000	µg/kg					U						28000	µg/kg			35000	µg/kg		

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Table C-31. Semi-Volatile Organic Analysis Results for 299-W-18-174 (216-Z-1A) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	2-Methylphenol (cresol, o-) (95-48-7)				3-Methylphenol (cresol, m-) (108-39-4)				4-Methylphenol (cresol, p-) (106-44-5)				Decane (124-18-5)					
							8270				8270				8270				8270					
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ		
299-W18-174	53	53	B01PF1		3/19/1993	DATACH			U				U				U							U
299-W18-174	56	56	B01PH5		3/22/1993	DATACH			U				U				U							U
299-W18-174	57.5	57.5	B01PK9		3/24/1993	DATACH			U				U				U							U
299-W18-174	61	61	B01PL1		3/24/1993	DATACH			U				U				U							U
299-W18-174	66	66	B01PL3		3/25/1993	DATACH			U				U				U							U
299-W18-174	71.5	71.5	B01PF3		3/25/1993	DATACH			U				U				U							U
299-W18-174	74.5	74.5	B01PH7		3/25/1993	DATACH			U				U				U							U
299-W18-174	76	76	B01PL5		3/26/1993	DATACH			U				U				U							U
299-W18-174	80.6	80.6	B01PL7		3/29/1993	DATACH			U				U				U							U
299-W18-174	86.6	86.6	B01PL9		3/29/1993	DATACH			U				U				U							U
299-W18-174	90.4	90.4	B01PF5		3/29/1993	DATACH			U				U				U							U
299-W18-174	93.5	93.5	B01PH9		3/30/1993	DATACH			U				U				U							U
299-W18-174	96	96	B01PM1		3/30/1993	DATACH			U				U				U							U
299-W18-174	101.1	101.1	B01PF7		4/1/1993	DATACH			U				U				U							U
299-W18-174	105	105	B01PM3		4/2/1993	DATACH			U				U				U							U
299-W18-174	111.5	111.5	B01PM5		4/2/1993	DATACH			U				U				U							U
299-W18-174	114.2	114.2	B01PJ1		4/5/1993	DATACH			U				U				U							U
299-W18-174	116.1	116.1	B01PM7		4/5/1993	DATACH			U				U				U							U
299-W18-174	118.5	118.5	B01PJ3		4/5/1993	DATACH			U				U				U							U
299-W18-174	122.2	122.2	B01PF9		4/6/1993	DATACH			U				U				U							U
299-W18-174	124.9	124.9	B01PJ5		4/6/1993	DATACH			U				U				U							U
299-W18-174	124.9	125.4	B01PN6		4/6/1993	DATACH			U				U				U							U
299-W18-174	127.1	127.1	B01PG1		4/7/1993	DATACH			U				U				U							U
299-W18-174	128.9	128.9	B01PJ7		4/7/1993	DATACH			U				U				U							U
299-W18-174	131	131	B01PG3		4/8/1993	DATACH			U				U				U							U

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Table C-31. Semi-Volatile Organic Analysis Results for 299-W-18-174 (216-Z-1A) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dodecane (112-40-3)				Naphthalene (91-20-3)				Pentachlorophenol (87-86-5)				Phenol (108-95-2)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	53	53	B01PF1		3/19/1993			U				U					U			U	
299-W18-174	56	56	B01PH5		3/22/1993			U				U					U			U	
299-W18-174	57.5	57.5	B01PK9		3/24/1993			U				U					U			U	
299-W18-174	61	61	B01PL1		3/24/1993			U				U					U			U	
299-W18-174	66	66	B01PL3		3/25/1993			U				U					U			U	
299-W18-174	71.5	71.5	B01PF3		3/25/1993			U				U					U			U	
299-W18-174	74.5	74.5	B01PH7		3/25/1993			U				U					U			U	
299-W18-174	76	76	B01PL5		3/26/1993			U				U					U			U	
299-W18-174	80.6	80.6	B01PL7		3/29/1993			U				U					U			U	
299-W18-174	86.6	86.6	B01PL9		3/29/1993			U				U					U			U	
299-W18-174	90.4	90.4	B01PF5		3/29/1993			U				U					U			U	
299-W18-174	93.5	93.5	B01PH9		3/30/1993			U				U					U			U	
299-W18-174	96	96	B01PM1		3/30/1993			U				U					U			U	
299-W18-174	101.1	101.1	B01PF7		4/1/1993			U				U					U			U	
299-W18-174	105	105	B01PM3		4/2/1993			U				U					U			U	
299-W18-174	111.5	111.5	B01PM5		4/2/1993			U				U					U			U	
299-W18-174	114.2	114.2	B01PJ1		4/5/1993			U				U					U			U	
299-W18-174	116.1	116.1	B01PM7		4/5/1993			U				U					U			U	
299-W18-174	118.5	118.5	B01PJ3		4/5/1993			U				U					U			U	
299-W18-174	122.2	122.2	B01PF9		4/6/1993			U				U					U			U	
299-W18-174	124.9	124.9	B01PJ5		4/6/1993			U				U					U			U	
299-W18-174	124.9	125.4	B01PN6		4/6/1993			U				U					U			U	
299-W18-174	127.1	127.1	B01PG1		4/7/1993			U				U					U			U	
299-W18-174	128.9	128.9	B01PJ7		4/7/1993			U				U					U			U	
299-W18-174	131	131	B01PG3		4/8/1993			U				U					U			U	

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Table C-31. Semi-Volatile Organic Analysis Results for 299-W-18-174 (216-Z-1A) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)			
						8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	53	53	B01PF1		3/19/1993			U				U	
299-W18-174	56	56	B01PH5		3/22/1993			U				U	
299-W18-174	57.5	57.5	B01PK9		3/24/1993			U				U	
299-W18-174	61	61	B01PL1		3/24/1993			U				U	
299-W18-174	66	66	B01PL3		3/25/1993			U				U	
299-W18-174	71.5	71.5	B01PF3		3/25/1993			U				U	
299-W18-174	74.5	74.5	B01PH7		3/25/1993			U				U	
299-W18-174	76	76	B01PL5		3/26/1993			U				U	
299-W18-174	80.6	80.6	B01PL7		3/29/1993			U				U	
299-W18-174	86.6	86.6	B01PL9		3/29/1993			U				U	
299-W18-174	90.4	90.4	B01PF5		3/29/1993			U				U	
299-W18-174	93.5	93.5	B01PH9		3/30/1993			U				U	
299-W18-174	96	96	B01PM1		3/30/1993			U				U	
299-W18-174	101.1	101.1	B01PF7		4/1/1993			U				U	
299-W18-174	105	105	B01PM3		4/2/1993			U				U	
299-W18-174	111.5	111.5	B01PM5		4/2/1993			U				U	
299-W18-174	114.2	114.2	B01PJ1		4/5/1993			U				U	
299-W18-174	116.1	116.1	B01PM7		4/5/1993			U				U	
299-W18-174	118.5	118.5	B01PJ3		4/5/1993			U				U	
299-W18-174	122.2	122.2	B01PF9		4/6/1993			U				U	
299-W18-174	124.9	124.9	B01PJ5		4/6/1993			U				U	
299-W18-174	124.9	125.4	B01PN6		4/6/1993			U				U	
299-W18-174	127.1	127.1	B01PG1		4/7/1993			U				U	
299-W18-174	128.9	128.9	B01PJ7		4/7/1993			U				U	
299-W18-174	131	131	B01PG3		4/8/1993			U				U	

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Table C-32. Volatile Organic Analysis Results for 299-W-18-174 (216-Z-1A) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	118.5	118.5	B01PJ3		4/5/1993	PNL1			U			U			U					U		
299-W18-174	122.1	122.1	B01PF8		4/6/1993	PNL1			U			U			U					U		
299-W18-174	122.1	122.1	B01PN4		4/6/1993	PNL1			U			U			U					U		
299-W18-174	122.2	122.2	B01PF9		4/6/1993	PNL1			U			U			U					U		
299-W18-174	122.2	122.2	B01PN5		4/6/1993	PNL1			U			U			U					U		
299-W18-174	124.9	124.9	B01PJ4		4/6/1993	PNL1			U			U			U					U		
299-W18-174	124.9	124.9	B01PJ5		4/6/1993	PNL1			U			U			U					U		
299-W18-174	124.9	124.9	B01PN2		4/6/1993	PNL1			U			U			U					U		
299-W18-174	124.9	124.9	B01PN3		4/6/1993	PNL1			U			U			U					U		
299-W18-174	126.8	126.8	B01PG0		4/7/1993	PNL1			U			U			U					U		
299-W18-174	127.1	127.1	B01PG1		4/7/1993	PNL1			U			U			U					U		
299-W18-174	128.9	128.9	B01PJ6		4/7/1993	PNL1			U			U			U					U		
299-W18-174	128.9	128.9	B01PJ7		4/7/1993	PNL1			U			U			U					U		
299-W18-174	130.4	130.4	B01PG2		4/8/1993	PNL1			U			U			U					U		
299-W18-174	131	131	B01PG3		4/8/1993	PNL1			U			U			U					U		

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Table C-32. Volatile Organic Analysis Results for 299-W-18-174 (216-Z-1A) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2- Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	118.5	118.5	B01PJ3		4/5/1993	68	µg/kg					U			U			U			
299-W18-174	122.1	122.1	B01PF8		4/6/1993	20	µg/kg					U			U			U			
299-W18-174	122.1	122.1	B01PN4		4/6/1993	26	µg/kg					U			U			U			
299-W18-174	122.2	122.2	B01PF9		4/6/1993	427	µg/kg			40	µg/kg				U			U			
299-W18-174	122.2	122.2	B01PN5		4/6/1993	357	µg/kg			85	µg/kg				U			U			
299-W18-174	124.9	124.9	B01PJ4		4/6/1993	789	µg/kg			12	µg/kg	J			U			U			
299-W18-174	124.9	124.9	B01PJ5		4/6/1993	1247	µg/kg			19	µg/kg	J			U			U			
299-W18-174	124.9	124.9	B01PN2		4/6/1993	796	µg/kg					U			U			U			
299-W18-174	124.9	124.9	B01PN3		4/6/1993	890	µg/kg					U			U			U			
299-W18-174	126.8	126.8	B01PG0		4/7/1993	749	µg/kg			38	µg/kg				U			U			
299-W18-174	127.1	127.1	B01PG1		4/7/1993	6561	µg/kg	D		120	µg/kg				U			U			
299-W18-174	128.9	128.9	B01PJ6		4/7/1993	3088	µg/kg	D		63	µg/kg				U			U			
299-W18-174	128.9	128.9	B01PJ7		4/7/1993	4124	µg/kg	D		95	µg/kg				U			U			
299-W18-174	130.4	130.4	B01PG2		4/8/1993	374	µg/kg			50	µg/kg				U			U			
299-W18-174	131	131	B01PG3		4/8/1993	317	µg/kg			135	µg/kg				U			U			

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Table C-32. Volatile Organic Analysis Results for 299-W-18-174 (216-Z-1A) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	53	53	B01PF0		3/22/1993			U				U					U				
299-W18-174	53	53	B01PF1		3/19/1993			U				U						U			
299-W18-174	56	56	B01PH4		3/22/1993			U				U						U			
299-W18-174	56	56	B01PH5		3/22/1993			U				U						U			
299-W18-174	57.5	57.5	B01PK8		3/24/1993			U				U						U			
299-W18-174	57.5	57.5	B01PK9		3/24/1993			U				U				5	µg/kg				
299-W18-174	61	61	B01PL0		3/24/1993			U				U				4	µg/kg	J			
299-W18-174	61	61	B01PL1		3/24/1993			U				U				7	µg/kg				
299-W18-174	65.8	65.8	B01PL2		3/25/1993			U				U						U			
299-W18-174	66	66	B01PL3		3/25/1993			U				U						U			
299-W18-174	71.3	71.3	B01PF2		3/25/1993			U				U						U			
299-W18-174	71.5	71.5	B01PF3		3/25/1993			U				U				4	µg/kg	J			
299-W18-174	74.5	74.5	B01PH6		3/25/1993			U				U						U			
299-W18-174	74.5	74.5	B01PH7		3/25/1993			U				U						U			
299-W18-174	75.8	75.8	B01PL4		3/26/1993			U				U				3	µg/kg	J			
299-W18-174	76	76	B01PL5		3/26/1993			U				U				3	µg/kg	J			
299-W18-174	80.5	80.5	B01PL6		3/29/1993			U				U						U			
299-W18-174	80.6	80.6	B01PL7		3/29/1993			U				U						U			
299-W18-174	86.1	86.1	B01PL8		3/29/1993			U				U						U			
299-W18-174	86.6	86.6	B01PL9		3/29/1993			U				U						U			
299-W18-174	90.4	90.4	B01PF4		3/29/1993			U				U						U			
299-W18-174	90.4	90.4	B01PF5		3/29/1993			U				U						U			
299-W18-174	93.5	93.5	B01PH8		3/30/1993			U				U						U			
299-W18-174	93.5	93.5	B01PH9		3/30/1993			U				U						UJ			
299-W18-174	96	96	B01PM0		3/30/1993			U				U						UJ			
299-W18-174	96	96	B01PM1		3/30/1993			U				U						UJ			
299-W18-174	101.1	101.1	B01PF6		4/1/1993			U				U						U			
299-W18-174	101.1	101.1	B01PF7		4/1/1993			U				U						U			
299-W18-174	105	105	B01PM2		4/2/1993			U				U						U			
299-W18-174	105	105	B01PM3		4/2/1993			U				U						U			
299-W18-174	111.5	111.5	B01PM4		4/2/1993			U				U						U			
299-W18-174	111.5	111.5	B01PM5		4/2/1993			U				U						U			
299-W18-174	114.2	114.2	B01PJ0		4/5/1993			U				U						U			
299-W18-174	114.2	114.2	B01PJ1		4/5/1993			U				U						U			
299-W18-174	115.8	115.8	B01PM6		4/5/1993			U				U						U			
299-W18-174	116.1	116.1	B01PM7		4/5/1993			U				U						U			
299-W18-174	118.5	118.5	B01PJ2		4/5/1993			U				U						U			

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Table C-32. Volatile Organic Analysis Results for 299-W-18-174 (216-Z-1A) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	53	53	B01PF0		3/22/1993			U			U			U			
299-W18-174	53	53	B01PF1		3/19/1993			U			U			U			
299-W18-174	56	56	B01PH4		3/22/1993			U			U			U			
299-W18-174	56	56	B01PH5		3/22/1993			U			U			U			
299-W18-174	57.5	57.5	B01PK8		3/24/1993			U			U			U			
299-W18-174	57.5	57.5	B01PK9		3/24/1993			U			U			U			
299-W18-174	61	61	B01PL0		3/24/1993			U			U			U			
299-W18-174	61	61	B01PL1		3/24/1993			U			U			U			
299-W18-174	65.8	65.8	B01PL2		3/25/1993			U			U			U			
299-W18-174	66	66	B01PL3		3/25/1993			U			U			U			
299-W18-174	71.3	71.3	B01PF2		3/25/1993	6	µg/kg				U			U			
299-W18-174	71.5	71.5	B01PF3		3/25/1993	40	µg/kg				U			U			
299-W18-174	74.5	74.5	B01PH6		3/25/1993			U			U			U			
299-W18-174	74.5	74.5	B01PH7		3/25/1993			U			U			U			
299-W18-174	75.8	75.8	B01PL4		3/26/1993			U			U			U			
299-W18-174	76	76	B01PL5		3/26/1993			U			U			U			
299-W18-174	80.5	80.5	B01PL6		3/29/1993			U			U			U			
299-W18-174	80.6	80.6	B01PL7		3/29/1993			U			U			U			
299-W18-174	86.1	86.1	B01PL8		3/29/1993			U			U			U			
299-W18-174	86.6	86.6	B01PL9		3/29/1993			U			U			U			
299-W18-174	90.4	90.4	B01PF4		3/29/1993			U			U			U			
299-W18-174	90.4	90.4	B01PF5		3/29/1993			U			U			U			
299-W18-174	93.5	93.5	B01PH8		3/30/1993						U			U			
299-W18-174	93.5	93.5	B01PH9		3/30/1993			U			U			U			
299-W18-174	96	96	B01PM0		3/30/1993						U			U			
299-W18-174	96	96	B01PM1		3/30/1993						U			U			
299-W18-174	101.1	101.1	B01PF6		4/1/1993			U			U			U			
299-W18-174	101.1	101.1	B01PF7		4/1/1993			U			U			U			
299-W18-174	105	105	B01PM2		4/2/1993			U			U			U			
299-W18-174	105	105	B01PM3		4/2/1993			U			U			U			
299-W18-174	111.5	111.5	B01PM4		4/2/1993			U			U			U			
299-W18-174	111.5	111.5	B01PM5		4/2/1993			U			U			U			
299-W18-174	114.2	114.2	B01PJ0		4/5/1993			U			U			U			
299-W18-174	114.2	114.2	B01PJ1		4/5/1993			U			U			U			
299-W18-174	115.8	115.8	B01PM6		4/5/1993			U			U			U			
299-W18-174	116.1	116.1	B01PM7		4/5/1993			U			U			U			
299-W18-174	118.5	118.5	B01PJ2		4/5/1993			U			U			U			

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Table C-32. Volatile Organic Analysis Results for 299-W-18-174 (216-Z-1A) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	118.5	118.5	B01PJ3		4/5/1993			U				U					
299-W18-174	122.1	122.1	B01PF8		4/6/1993			U				U					
299-W18-174	122.1	122.1	B01PN4		4/6/1993			U				U					
299-W18-174	122.2	122.2	B01PF9		4/6/1993			U				U					
299-W18-174	122.2	122.2	B01PN5		4/6/1993			U				U					
299-W18-174	124.9	124.9	B01PJ4		4/6/1993			U				U					
299-W18-174	124.9	124.9	B01PJ5		4/6/1993			U				U					
299-W18-174	124.9	124.9	B01PN2		4/6/1993			U				U					
299-W18-174	124.9	124.9	B01PN3		4/6/1993			U				U					
299-W18-174	126.8	126.8	B01PG0		4/7/1993			U				U		31	µg/kg		
299-W18-174	127.1	127.1	B01PG1		4/7/1993			U				U		41	µg/kg		
299-W18-174	128.9	128.9	B01PJ6		4/7/1993			U				U		42	µg/kg		
299-W18-174	128.9	128.9	B01PJ7		4/7/1993			U				U		68	µg/kg		
299-W18-174	130.4	130.4	B01PG2		4/8/1993			U				U		44	µg/kg		
299-W18-174	131	131	B01PG3		4/8/1993			U				U		61	µg/kg		

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Table C-33. Wet Chemistry Analysis Results for 299-W-18-174 (216-Z-1A) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Nitrate (14797-55-8)				Nitrite (14797-65-0)				Bromide (24959-67-9)				Chloride (16887-00-6)			
							D4327				D4327				D4327				D4327			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	56	56	B01PH5		3/22/1993	DATACH	250000	µg/kg			600	µg/kg					U		6300	µg/kg		
299-W18-174	74.5	74.5	B01PH7		3/25/1993	DATACH	4500	µg/kg					U				U		1000	µg/kg		
299-W18-174	93.5	93.5	B01PH9		3/30/1993	DATACH	7200	µg/kg			500	µg/kg					U		1500	µg/kg		
299-W18-174	114.2	114.2	B01PJ1		4/5/1993	DATACH	3300	µg/kg					U				U		700	µg/kg		
299-W18-174	118.5	118.5	B01PJ3		4/5/1993	DATACH	13000	µg/kg					U				U		600	µg/kg		
299-W18-174	124.9	124.9	B01PJ5		4/6/1993	DATACH	8800	µg/kg					U				U		3400	µg/kg		
299-W18-174	124.9	125.4	B01PN6		4/6/1993	DATACH	8100	µg/kg					U				U		3100	µg/kg		
299-W18-174	128.9	128.9	B01PJ7		4/7/1993	DATACH	7300	µg/kg					U				U		2300	µg/kg		

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Table C-33. Wet Chemistry Analysis Results for 299-W-18-174 (216-Z-1A) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						9010				D4327				D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	56	56	B01PH5		3/22/1993			U		15000	$\mu\text{g}/\text{kg}$			1000	$\mu\text{g}/\text{kg}$			10000	$\mu\text{g}/\text{kg}$		
299-W18-174	74.5	74.5	B01PH7		3/25/1993			U		3300	$\mu\text{g}/\text{kg}$					U		3000	$\mu\text{g}/\text{kg}$		
299-W18-174	93.5	93.5	B01PH9		3/30/1993			U		7300	$\mu\text{g}/\text{kg}$					U		6000	$\mu\text{g}/\text{kg}$		
299-W18-174	114.2	114.2	B01PJ1		4/5/1993			U		7900	$\mu\text{g}/\text{kg}$					U		3000	$\mu\text{g}/\text{kg}$		
299-W18-174	118.5	118.5	B01PJ3		4/5/1993			U		7500	$\mu\text{g}/\text{kg}$					U		2000	$\mu\text{g}/\text{kg}$		
299-W18-174	124.9	124.9	B01PJ5		4/6/1993			U		16000	$\mu\text{g}/\text{kg}$					U		8000	$\mu\text{g}/\text{kg}$		
299-W18-174	124.9	125.4	B01PN6		4/6/1993			U		15000	$\mu\text{g}/\text{kg}$					U		7000	$\mu\text{g}/\text{kg}$		
299-W18-174	128.9	128.9	B01PJ7		4/7/1993			U		16000	$\mu\text{g}/\text{kg}$					U		8000	$\mu\text{g}/\text{kg}$		

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Table C-34. Metal Analysis Results for 299-W-18-246 (216-Z-1A) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)				Copper (7440-50-8)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS0		3/27/1992	9700000	μg/kg			13000	μg/kg			8000	μg/kg			17000	μg/kg		
299-W18-246	106.5	107	B01WT5		4/13/1992	9000000	μg/kg			14000	μg/kg			6000	μg/kg			22000	μg/kg		
299-W18-246	141.8	142.3	B01WQ0		4/16/1992	20000000	μg/kg			22000	μg/kg			6000	μg/kg			34000	μg/kg		
299-W18-246	146	146.5	B066R2		4/20/1992	190000000	μg/kg			6000	μg/kg			4000	μg/kg			22000	μg/kg		
299-W18-246	194.4	194.9	B066S8		4/30/1992	23000000	μg/kg			14000	μg/kg			5000	μg/kg			36000	μg/kg		
299-W18-246	217.1	217.1	B01WP4		5/7/1992	550000	μg/L			2900	μg/L			1300	μg/L			2800	μg/L		
299-W18-246	219	219	B01WP5		5/7/1992	55000	μg/L			30	μg/L						U	30	μg/L		
299-W18-246	223.8	223.8	B01WP6		5/11/1992	53000	μg/L						U				U				U
299-W18-246	229	229	B01WP7		5/11/1992	79000	μg/L			300	μg/L			100	μg/L			290	μg/L		

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Table C-34. Metal Analysis Results for 299-W-18-246 (216-Z-1A) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)				Silver (7440-22-4)			
						7470				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS0		3/27/1992			U		11000	$\mu\text{g}/\text{kg}$			1700000	$\mu\text{g}/\text{kg}$					U	
299-W18-246	106.5	107	B01WT5		4/13/1992			U		12000	$\mu\text{g}/\text{kg}$			1100000	$\mu\text{g}/\text{kg}$					U	
299-W18-246	141.8	142.3	B01WQ0		4/16/1992			U		17000	$\mu\text{g}/\text{kg}$			2600000	$\mu\text{g}/\text{kg}$					U	
299-W18-246	146	146.5	B066R2		4/20/1992			U		6000	$\mu\text{g}/\text{kg}$			840000	$\mu\text{g}/\text{kg}$					U	
299-W18-246	194.4	194.9	B066S8		4/30/1992			U		16000	$\mu\text{g}/\text{kg}$			620000	$\mu\text{g}/\text{kg}$					U	
299-W18-246	217.1	217.1	B01WP4		5/7/1992					3000	$\mu\text{g}/\text{L}$			160000	$\mu\text{g}/\text{L}$					U	
299-W18-246	219	219	B01WP5		5/7/1992					30	$\mu\text{g}/\text{L}$			5500	$\mu\text{g}/\text{L}$					U	
299-W18-246	223.8	223.8	B01WP6		5/11/1992								U	6400	$\mu\text{g}/\text{L}$					U	
299-W18-246	229	229	B01WP7		5/11/1992					260	$\mu\text{g}/\text{L}$			13000	$\mu\text{g}/\text{L}$					U	

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Table C-34. Metal Analysis Results for 299-W-18-246 (216-Z-1A) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sodium (7440-23-5)				Tin (7440-31-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)						
						6010				6010				6010				6010						
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ			
299-W18-246	56.3	56.8	B01WS0		3/27/1992	410000	µg/kg																	
299-W18-246	106.5	107	B01WT5		4/13/1992	310000	µg/kg					U		57000	µg/kg					45000	µg/kg			
299-W18-246	141.8	142.3	B01WQ0		4/16/1992	400000	µg/kg					U		31000	µg/kg					40000	µg/kg			
299-W18-246	146	146.5	B066R2		4/20/1992	440000	µg/kg					U		23000	µg/kg					12000	µg/kg			
299-W18-246	194.4	194.9	B066S8		4/30/1992	290000	µg/kg					U		16000	µg/kg					22000	µg/kg			
299-W18-246	217.1	217.1	B01WP4		5/7/1992	100000	µg/L					U		3700	µg/L					6400	µg/L			
299-W18-246	219	219	B01WP5		5/7/1992	18000	µg/L					U						U		20	µg/L			
299-W18-246	223.8	223.8	B01WP6		5/11/1992	20000	µg/L					U						U		30	µg/L			
299-W18-246	229	229	B01WP7		5/11/1992	31000	µg/L					U		220	µg/L					380	µg/L			

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Table C-35. Radiochemical Analysis Results for 299-W-18-246 (216-Z-1A) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Antimony-125 (14234-35-6)					Cesium-137 (10045-97-3)					Cobalt-60 (10198-40-0)				
							GEA					GEA					GEA				
							Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W18-246	217.1	217.1	B01WP4		5/7/1992	ITASRL	4.23000001 907349	pCi/L				1.80999994 277954	pCi/L				3.56999993 32428	pCi/L	U		
299-W18-246	219	219	B01WP5		5/7/1992	ITASRL	0.55500000 7152557	pCi/L	U			1.50999999 046326	pCi/L				1.62999999 523163	pCi/L	U		
299-W18-246	223.8	223.8	B01WP6		5/11/1992	ITASRL	7.63999986 64856	pCi/L				0.09149999 9165535	pCi/L				2.79999995 231628	pCi/L			
299-W18-246	229	229	B01WP7		5/11/1992	ITASRL	8.92000007 629395	pCi/L				3.92000007 629395	pCi/L				4.44000005 722046	pCi/L			

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Table C-35. Radiochemical Analysis Results for 299-W-18-246 (216-Z-1A) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Gross alpha (12587-46-1)					Gross beta (12587-47-2)					Ruthenium-106 (13967-48-1)				
						9310					9310					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W18-246	217.1	217.1	B01WP4		5/7/1992	19.6000003 814697	pCi/L				27.6000003 814697	pCi/L				8.73999977 111816	pCi/L			
299-W18-246	219	219	B01WP5		5/7/1992	5.03000020 980835	pCi/L				5.51000022 888184	pCi/L				9.68000030 517578	pCi/L			
299-W18-246	223.8	223.8	B01WP6		5/11/1992	0.11200000 3457069	pCi/L				5.34000015 258789	pCi/L				55.2999992 370605	pCi/L			
299-W18-246	229	229	B01WP7		5/11/1992	8.51000022 888184	pCi/L				20.5	pCi/L				12	pCi/L			

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Table C-36. Semi-Volatile Organic Analysis Results for 299-W-18-246 (216-Z-1A) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	2-Methylphenol (cresol, o-) (95-48-7)				3-Methylphenol (cresol, m-) (108-39-4)				4-Methylphenol (cresol, p-) (106-44-5)				Decane (124-18-5)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS0		3/27/1992	DATACH			U			U			U			U				
299-W18-246	106.5	107	B01WT5		4/13/1992	DATACH			U			U			U			U				
299-W18-246	141.8	142.3	B01WQ0		4/16/1992	DATACH			U			U			U			U				
299-W18-246	146	146.5	B066R2		4/20/1992	DATACH			U			U			U			U				
299-W18-246	194.4	194.9	B066S8		4/30/1992	DATACH			U			U			U			U				
299-W18-246	217.1	217.1	B01WP4		5/7/1992	DATACH			U			U			U			U				
299-W18-246	219	219	B01WP5		5/7/1992	DATACH			U			U			U			U				
299-W18-246	223.8	223.8	B01WP6		5/11/1992	DATACH			U			U			U			U				
299-W18-246	229	229	B01WP7		5/11/1992	DATACH			U			U			U			U				

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Table C-36. Semi-Volatile Organic Analysis Results for 299-W-18-246 (216-Z-1A) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dodecane (112-40-3)				Naphthalene (91-20-3)				Pentachlorophenol (87-86-5)				Phenol (108-95-2)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS0		3/27/1992			U				U									
299-W18-246	106.5	107	B01WT5		4/13/1992			U				U									U
299-W18-246	141.8	142.3	B01WQ0		4/16/1992			U				U									U
299-W18-246	146	146.5	B066R2		4/20/1992			U				U									U
299-W18-246	194.4	194.9	B066S8		4/30/1992			U				U									U
299-W18-246	217.1	217.1	B01WP4		5/7/1992			U				U									U
299-W18-246	219	219	B01WP5		5/7/1992			U				U									U
299-W18-246	223.8	223.8	B01WP6		5/11/1992			U				U									U
299-W18-246	229	229	B01WP7		5/11/1992			U				U									U

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Table C-36. Semi-Volatile Organic Analysis Results for 299-W-18-246 (216-Z-1A) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)			
						8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS0		3/27/1992			U				U	
299-W18-246	106.5	107	B01WT5		4/13/1992			U				U	
299-W18-246	141.8	142.3	B01WQ0		4/16/1992			U				U	
299-W18-246	146	146.5	B066R2		4/20/1992			U				U	
299-W18-246	194.4	194.9	B066S8		4/30/1992			U				U	
299-W18-246	217.1	217.1	B01WP4		5/7/1992			U				U	
299-W18-246	219	219	B01WP5		5/7/1992			U				U	
299-W18-246	223.8	223.8	B01WP6		5/11/1992			U				U	
299-W18-246	229	229	B01WP7		5/11/1992			U				U	

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Table C-37. Volatile Organic Analysis Results for 299-W-18-246 (216-Z-1A) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2- Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS2		3/27/1992	133	µg/kg			3	µg/kg	J			U			U			
299-W18-246	106.5	107	B01WT5		4/13/1992	10	µg/kg					U			U			U			
299-W18-246	141.8	142.3	B01WQ0		4/16/1992	261	µg/kg					U			U			U			
299-W18-246	146	146.5	B066R2		4/20/1992	772	µg/kg					U			U			U			
299-W18-246	194.4	194.9	B066S8		4/30/1992			U				U			U			U			
299-W18-246	217.1	217.1	B01WP4		5/7/1992	293	µg/L			3600	µg/L				U		0.3	µg/L	J		
299-W18-246	219	219	B01WP5		5/7/1992	1009	µg/L			361	µg/L				U				U		
299-W18-246	223.8	223.8	B01WP6		5/11/1992	919	µg/L			105	µg/L				U				U		
299-W18-246	229	229	B01WP7		5/11/1992	30	µg/L			344	µg/L				U				U		

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Table C-37. Volatile Organic Analysis Results for 299-W-18-246 (216-Z-1A) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)				Xylenes (total) (1330-20-7)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS2		3/27/1992			U			U		1	µg/kg							
299-W18-246	106.5	107	B01WT5		4/13/1992			U			U			U							
299-W18-246	141.8	142.3	B01WQ0		4/16/1992	126	µg/kg				U			U							
299-W18-246	146	146.5	B066R2		4/20/1992			U			U			U							
299-W18-246	194.4	194.9	B066S8		4/30/1992			U			U			U							
299-W18-246	217.1	217.1	B01WP4		5/7/1992	0.7	µg/L				U		2.1	µg/L			3.1	µg/L			
299-W18-246	219	219	B01WP5		5/7/1992			U			U		2.1	µg/L			1	µg/L			
299-W18-246	223.8	223.8	B01WP6		5/11/1992			U			U		1.8	µg/L						U	
299-W18-246	229	229	B01WP7		5/11/1992	0.2	µg/L	J			U		1.6	µg/L						U	

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Table C-38. Wet Chemistry Analysis Results for 299-W-18-246 (216-Z-1A) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						9010				D4327				D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS0		3/27/1992			U				U					45000	µg/kg			
299-W18-246	106.5	107	B01WT5		4/13/1992			U		500	µg/kg					U	12000	µg/kg			
299-W18-246	141.8	142.3	B01WQ0		4/16/1992			U		400	µg/kg					U	6000	µg/kg			
299-W18-246	146	146.5	B066R2		4/20/1992			U		2800	µg/kg					U	19000	µg/kg			
299-W18-246	194.4	194.9	B066S8		4/30/1992			U		900	µg/kg					U	3100	µg/kg			
299-W18-246	217.1	217.1	B01WP4		5/7/1992					900	µg/L					U	23000	µg/L			
299-W18-246	219	219	B01WP5		5/7/1992					500	µg/L					U	20000	µg/L			
299-W18-246	223.8	223.8	B01WP6		5/11/1992					700	µg/L					U	20000	µg/L			
299-W18-246	229	229	B01WP7		5/11/1992					1200	µg/L					U	22000	µg/L			

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Table C-39. Metal Analysis Results for 299-W-18-247 (216-Z-18) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)				Copper (7440-50-8)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0		3/4/1992	11000000	μg/kg			11000	μg/kg			14000	μg/kg			22000	μg/kg		
299-W18-247	110.5	111	B01WF9		3/18/1992	6800000	μg/kg			14000	μg/kg			5000	μg/kg			14000	μg/kg		
299-W18-247	135.4	135.9	B01WJ5		3/19/1992	13000000	μg/kg			24000	μg/kg			9000	μg/kg			23000	μg/kg		
299-W18-247	149.5	150	B01WK5		3/20/1992	80000000	μg/kg			17000	μg/kg			8000	μg/kg			41000	μg/kg		
299-W18-247	154.7	155.2	B01WL2		3/25/1992	48000000	μg/kg			28000	μg/kg			8000	μg/kg			25000	μg/kg		
299-W18-247	211.7	211.7	B01WV7		4/9/1992	86000	μg/L						U				U				U
299-W18-247	216.7	216.7	B01WW0		4/1/1992	30000	μg/L						U				U				U
299-W18-247	221.7	221.7	B01WW5		4/2/1992	110000	μg/L			52	μg/L			240	μg/L			160	μg/L		
299-W18-247	226.7	226.7	B01WW8		4/2/1992	160000	μg/L			170	μg/L			340	μg/L			270	μg/L		

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Table C-39. Metal Analysis Results for 299-W-18-247 (216-Z-18) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)				Manganese (7439-96-5)			
						6010				7421				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0		3/4/1992	33000000	µg/kg			5100	µg/kg			5900000	µg/kg			520000	µg/kg		
299-W18-247	110.5	111	B01WF9		3/18/1992	16000000	µg/kg			3300	µg/kg			4300000	µg/kg			240000	µg/kg		
299-W18-247	135.4	135.9	B01WJ5		3/19/1992	22000000	µg/kg			14000	µg/kg			7900000	µg/kg			440000	µg/kg		
299-W18-247	149.5	150	B01WK5		3/20/1992	22000000	µg/kg			5800	µg/kg			7100000	µg/kg			230000	µg/kg		
299-W18-247	154.7	155.2	B01WL2		3/25/1992	21000000	µg/kg			3700	µg/kg			6600000	µg/kg			360000	µg/kg		
299-W18-247	211.7	211.7	B01WV7		4/9/1992				U					30000	µg/L						U
299-W18-247	216.7	216.7	B01WW0		4/1/1992	11000	µg/L							9800	µg/L			870	µg/L		
299-W18-247	221.7	221.7	B01WW5		4/2/1992	38000	µg/L							28000	µg/L			12000	µg/L		
299-W18-247	226.7	226.7	B01WW8		4/2/1992	180000	µg/L							61000	µg/L			15000	µg/L		

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Table C-39. Metal Analysis Results for 299-W-18-247 (216-Z-18) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)				Silver (7440-22-4)			
						7470				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0		3/4/1992			U		11000	$\mu\text{g}/\text{kg}$			1800000	$\mu\text{g}/\text{kg}$					U	
299-W18-247	110.5	111	B01WF9		3/18/1992			U		10000	$\mu\text{g}/\text{kg}$			1100000	$\mu\text{g}/\text{kg}$					U	
299-W18-247	135.4	135.9	B01WJ5		3/19/1992			U		18000	$\mu\text{g}/\text{kg}$			5000000	$\mu\text{g}/\text{kg}$					U	
299-W18-247	149.5	150	B01WK5		3/20/1992			U		12000	$\mu\text{g}/\text{kg}$			3100000	$\mu\text{g}/\text{kg}$					U	
299-W18-247	154.7	155.2	B01WL2		3/25/1992			U		18000	$\mu\text{g}/\text{kg}$			2200000	$\mu\text{g}/\text{kg}$					U	
299-W18-247	211.7	211.7	B01WV7		4/9/1992								U	6500	$\mu\text{g}/\text{L}$					U	
299-W18-247	216.7	216.7	B01WW0		4/1/1992								U	5900	$\mu\text{g}/\text{L}$					U	
299-W18-247	221.7	221.7	B01WW5		4/2/1992					250	$\mu\text{g}/\text{L}$			13000	$\mu\text{g}/\text{L}$					U	
299-W18-247	226.7	226.7	B01WW8		4/2/1992					370	$\mu\text{g}/\text{L}$			20000	$\mu\text{g}/\text{L}$					U	

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Table C-39. Metal Analysis Results for 299-W-18-247 (216-Z-18) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sodium (7440-23-5)				Tin (7440-31-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)				
						6010				6010				6010				6010				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
299-W18-247	55.6	56.1	B01WD0		3/4/1992	690000	µg/kg					U			86000	µg/kg			62000	µg/kg		
299-W18-247	110.5	111	B01WF9		3/18/1992	280000	µg/kg					U			36000	µg/kg			35000	µg/kg		
299-W18-247	135.4	135.9	B01WJ5		3/19/1992	350000	µg/kg					U			41000	µg/kg			63000	µg/kg		
299-W18-247	149.5	150	B01WK5		3/20/1992	1100000	µg/kg					U			69000	µg/kg			46000	µg/kg		
299-W18-247	154.7	155.2	B01WL2		3/25/1992	590000	µg/kg					U			49000	µg/kg			43000	µg/kg		
299-W18-247	211.7	211.7	B01WV7		4/9/1992	31000	µg/L					U					U					U
299-W18-247	216.7	216.7	B01WW0		4/1/1992	23000	µg/L					U			30	µg/L			30	µg/L		
299-W18-247	221.7	221.7	B01WW5		4/2/1992	31000	µg/L					U			66	µg/L			580	µg/L		
299-W18-247	226.7	226.7	B01WW8		4/2/1992	27000	µg/L					U			320	µg/L			900	µg/L		

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Table C-40. Radiochemical Analysis Results for 299-W-18-247 (216-Z-18) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Antimony-125 (14234-35-6)					Cesium-137 (10045-97-3)					Cobalt-60 (10198-40-0)				
							GEA					GEA					GEA				
							Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W18-247	211.7	211.7	B01WV9		4/1/1992	ITASRL	4.32000017 166138	pCi/L				2.95000004 768372	pCi/L				0.25999999 0463257	pCi/L	U		
299-W18-247	216.7	216.7	B01WW1		4/1/1992	ITASRL	0.75199997 4250793	pCi/L				5.40000009 536743	pCi/L				7.96000003 814697	pCi/L	U		
299-W18-247	221.7	221.7	B01WW3		4/2/1992	ITASRL	8.56000041 96167	pCi/L	U			3.39000010 490417	pCi/L				12.3999996 185303	pCi/L			
299-W18-247	226.7	226.7	B01WW6		4/2/1992	ITASRL	0.36000001 4305115	pCi/L				1.48000001 907349	pCi/L	U			0.29699999 0940094	pCi/L			

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Table C-40. Radiochemical Analysis Results for 299-W-18-247 (216-Z-18) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Gross alpha (12587-46-1)				
						9310				
						Conc'n	Units	Q	VQ	MDA
299-W18-247	211.7	211.7	B01WV9		4/1/1992	9.43999958 03833	pCi/L			
299-W18-247	216.7	216.7	B01WW1		4/1/1992	6.84000015 258789	pCi/L			
299-W18-247	221.7	221.7	B01WW3		4/2/1992	3.28999996 185303	pCi/L			
299-W18-247	226.7	226.7	B01WW6		4/2/1992	10.1000003 814697	pCi/L			

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Table C-40. Radiochemical Analysis Results for 299-W-18-247 (216-Z-18) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Gross beta (12587-47-2)					Ruthenium-106 (13967-48-1)				
						9310					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W18-247	211.7	211.7	B01WV9		4/1/1992	15.3000001 907349	pCi/L				28.1000003 814697	pCi/L	U		
299-W18-247	216.7	216.7	B01WW1		4/1/1992	12.3999996 185303	pCi/L				7.28000020 980835	pCi/L			
299-W18-247	221.7	221.7	B01WW3		4/2/1992	10.1000003 814697	pCi/L				13.1000003 814697	pCi/L			
299-W18-247	226.7	226.7	B01WW6		4/2/1992	13	pCi/L				68.5	pCi/L			

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Table C-41. Semi-Volatile Organic Analysis Results for 299-W-18-247 (216-Z-18) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dodecane (112-40-3)				Naphthalene (91-20-3)				Pentachlorophenol (87-86-5)				Phenol (108-95-2)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0		3/4/1992			U				U					160	µg/kg	J		
299-W18-247	110.5	111	B01WF9		3/18/1992			U				U							U		
299-W18-247	135.4	135.9	B01WJ5		3/19/1992			U				U					340	µg/kg			
299-W18-247	149.5	150	B01WK5		3/20/1992			U				U					520	µg/kg			
299-W18-247	154.7	155.2	B01WL2		3/25/1992			U				U					700	µg/kg			
299-W18-247	211.7	211.7	B01WV7		4/9/1992			U				U							U		
299-W18-247	216.7	216.7	B01WW0		4/1/1992			U				U							U		
299-W18-247	221.7	221.7	B01WW5		4/2/1992			U				U							U		
299-W18-247	226.7	226.7	B01WW8		4/2/1992			U				U							U		

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Table C-41. Semi-Volatile Organic Analysis Results for 299-W-18-247 (216-Z-18) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)			
						8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0		3/4/1992			U				U	
299-W18-247	110.5	111	B01WF9		3/18/1992			U				U	
299-W18-247	135.4	135.9	B01WJ5		3/19/1992			U				U	
299-W18-247	149.5	150	B01WK5		3/20/1992			U				U	
299-W18-247	154.7	155.2	B01WL2		3/25/1992			U				U	
299-W18-247	211.7	211.7	B01WV7		4/9/1992			U				U	
299-W18-247	216.7	216.7	B01WW0		4/1/1992			U				U	
299-W18-247	221.7	221.7	B01WW5		4/2/1992			U				U	
299-W18-247	226.7	226.7	B01WW8		4/2/1992			U				U	

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Table C-42. Volatile Organic Analysis Results for 299-W-18-247 (216-Z-18) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2- Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0		3/4/1992	13	µg/kg					U						61	µg/kg		
299-W18-247	110.5	111	B01WG2		3/18/1992	17	µg/kg					U									U
299-W18-247	134.9	135.4	B01WH6		3/19/1992	717	µg/kg			4	µg/kg	J						1	µg/kg		J
299-W18-247	148	148.5	B01WK1		3/20/1992	47	µg/kg					U									U
299-W18-247	154.2	154.7	B01WL4		3/25/1992	0.3	µg/kg	J				U									U
299-W18-247	211.7	211.7	B01WV8		4/1/1992	95	µg/L			183	µg/L							1	µg/L		
299-W18-247	216.7	216.7	B01WW2		4/1/1992	418	µg/L	D		36	µg/L										U
299-W18-247	221.7	221.7	B01WW4		4/2/1992	32	µg/L			84	µg/L	D						0.4	µg/L		J
299-W18-247	226.7	226.7	B01WW7		4/2/1992	89	µg/L			34	µg/L										U

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Table C-42. Volatile Organic Analysis Results for 299-W-18-247 (216-Z-18) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)				Xylenes (total) (1330-20-7)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0		3/4/1992	3427	µg/kg					U									
299-W18-247	110.5	111	B01WG2		3/18/1992							U									
299-W18-247	134.9	135.4	B01WH6		3/19/1992	333	µg/kg					U									
299-W18-247	148	148.5	B01WK1		3/20/1992							U									
299-W18-247	154.2	154.7	B01WL4		3/25/1992							U									
299-W18-247	211.7	211.7	B01WV8		4/1/1992	1.2	µg/L					U		0.5	µg/L	J		0.8	µg/L		
299-W18-247	216.7	216.7	B01WW2		4/1/1992							U		1.2	µg/L						
299-W18-247	221.7	221.7	B01WW4		4/2/1992	0.4	µg/L	J				U		0.4	µg/L	J					
299-W18-247	226.7	226.7	B01WW7		4/2/1992	0.2	µg/L	J				U		0.4	µg/L	J					

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Table C-43. Wet Chemistry Analysis Results for 299-W-18-247 (216-Z-18) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Nitrate (14797-55-8)				Nitrite (14797-65-0)				Bromide (24959-67-9)				Chloride (16887-00-6)			
							D4327				D4327				D4327				D4327			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0		3/4/1992	DATACH	3400	µg/kg					U					4200	µg/kg			
299-W18-247	110.5	111	B01WF9		3/18/1992	DATACH	600	µg/kg					U					400	µg/kg			
299-W18-247	135.4	135.9	B01WJ5		3/19/1992	DATACH	900	µg/kg					U					1200	µg/kg			
299-W18-247	149.5	150	B01WK5		3/20/1992	DATACH	1700	µg/kg					U					3100	µg/kg			
299-W18-247	154.7	155.2	B01WL2		3/25/1992	DATACH	1300	µg/kg					U					1100	µg/kg			
299-W18-247	211.7	211.7	B01WV7		4/9/1992	DATACH	2000	µg/L			700	µg/L						8200	µg/L			
299-W18-247	216.7	216.7	B01WW0		4/1/1992	DATACH	4000	µg/L					U					4100	µg/L			
299-W18-247	221.7	221.7	B01WW5		4/2/1992	DATACH	4300	µg/L			800	µg/L						8000	µg/L			
299-W18-247	226.7	226.7	B01WW8		4/2/1992	DATACH	4100	µg/L					U					5700	µg/L			

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Table C-43. Wet Chemistry Analysis Results for 299-W-18-247 (216-Z-18) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						9010				D4327				D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0		3/4/1992			U		300	µg/kg				U			5800	µg/kg		
299-W18-247	110.5	111	B01WF9		3/18/1992			U				U			U			2800	µg/kg		
299-W18-247	135.4	135.9	B01WJ5		3/19/1992			U		600	µg/kg				U			4300	µg/kg		
299-W18-247	149.5	150	B01WK5		3/20/1992			U		1100	µg/kg				U			6500	µg/kg		
299-W18-247	154.7	155.2	B01WL2		3/25/1992			U		1600	µg/kg				U			5800	µg/kg		
299-W18-247	211.7	211.7	B01WV7		4/9/1992					1900	µg/L				U			32000	µg/L		
299-W18-247	216.7	216.7	B01WW0		4/1/1992					1100	µg/L				U			22000	µg/L		
299-W18-247	221.7	221.7	B01WW5		4/2/1992					1400	µg/L				U			25000	µg/L		
299-W18-247	226.7	226.7	B01WW8		4/2/1992					700	µg/L				U			17000	µg/L		

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Table C-44. Metal Analysis Results for 299-W-18-248 (216-Z-1A) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)				Copper (7440-50-8)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1		5/4/1992	6600000	μg/kg			9400	μg/kg			8200	μg/kg			24000	μg/kg		
299-W18-248	39.5	40	B06JS9		5/6/1992	7200000	μg/kg			6800	μg/kg			9000	μg/kg			17000	μg/kg		
299-W18-248	59.6	60.1	B06JT6		5/11/1992	9300000	μg/kg			10000	μg/kg			6100	μg/kg			12000	μg/kg		
299-W18-248	81	81.5	B06JV5		5/15/1992	5900000	μg/kg			9000	μg/kg			4100	μg/kg			8600	μg/kg		
299-W18-248	89	89.5	B06JW1		5/19/1992	7100000	μg/kg			8500	μg/kg			8000	μg/kg			16000	μg/kg		
299-W18-248	102	102.5	B06JW9		5/21/1992	9600000	μg/kg			18000	μg/kg			8500	μg/kg			15000	μg/kg		
299-W18-248	121	121.5	B06JX6		5/22/1992	9300000	μg/kg			15000	μg/kg			6500	μg/kg			13000	μg/kg		
299-W18-248	126.5	127	B06JY3		5/22/1992	14000000	μg/kg			17000	μg/kg			6900	μg/kg			13000	μg/kg		
299-W18-248	140	140.5	B06JS2		5/26/1992	230000000	μg/kg			4800	μg/kg			3800	μg/kg			13000	μg/kg		

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Table C-44. Metal Analysis Results for 299-W-18-248 (216-Z-1A) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)				Manganese (7439-96-5)			
						6010				7421				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1		5/4/1992	23000000	µg/kg			2100	µg/kg			4300000	µg/kg			250000	µg/kg		
299-W18-248	39.5	40	B06JS9		5/6/1992	25000000	µg/kg			6200	µg/kg			4200000	µg/kg			270000	µg/kg		
299-W18-248	59.6	60.1	B06JT6		5/11/1992	17000000	µg/kg			4600	µg/kg			4900000	µg/kg			310000	µg/kg		
299-W18-248	81	81.5	B06JV5		5/15/1992	12000000	µg/kg			1600	µg/kg			3600000	µg/kg			200000	µg/kg		
299-W18-248	89	89.5	B06JW1		5/19/1992	20000000	µg/kg			1900	µg/kg			3300000	µg/kg			240000	µg/kg		
299-W18-248	102	102.5	B06JW9		5/21/1992	19000000	µg/kg			6400	µg/kg			6400000	µg/kg			350000	µg/kg		
299-W18-248	121	121.5	B06JX6		5/22/1992	15000000	µg/kg			4700	µg/kg			4300000	µg/kg			230000	µg/kg		
299-W18-248	126.5	127	B06JY3		5/22/1992	17000000	µg/kg			5100	µg/kg			5400000	µg/kg			310000	µg/kg		
299-W18-248	140	140.5	B06JS2		5/26/1992	6800000	µg/kg			1500	µg/kg			8900000	µg/kg			760000	µg/kg		

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Table C-44. Metal Analysis Results for 299-W-18-248 (216-Z-1A) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)				Silver (7440-22-4)			
						7470				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1		5/4/1992			U			U	820000	µg/kg					U			
299-W18-248	39.5	40	B06JS9		5/6/1992			U			U	790000	µg/kg					U			
299-W18-248	59.6	60.1	B06JT6		5/11/1992			U			U	1700000	µg/kg					U			
299-W18-248	81	81.5	B06JV5		5/15/1992			U			U	1000000	µg/kg					U			
299-W18-248	89	89.5	B06JW1		5/19/1992			U			U	740000	µg/kg					U			
299-W18-248	102	102.5	B06JW9		5/21/1992			U	16000	µg/kg		2700000	µg/kg					U			
299-W18-248	121	121.5	B06JX6		5/22/1992			U	15000	µg/kg		1200000	µg/kg					U			
299-W18-248	126.5	127	B06JY3		5/22/1992			U	11000	µg/kg		2300000	µg/kg					U			
299-W18-248	140	140.5	B06JS2		5/26/1992			U	5500	µg/kg		1000000	µg/kg					U			

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Table C-44. Metal Analysis Results for 299-W-18-248 (216-Z-1A) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sodium (7440-23-5)				Tin (7440-31-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1		5/4/1992	540000	μg/kg					U		59000	μg/kg			50000	μg/kg		
299-W18-248	39.5	40	B06JS9		5/6/1992	390000	μg/kg					U		56000	μg/kg			45000	μg/kg		
299-W18-248	59.6	60.1	B06JT6		5/11/1992	240000	μg/kg					U		37000	μg/kg			42000	μg/kg		
299-W18-248	81	81.5	B06JV5		5/15/1992	190000	μg/kg					U				U		29000	μg/kg		
299-W18-248	89	89.5	B06JW1		5/19/1992	630000	μg/kg					U		57000	μg/kg			41000	μg/kg		
299-W18-248	102	102.5	B06JW9		5/21/1992	290000	μg/kg					U		37000	μg/kg			52000	μg/kg		
299-W18-248	121	121.5	B06JX6		5/22/1992	300000	μg/kg					U		33000	μg/kg			34000	μg/kg		
299-W18-248	126.5	127	B06JY3		5/22/1992	460000	μg/kg					U		41000	μg/kg			38000	μg/kg		
299-W18-248	140	140.5	B06JS2		5/26/1992	360000	μg/kg					U		16000	μg/kg			13000	μg/kg		

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Table C-45. Semi-Volatile Organic Analysis Results for 299-W-18-248 (216-Z-1A) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	2-Methylphenol (cresol, o-) (95-48-7)				3-Methylphenol (cresol, m-) (108-39-4)				4-Methylphenol (cresol, p-) (106-44-5)				Decane (124-18-5)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1		5/4/1992	DATACH			U				U					U				
299-W18-248	39.5	40	B06JS9		5/6/1992	DATACH			U				U					U				
299-W18-248	59.6	60.1	B06JT6		5/11/1992	DATACH			U				U					U				
299-W18-248	81	81.5	B06JV5		5/15/1992	DATACH			U				U					U				
299-W18-248	89	89.5	B06JW1		5/19/1992	DATACH			U				U					U				
299-W18-248	102	102.5	B06JW9		5/21/1992	DATACH			U				U					U				
299-W18-248	121	121.5	B06JX6		5/22/1992	DATACH			U				U					U				
299-W18-248	126.5	127	B06JY3		5/22/1992	DATACH			U				U					U				
299-W18-248	140	140.5	B06JS2		5/26/1992	DATACH			U				U					U				

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Table C-45. Semi-Volatile Organic Analysis Results for 299-W-18-248 (216-Z-1A) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dodecane (112-40-3)				Naphthalene (91-20-3)				Pentachlorophenol (87-86-5)				Phenol (108-95-2)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1		5/4/1992			U				U					U				
299-W18-248	39.5	40	B06JS9		5/6/1992			U				U					U				
299-W18-248	59.6	60.1	B06JT6		5/11/1992			U				U					U				
299-W18-248	81	81.5	B06JV5		5/15/1992			U				U					U				
299-W18-248	89	89.5	B06JW1		5/19/1992			U				U					U				
299-W18-248	102	102.5	B06JW9		5/21/1992			U				U					U				
299-W18-248	121	121.5	B06JX6		5/22/1992			U				U					U				
299-W18-248	126.5	127	B06JY3		5/22/1992			U				U					U				
299-W18-248	140	140.5	B06JS2		5/26/1992			U				U					U				

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Table C-45. Semi-Volatile Organic Analysis Results for 299-W-18-248 (216-Z-1A) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)			
						8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1		5/4/1992			U				U	
299-W18-248	39.5	40	B06JS9		5/6/1992			U				U	
299-W18-248	59.6	60.1	B06JT6		5/11/1992			U				U	
299-W18-248	81	81.5	B06JV5		5/15/1992			U				U	
299-W18-248	89	89.5	B06JW1		5/19/1992			U				U	
299-W18-248	102	102.5	B06JW9		5/21/1992			U				U	
299-W18-248	121	121.5	B06JX6		5/22/1992			U				U	
299-W18-248	126.5	127	B06JY3		5/22/1992			U				U	
299-W18-248	140	140.5	B06JS2		5/26/1992			U				U	

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Table C-46. Volatile Organic Analysis Results for 299-W-18-248 (216-Z-1A) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1		5/4/1992	PNL1			U			U							U			
299-W18-248	39.5	40	B06JS9		5/6/1992	PNL1			U			U							U			
299-W18-248	59.6	60.1	B06JT6		5/11/1992	PNL1			U			U							U			
299-W18-248	65	65	B06JT9		5/12/1992	PNL1			U	100	µg/kg	J							U			
299-W18-248	70	70	B06JV0		5/12/1992	PNL1			U	75	µg/kg	J							U			
299-W18-248	75	75	B06JV1		5/12/1992	PNL1			U			U							U			
299-W18-248	79.9	79.9	B06JV2		5/12/1992	PNL1			U			U							U			
299-W18-248	81	81.5	B06JV5		5/15/1992	PNL1			U			U							U			
299-W18-248	85	85	B06JV7		5/18/1992	PNL1			U			U							U			
299-W18-248	90	90	B06JW3		5/19/1992	PNL1			U			U							U			
299-W18-248	95	95	B06JW4		5/19/1992	PNL1			U			U							U			
299-W18-248	100	100	B06JW5		5/20/1992	PNL1			U			U							U			
299-W18-248	102	102.5	B06JW9		5/21/1992	PNL1			U			U							U			
299-W18-248	105	105	B06JX1		5/21/1992	PNL1			U			U							U			
299-W18-248	110	110	B06JX2		5/21/1992	PNL1			U			U							U			
299-W18-248	115	115	B06JX3		5/21/1992	PNL1			U			U				U			U			
299-W18-248	120	120	B06JX8		5/21/1992	PNL1			U			U							U			
299-W18-248	121	121.5	B06JX6		5/22/1992	PNL1			U			U				U			U			
299-W18-248	125	125	B06JX9		5/22/1992	PNL1			U			U				U			U			
299-W18-248	126.5	127	B06JY3		5/22/1992	PNL1			U			U				U			U			
299-W18-248	130	130	B06JR7		5/26/1992	PNL1			U			U				U			U			
299-W18-248	135	135	B06JR9		5/26/1992	PNL1			U			U				U			U			
299-W18-248	140	140	B06JZ5		5/26/1992	PNL1			U			U				U			U			
299-W18-248	140	140.5	B06JS2		5/26/1992	PNL1			U	6	µg/kg					U			U			

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Table C-46. Volatile Organic Analysis Results for 299-W-18-248 (216-Z-1A) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1		5/4/1992			U						U			U				
299-W18-248	39.5	40	B06JS9		5/6/1992			U	4679	µg/kg				U				U			
299-W18-248	59.6	60.1	B06JT6		5/11/1992			U	1062	µg/kg				U		5	µg/kg				
299-W18-248	65	65	B06JT9		5/12/1992			U	2264	µg/kg				U		21	µg/kg				
299-W18-248	70	70	B06JV0		5/12/1992			U	771	µg/kg				U		10	µg/kg				
299-W18-248	75	75	B06JV1		5/12/1992			U	538	µg/kg				U		4	µg/kg				
299-W18-248	79.9	79.9	B06JV2		5/12/1992			U				U		U		5	µg/kg				
299-W18-248	81	81.5	B06JV5		5/15/1992			U				U		U		5	µg/kg				
299-W18-248	85	85	B06JV7		5/18/1992			U				U		U		6	µg/kg				
299-W18-248	90	90	B06JW3		5/19/1992			U	116	µg/kg				U		2	µg/kg				
299-W18-248	95	95	B06JW4		5/19/1992			U	181	µg/kg				U				U			
299-W18-248	100	100	B06JW5		5/20/1992			U	194	µg/kg				U				U			
299-W18-248	102	102.5	B06JW9		5/21/1992			U	1858	µg/kg				U		3	µg/kg				
299-W18-248	105	105	B06JX1		5/21/1992			U	153	µg/kg				U		3	µg/kg				
299-W18-248	110	110	B06JX2		5/21/1992			U				U		U		4	µg/kg				
299-W18-248	115	115	B06JX3		5/21/1992			U	113	µg/kg				U		2	µg/kg				
299-W18-248	120	120	B06JX8		5/21/1992			U	122	µg/kg				U		2	µg/kg				
299-W18-248	121	121.5	B06JX6		5/22/1992			U	578	µg/kg				U				U			
299-W18-248	125	125	B06JX9		5/22/1992			U				U		U				U			
299-W18-248	126.5	127	B06JY3		5/22/1992			U				U		U				U			
299-W18-248	130	130	B06JR7		5/26/1992			U				U		U				U			
299-W18-248	135	135	B06JR9		5/26/1992			U				U		U				U			
299-W18-248	140	140	B06JZ5		5/26/1992			U				U		U				U			
299-W18-248	140	140.5	B06JS2		5/26/1992			U				U		U				U			

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Table C-46. Volatile Organic Analysis Results for 299-W-18-248 (216-Z-1A) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)					
						502.2				502.2				502.2					
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ		
299-W18-248	19.5	20	B06JL1		5/4/1992			U											
299-W18-248	39.5	40	B06JS9		5/6/1992			U											
299-W18-248	59.6	60.1	B06JT6		5/11/1992	40	µg/kg							4	µg/kg				
299-W18-248	65	65	B06JT9		5/12/1992	133	µg/kg			150	µg/kg	J		30	µg/kg				
299-W18-248	70	70	B06JV0		5/12/1992	84	µg/kg			100	µg/kg	J		21	µg/kg				
299-W18-248	75	75	B06JV1		5/12/1992			U				U		4	µg/kg				
299-W18-248	79.9	79.9	B06JV2		5/12/1992			U				U		4	µg/kg				
299-W18-248	81	81.5	B06JV5		5/15/1992			U				U		5	µg/kg				
299-W18-248	85	85	B06JV7		5/18/1992			U				U		6	µg/kg				
299-W18-248	90	90	B06JW3		5/19/1992			U				U		2	µg/kg				
299-W18-248	95	95	B06JW4		5/19/1992			U				U							U
299-W18-248	100	100	B06JW5		5/20/1992			U				U		2	µg/kg				
299-W18-248	102	102.5	B06JW9		5/21/1992			U				U		3	µg/kg				
299-W18-248	105	105	B06JX1		5/21/1992			U				U		5	µg/kg				
299-W18-248	110	110	B06JX2		5/21/1992			U				U		4	µg/kg				
299-W18-248	115	115	B06JX3		5/21/1992			U				U		3	µg/kg				
299-W18-248	120	120	B06JX8		5/21/1992			U				U		2	µg/kg				
299-W18-248	121	121.5	B06JX6		5/22/1992	26	µg/kg					U							U
299-W18-248	125	125	B06JX9		5/22/1992	26	µg/kg					U							U
299-W18-248	126.5	127	B06JY3		5/22/1992	59	µg/kg					U		2	µg/kg				
299-W18-248	130	130	B06JR7		5/26/1992			U				U							U
299-W18-248	135	135	B06JR9		5/26/1992			U				U		3	µg/kg				
299-W18-248	140	140	B06JZ5		5/26/1992			U				U							U
299-W18-248	140	140.5	B06JS2		5/26/1992			U				U		3	µg/kg				

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Table C-47. Wet Chemistry Analysis Results for 299-W-18-248 (216-Z-1A) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Nitrate (14797-55-8)				Nitrite (14797-65-0)				Bromide (24959-67-9)				Chloride (16887-00-6)			
							D4327				D4327				D4327				D4327			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1		5/4/1992	DATACH	2700	µg/kg					U					9400	µg/kg			
299-W18-248	39.5	40	B06JS9		5/6/1992	DATACH	1000	µg/kg					U					8100	µg/kg			
299-W18-248	59.6	60.1	B06JT6		5/11/1992	DATACH	5000	µg/kg					U					1500	µg/kg			
299-W18-248	81	81.5	B06JV5		5/15/1992	DATACH	2200	µg/kg			400	µg/kg						2600	µg/kg			
299-W18-248	89	89.5	B06JW1		5/19/1992	DATACH	2400	µg/kg			1600	µg/kg						3400	µg/kg			
299-W18-248	102	102.5	B06JW9		5/21/1992	DATACH	6900	µg/kg					U					6400	µg/kg			
299-W18-248	121	121.5	B06JX6		5/22/1992	DATACH	4000	µg/kg					U					3700	µg/kg			
299-W18-248	126.5	127	B06JY3		5/22/1992	DATACH	4300	µg/kg					U					4400	µg/kg			
299-W18-248	140	140.5	B06JS2		5/26/1992	DATACH	4200	µg/kg					U					4000	µg/kg			

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Table C-47. Wet Chemistry Analysis Results for 299-W-18-248 (216-Z-1A) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						9010				D4327				D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1		5/4/1992			U				U			U		26000	$\mu\text{g}/\text{kg}$			
299-W18-248	39.5	40	B06JS9		5/6/1992			U		300	$\mu\text{g}/\text{kg}$				U		17000	$\mu\text{g}/\text{kg}$			
299-W18-248	59.6	60.1	B06JT6		5/11/1992			U				U			U		6000	$\mu\text{g}/\text{kg}$			
299-W18-248	81	81.5	B06JV5		5/15/1992			U				U			U		8000	$\mu\text{g}/\text{kg}$			
299-W18-248	89	89.5	B06JW1		5/19/1992			U		400	$\mu\text{g}/\text{kg}$				U		11000	$\mu\text{g}/\text{kg}$			
299-W18-248	102	102.5	B06JW9		5/21/1992			U				U			U		7000	$\mu\text{g}/\text{kg}$			
299-W18-248	121	121.5	B06JX6		5/22/1992			U		1900	$\mu\text{g}/\text{kg}$				U		4800	$\mu\text{g}/\text{kg}$			
299-W18-248	126.5	127	B06JY3		5/22/1992			U		6600	$\mu\text{g}/\text{kg}$				U		10000	$\mu\text{g}/\text{kg}$			
299-W18-248	140	140.5	B06JS2		5/26/1992			U		1200	$\mu\text{g}/\text{kg}$				U		12000	$\mu\text{g}/\text{kg}$			

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Table C-48. Metal Analysis Results for 299-W-18-249 (216-Z-18) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)				Copper (7440-50-8)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9		7/7/1992	7000000	µg/kg			9600	µg/kg			10000	µg/kg			17000	µg/kg		
299-W18-249	30.8	31.3	B06VZ3		7/8/1992	13000000	µg/kg			13000	µg/kg			17000	µg/kg			16000	µg/kg		
299-W18-249	33	33.5	B06VZ7		7/8/1992	11000000	µg/kg			11000	µg/kg			18000	µg/kg			14000	µg/kg		
299-W18-249	35	35.5	B06W01		7/8/1992	15000000	µg/kg			11000	µg/kg			15000	µg/kg			14000	µg/kg		
299-W18-249	37	37.5	B06W05		7/8/1992	15000000	µg/kg			13000	µg/kg			19000	µg/kg			16000	µg/kg		
299-W18-249	38.9	39.3	B06W09		7/9/1992	3100000	µg/kg						U				U	2000	µg/kg		
299-W18-249	59.1	59.6	B06W12		7/13/1992	13000000	µg/kg			7000	µg/kg			22000	µg/kg			15000	µg/kg		
299-W18-249	80.9	81.4	B06W16		7/14/1992	15000000	µg/kg			20000	µg/kg			9000	µg/kg			20000	µg/kg		
299-W18-249	100	100.5	B06W20		7/16/1992	9500000	µg/kg			18000	µg/kg			6000	µg/kg			12000	µg/kg		
299-W18-249	127.8	128.3	B06W25		7/21/1992	15000000	µg/kg			16000	µg/kg			12000	µg/kg			17000	µg/kg		
299-W18-249	146.2	146.7	B06W28		7/21/1992	23000000	µg/kg			20000	µg/kg			8000	µg/kg			18000	µg/kg		

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Table C-48. Metal Analysis Results for 299-W-18-249 (216-Z-18) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)				Manganese (7439-96-5)			
						6010				7421				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9		7/7/1992	30000000	µg/kg			3100	µg/kg			4900000	µg/kg			360000	µg/kg		
299-W18-249	30.8	31.3	B06VZ3		7/8/1992	34000000	µg/kg			3000	µg/kg			6600000	µg/kg			450000	µg/kg		
299-W18-249	33	33.5	B06VZ7		7/8/1992	32000000	µg/kg			3200	µg/kg			5700000	µg/kg			470000	µg/kg		
299-W18-249	35	35.5	B06W01		7/8/1992	28000000	µg/kg			2600	µg/kg			5300000	µg/kg			350000	µg/kg		
299-W18-249	37	37.5	B06W05		7/8/1992	35000000	µg/kg			2600	µg/kg			5900000	µg/kg			430000	µg/kg		
299-W18-249	38.9	39.3	B06W09		7/9/1992	47000000	µg/kg			2100	µg/kg			2000000	µg/kg			71000	µg/kg		
299-W18-249	59.1	59.6	B06W12		7/13/1992	35000000	µg/kg			3600	µg/kg			5000000	µg/kg			5900000	µg/kg		
299-W18-249	80.9	81.4	B06W16		7/14/1992	22000000	µg/kg			8600	µg/kg			7400000	µg/kg			430000	µg/kg		
299-W18-249	100	100.5	B06W20		7/16/1992	19000000	µg/kg			5400	µg/kg			6100000	µg/kg			330000	µg/kg		
299-W18-249	127.8	128.3	B06W25		7/21/1992	28000000	µg/kg			7000	µg/kg			6600000	µg/kg			530000	µg/kg		
299-W18-249	146.2	146.7	B06W28		7/21/1992	20000000	µg/kg			5500	µg/kg			8500000	µg/kg			280000	µg/kg		

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Table C-48. Metal Analysis Results for 299-W-18-249 (216-Z-18) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)				Silver (7440-22-4)			
						7470				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9		7/7/1992			U		12000	µg/kg			940000	µg/kg					U	
299-W18-249	30.8	31.3	B06VZ3		7/8/1992			U		14000	µg/kg			1200000	µg/kg					U	
299-W18-249	33	33.5	B06VZ7		7/8/1992			U		14000	µg/kg			920000	µg/kg					U	
299-W18-249	35	35.5	B06W01		7/8/1992			U		14000	µg/kg			860000	µg/kg					U	
299-W18-249	37	37.5	B06W05		7/8/1992			U		130000	µg/kg			1000000	µg/kg					U	
299-W18-249	38.9	39.3	B06W09		7/9/1992			U				U		350000	µg/kg					U	
299-W18-249	59.1	59.6	B06W12		7/13/1992			U		10000	µg/kg			1200000	µg/kg					U	
299-W18-249	80.9	81.4	B06W16		7/14/1992			U		15000	µg/kg			2800000	µg/kg					U	
299-W18-249	100	100.5	B06W20		7/16/1992			U		12000	µg/kg			2000000	µg/kg					U	
299-W18-249	127.8	128.3	B06W25		7/21/1992			U		16000	µg/kg			2200000	µg/kg					U	
299-W18-249	146.2	146.7	B06W28		7/21/1992			U		18000	µg/kg			1900000	µg/kg					U	

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Table C-48. Metal Analysis Results for 299-W-18-249 (216-Z-18) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sodium (7440-23-5)				Tin (7440-31-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)				
						6010				6010				6010				6010				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
299-W18-249	22.4	22.9	B06VY9		7/7/1992	470000	µg/kg					U			77000	µg/kg			55000	µg/kg		
299-W18-249	30.8	31.3	B06VZ3		7/8/1992	1600000	µg/kg					U			98000	µg/kg			61000	µg/kg		
299-W18-249	33	33.5	B06VZ7		7/8/1992	1600000	µg/kg					U			110000	µg/kg			56000	µg/kg		
299-W18-249	35	35.5	B06W01		7/8/1992	1800000	µg/kg					U			87000	µg/kg			48000	µg/kg		
299-W18-249	37	37.5	B06W05		7/8/1992	1800000	µg/kg					U			1200000	µg/kg			60000	µg/kg		
299-W18-249	38.9	39.3	B06W09		7/9/1992	650000	µg/kg					U			7000	µg/kg			38000	µg/kg		
299-W18-249	59.1	59.6	B06W12		7/13/1992	1900000	µg/kg					U			110000	µg/kg			54000	µg/kg		
299-W18-249	80.9	81.4	B06W16		7/14/1992	410000	µg/kg					U			45000	µg/kg			52000	µg/kg		
299-W18-249	100	100.5	B06W20		7/16/1992	550000	µg/kg					U			43000	µg/kg			36000	µg/kg		
299-W18-249	127.8	128.3	B06W25		7/21/1992	750000	µg/kg					U			67000	µg/kg			47000	µg/kg		
299-W18-249	146.2	146.7	B06W28		7/21/1992	990000	µg/kg					U			49000	µg/kg			38000	µg/kg		

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Table C-49. Semi-Volatile Analysis Results for 299-W-18-249 (216-Z-18) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)			
						8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9		7/7/1992			U				U	
299-W18-249	30.8	31.3	B06VZ3		7/8/1992			U				U	
299-W18-249	33	33.5	B06VZ7		7/8/1992			U				U	
299-W18-249	35	35.5	B06W01		7/8/1992			U				U	
299-W18-249	37	37.5	B06W05		7/8/1992			U				U	
299-W18-249	38.9	39.3	B06W09		7/9/1992			U				U	
299-W18-249	59.1	59.6	B06W12		7/13/1992			U				U	
299-W18-249	80.9	81.4	B06W16		7/14/1992			U				U	
299-W18-249	100	100.5	B06W20		7/16/1992			U				U	
299-W18-249	127.8	128.3	B06W25		7/21/1992			U				U	
299-W18-249	146.2	146.7	B06W28		7/21/1992	29	µg/kg	J				U	

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Table C-50. Volatile Organic Analysis Results for 299-W-18-249 (216-Z-18) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9		7/7/1992			U				U						3	µg/kg		
299-W18-249	26	26	B06704		7/7/1992	3	µg/kg					U									U
299-W18-249	30	30	B06705		7/7/1992	4	µg/kg					U									U
299-W18-249	30.8	31.3	B06VZ3		7/8/1992			U				U									U
299-W18-249	33	33.5	B06VZ7		7/8/1992	3	µg/kg					U									U
299-W18-249	35	35.5	B06W01		7/8/1992	6	µg/kg					U									U
299-W18-249	37	37.5	B06W05		7/8/1992	6	µg/kg					U									U
299-W18-249	38.9	39.3	B06W09		7/9/1992	7	µg/kg					U						14	µg/kg		
299-W18-249	45	45	B06709		7/10/1992	9	µg/kg					U						27	µg/kg		
299-W18-249	50	50	B06710		7/10/1992	15	µg/kg					U									U
299-W18-249	55	55	B06711		7/13/1992	24	µg/kg					U									U
299-W18-249	59	59	B06712		7/13/1992	122	µg/kg					U									U
299-W18-249	59.1	59.6	B06W12		7/13/1992	39	µg/kg					U									U
299-W18-249	65	65	B06714		7/13/1992	31	µg/kg					U									U
299-W18-249	70	70	B06715		7/13/1992	74	µg/kg					U									U
299-W18-249	75	75	B06716		7/13/1992	216	µg/kg					U									U
299-W18-249	80	80	B06717		7/13/1992	184	µg/kg					U									U
299-W18-249	80.9	81.4	B06W16		7/14/1992	139	µg/kg					U									U
299-W18-249	85	85	B06719		7/14/1992	133	µg/kg					U									U
299-W18-249	90	90	B06720		7/14/1992	566	µg/kg			4	µg/kg										U
299-W18-249	95	95	B06721		7/14/1992	188	µg/kg			3	µg/kg										U
299-W18-249	99	99	B06722		7/16/1992	168	µg/kg			23	µg/kg							14	µg/kg		
299-W18-249	100	100.5	B06W20		7/16/1992	53	µg/kg					U									U
299-W18-249	100	100.5	B06W22		7/16/1992			U				U									U
299-W18-249	100	100.5	B06W23		7/16/1992	4	µg/kg					U									U
299-W18-249	107	107	B06723		7/16/1992	14	µg/kg					U							8	µg/kg	
299-W18-249	110	110	B06724		7/16/1992	44	µg/kg					U									U
299-W18-249	115	115	B06726		7/16/1992	34	µg/kg					U									U
299-W18-249	120	120	B06727		7/17/1992	28	µg/kg					U									U
299-W18-249	125	125	B06728		7/17/1992	9	µg/kg					U									U
299-W18-249	127.8	128.3	B06W25		7/21/1992	58	µg/kg			18	µg/kg								34	µg/kg	
299-W18-249	133	133	B06731		7/21/1992	1618	µg/kg			7	µg/kg										U
299-W18-249	135	135	B06732		7/21/1992	134	µg/kg					U									U
299-W18-249	140	140	B06733		7/21/1992	481	µg/kg			4	µg/kg										U
299-W18-249	145	145	B06734		7/21/1992	1957	µg/kg			8	µg/kg										U
299-W18-249	146.2	146.7	B06W28		7/21/1992	1755	µg/kg			7	µg/kg										U

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Table C-50. Volatile Organic Analysis Results for 299-W-18-249 (216-Z-18) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m-p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)				
						502.2				502.2				502.2				502.2				
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	
299-W18-249	22.4	22.9	B06VY9		7/7/1992	4	µg/kg			134	µg/kg			4	µg/kg							U
299-W18-249	26	26	B06704		7/7/1992				U	80	µg/kg					U						U
299-W18-249	30	30	B06705		7/7/1992				U				U			U						U
299-W18-249	30.8	31.3	B06VZ3		7/8/1992				U				U			U						U
299-W18-249	33	33.5	B06VZ7		7/8/1992				U				U			U						U
299-W18-249	35	35.5	B06W01		7/8/1992				U				U			U						U
299-W18-249	37	37.5	B06W05		7/8/1992				U	272	µg/kg					U						U
299-W18-249	38.9	39.3	B06W09		7/9/1992	10	µg/kg						U	116	µg/kg							U
299-W18-249	45	45	B06709		7/10/1992	14	µg/kg			1992	µg/kg					U						U
299-W18-249	50	50	B06710		7/10/1992				U	237	µg/kg					U						U
299-W18-249	55	55	B06711		7/13/1992				U	56	µg/kg					U						U
299-W18-249	59	59	B06712		7/13/1992				U	17	µg/kg					U						U
299-W18-249	59.1	59.6	B06W12		7/13/1992				U				U			U						U
299-W18-249	65	65	B06714		7/13/1992				U	125	µg/kg					U						U
299-W18-249	70	70	B06715		7/13/1992				U				U			U						U
299-W18-249	75	75	B06716		7/13/1992				U	126	µg/kg					U						U
299-W18-249	80	80	B06717		7/13/1992				U				U			U			2	µg/kg		
299-W18-249	80.9	81.4	B06W16		7/14/1992				U	10983	µg/kg	D				U						U
299-W18-249	85	85	B06719		7/14/1992				U	1108	µg/kg					U						U
299-W18-249	90	90	B06720		7/14/1992				U	83	µg/kg					U						U
299-W18-249	95	95	B06721		7/14/1992				U	559	µg/kg					U			5	µg/kg		
299-W18-249	99	99	B06722		7/16/1992	8	µg/kg			89996	µg/kg	D		7	µg/kg				6	µg/kg		
299-W18-249	100	100.5	B06W20		7/16/1992				U				U			U						U
299-W18-249	100	100.5	B06W22		7/16/1992				U				U			U			2	µg/kg		
299-W18-249	100	100.5	B06W23		7/16/1992				U				U	3	µg/kg				2	µg/kg		
299-W18-249	107	107	B06723		7/16/1992	3	µg/kg						U	69	µg/kg							U
299-W18-249	110	110	B06724		7/16/1992				U	89	µg/kg					U						U
299-W18-249	115	115	B06726		7/16/1992				U	1325	µg/kg					U						U
299-W18-249	120	120	B06727		7/17/1992				U				U			U						U
299-W18-249	125	125	B06728		7/17/1992				U				U			U						U
299-W18-249	127.8	128.3	B06W25		7/21/1992	42	µg/kg			88800	µg/kg	DJ		34	µg/kg				2	µg/kg		
299-W18-249	133	133	B06731		7/21/1992				U	1612	µg/kg					U						U
299-W18-249	135	135	B06732		7/21/1992				U	79	µg/kg					U						U
299-W18-249	140	140	B06733		7/21/1992				U	27731	µg/kg	D				U						U
299-W18-249	145	145	B06734		7/21/1992				U	1613	µg/kg					U						U
299-W18-249	146.2	146.7	B06W28		7/21/1992				U				U			U			2	µg/kg		

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Table C-50. Volatile Organic Analysis Results for 299-W-18-249 (216-Z-18) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9		7/7/1992	4	µg/kg					U					U
299-W18-249	26	26	B06704		7/7/1992				U			U					U
299-W18-249	30	30	B06705		7/7/1992				U			U					U
299-W18-249	30.8	31.3	B06VZ3		7/8/1992	3	µg/kg					U					U
299-W18-249	33	33.5	B06VZ7		7/8/1992	3	µg/kg					U					U
299-W18-249	35	35.5	B06W01		7/8/1992	466	µg/kg					U					U
299-W18-249	37	37.5	B06W05		7/8/1992	9	µg/kg					U					U
299-W18-249	38.9	39.3	B06W09		7/9/1992	1162	µg/kg					U					U
299-W18-249	45	45	B06709		7/10/1992	130	µg/kg					U					U
299-W18-249	50	50	B06710		7/10/1992				U			U					U
299-W18-249	55	55	B06711		7/13/1992				U			U					U
299-W18-249	59	59	B06712		7/13/1992				U			U					U
299-W18-249	59.1	59.6	B06W12		7/13/1992	46	µg/kg					U					U
299-W18-249	65	65	B06714		7/13/1992				U			U					U
299-W18-249	70	70	B06715		7/13/1992				U			U					U
299-W18-249	75	75	B06716		7/13/1992				U			U					U
299-W18-249	80	80	B06717		7/13/1992				U			U			2	µg/kg	
299-W18-249	80.9	81.4	B06W16		7/14/1992	62	µg/kg					U					U
299-W18-249	85	85	B06719		7/14/1992				U			U					U
299-W18-249	90	90	B06720		7/14/1992				U			U					U
299-W18-249	95	95	B06721		7/14/1992				U			U			5	µg/kg	
299-W18-249	99	99	B06722		7/16/1992	77	µg/kg					U			8	µg/kg	
299-W18-249	100	100.5	B06W20		7/16/1992				U			U					U
299-W18-249	100	100.5	B06W22		7/16/1992				U			U					U
299-W18-249	100	100.5	B06W23		7/16/1992	5	µg/kg					U					U
299-W18-249	107	107	B06723		7/16/1992	17	µg/kg					U					U
299-W18-249	110	110	B06724		7/16/1992				U			U					U
299-W18-249	115	115	B06726		7/16/1992				U			U					U
299-W18-249	120	120	B06727		7/17/1992				U			U					U
299-W18-249	125	125	B06728		7/17/1992				U			U					U
299-W18-249	127.8	128.3	B06W25		7/21/1992	2961	µg/kg	D				U					U
299-W18-249	133	133	B06731		7/21/1992				U			U					U
299-W18-249	135	135	B06732		7/21/1992				U			U					U
299-W18-249	140	140	B06733		7/21/1992				U			U					U
299-W18-249	145	145	B06734		7/21/1992				U			U					U
299-W18-249	146.2	146.7	B06W28		7/21/1992	12	µg/kg					U					U

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Table C-51. Wet Chemistry Analysis Results for 299-W-18-249 (216-Z-18) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						9010				D4327				D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9		7/7/1992			U		500	$\mu\text{g}/\text{kg}$				U			19000	$\mu\text{g}/\text{kg}$		
299-W18-249	30.8	31.3	B06VZ3		7/8/1992			U													
299-W18-249	33	33.5	B06VZ7		7/8/1992			U													
299-W18-249	35	35.5	B06W01		7/8/1992			U													
299-W18-249	37	37.5	B06W05		7/8/1992			U													
299-W18-249	38.9	39.3	B06W09		7/9/1992			U													
299-W18-249	59.1	59.6	B06W12		7/13/1992			U													
299-W18-249	80.9	81.4	B06W16		7/14/1992			U		300	$\mu\text{g}/\text{kg}$				U			10000	$\mu\text{g}/\text{kg}$		
299-W18-249	100	100.5	B06W20		7/16/1992			U				U			U			6900	$\mu\text{g}/\text{kg}$		
299-W18-249	127.8	128.3	B06W25		7/21/1992			U		400	$\mu\text{g}/\text{kg}$				U			4000	$\mu\text{g}/\text{kg}$		
299-W18-249	146.2	146.7	B06W28		7/21/1992			U				U			U			2800	$\mu\text{g}/\text{kg}$		

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Table C-52. Volatile Organic Analysis Results for 299-W-18-252 (216-Z-1A) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)			1,1-Dichloroethane (75-34-3)			1,2-Dichloroethane (107-06-2)			Benzene (71-43-2)		
							502.2			502.2			502.2			502.2		
							Conc'n	Units	Q VQ	Conc'n	Units	Q VQ	Conc'n	Units	Q VQ	Conc'n	Units	Q VQ
299-W18-252	4.5	4.5	B01PH2		5/3/1993	PNL1			U			U			U			U
299-W18-252	9.5	9.5	B01PH3		5/3/1993	PNL1			U			U			U			U
299-W18-252	15	15	B01PG5		5/3/1993	PNL1			U			U			U			U
299-W18-252	20	20	B01PG4		5/3/1993	PNL1			U			U			U			U
299-W18-252	25	25	B01PG6		5/4/1993	PNL1			U			U			U			U
299-W18-252	30.6	30.6	B01PG7		5/4/1993	PNL1			U			U			U			U
299-W18-252	35	35	B01PG8		5/5/1993	PNL1			U			U			U			U
299-W18-252	39.5	39.5	B01PG9		5/5/1993	PNL1			U			U			U			U
299-W18-252	44.7	44.7	B01PH1		5/6/1993	PNL1			U			U			U			U
299-W18-252	49.5	49.5	B07BD5		5/10/1993	PNL1			U			U			U			U
299-W18-252	55	55	B07BD6		5/10/1993	PNL1			U			U			U			U
299-W18-252	59.5	59.5	B07BD7		5/11/1993	PNL1			U			U			U			U
299-W18-252	65.5	65.5	B07BD8		5/11/1993	PNL1			U			U			U			U
299-W18-252	70.5	70.5	B07BD9		5/12/1993	PNL1			U			U			U			U
299-W18-252	75.5	75.5	B07BF0		5/12/1993	PNL1			U			U			U			U
299-W18-252	80.2	80.2	B07BF1		5/12/1993	PNL1			U			U			U			U
299-W18-252	85.5	85.5	B07BF2		5/13/1993	PNL1			U			U			U			U
299-W18-252	89.7	89.7	B07BF3		5/13/1993	PNL1			U			U			U			U
299-W18-252	96	96	B07BF4		5/13/1993	PNL1			U			U			U			U
299-W18-252	99.5	99.5	B07BF5		5/14/1993	PNL1			U			U			U			U
299-W18-252	105	105	B07BF6		5/14/1993	PNL1			U			U			U			U
299-W18-252	115	115	B07BF7		5/17/1993	PNL1			U			U			U			U
299-W18-252	121.3	121.3	B07BF8		5/18/1993	PNL1			U			U			U			U
299-W18-252	126.5	126.5	B07BF9		5/19/1993	PNL1			U			U			U			U
299-W18-252	129.5	129.5	B07BG0		5/19/1993	PNL1			U			U			U			U
299-W18-252	134.8	134.8	B07BG1		5/19/1993	PNL1			U			U			U			U
299-W18-252	142.1	142.1	B07BG2		5/25/1993	PNL1			U			U			U			U
299-W18-252	145.5	145.5	B07BG3		5/25/1993	PNL1			U			U			U			U
299-W18-252	149.7	149.7	B07BG4		5/26/1993	PNL1			U			U			U			U
299-W18-252	154.5	154.5	B07BG5		5/26/1993	PNL1			U			U			U			U
299-W18-252	159.5	159.5	B07BG6		5/26/1993	PNL1			U			U			U			U
299-W18-252	164.5	164.5	B07BG7		5/27/1993	PNL1			U			U			U			U
299-W18-252	164.5	164.5	B07BG8		5/27/1993	PNL1			U			U			U			U
299-W18-252	172	172	B07BG9		5/28/1993	PNL1			U			U			U			U
299-W18-252	175.5	175.5	B07BH0		6/1/1993	PNL1			U			U			U			U
299-W18-252	182	182	B07BH1		6/1/1993	PNL1			U			U			U			U
299-W18-252	185.1	185.1	B07BH2		6/1/1993	PNL1			U			U			U			U

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Table C-52. Volatile Organic Analysis Results for 299-W-18-252 (216-Z-1A) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2- Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-252	4.5	4.5	B01PH2		5/3/1993	6	µg/kg	J				U							U		
299-W18-252	9.5	9.5	B01PH3		5/3/1993	2	µg/kg	J				U							U		
299-W18-252	15	15	B01PG5		5/3/1993			U				U							U		
299-W18-252	20	20	B01PG4		5/3/1993			U				U							U		
299-W18-252	25	25	B01PG6		5/4/1993			U				U							U		
299-W18-252	30.6	30.6	B01PG7		5/4/1993			U				U							U		
299-W18-252	35	35	B01PG8		5/5/1993	7	µg/kg	J				U							U		
299-W18-252	39.5	39.5	B01PG9		5/5/1993	57	µg/kg					U							U		
299-W18-252	44.7	44.7	B01PH1		5/6/1993	18	µg/kg	J				U							U		
299-W18-252	49.5	49.5	B07BD5		5/10/1993			U				U							U		
299-W18-252	55	55	B07BD6		5/10/1993	16	µg/kg	J				U							U		
299-W18-252	59.5	59.5	B07BD7		5/11/1993			U				U							U		
299-W18-252	65.5	65.5	B07BD8		5/11/1993	48	µg/kg					U							U		
299-W18-252	70.5	70.5	B07BD9		5/12/1993	77	µg/kg					U							U		
299-W18-252	75.5	75.5	B07BF0		5/12/1993	62	µg/kg					U							U		
299-W18-252	80.2	80.2	B07BF1		5/12/1993	84	µg/kg					U							U		
299-W18-252	85.5	85.5	B07BF2		5/13/1993	25	µg/kg	J				U							U		
299-W18-252	89.7	89.7	B07BF3		5/13/1993	155	µg/kg					U							U		
299-W18-252	96	96	B07BF4		5/13/1993	101	µg/kg					U							U		
299-W18-252	99.5	99.5	B07BF5		5/14/1993	22	µg/kg					U							U		
299-W18-252	105	105	B07BF6		5/14/1993	9	µg/kg	J				U							U		
299-W18-252	115	115	B07BF7		5/17/1993			U				U							U		
299-W18-252	121.3	121.3	B07BF8		5/18/1993	6	µg/kg	J				U							U		
299-W18-252	126.5	126.5	B07BF9		5/19/1993	519	µg/kg			9	µg/kg	J							U		
299-W18-252	129.5	129.5	B07BG0		5/19/1993	74	µg/kg					U							U		
299-W18-252	134.8	134.8	B07BG1		5/19/1993	307	µg/kg			36	µg/kg								U		
299-W18-252	142.1	142.1	B07BG2		5/25/1993	53	µg/kg			68	µg/kg								U		
299-W18-252	145.5	145.5	B07BG3		5/25/1993	140	µg/kg			12	µg/kg	J							U		
299-W18-252	149.7	149.7	B07BG4		5/26/1993	56	µg/kg			12	µg/kg	J							U		
299-W18-252	154.5	154.5	B07BG5		5/26/1993	281	µg/kg					U							U		
299-W18-252	159.5	159.5	B07BG6		5/26/1993	205	µg/kg			11	µg/kg	J							U		
299-W18-252	164.5	164.5	B07BG7		5/27/1993	177	µg/kg					U							U		
299-W18-252	164.5	164.5	B07BG8		5/27/1993	377	µg/kg					U							U		
299-W18-252	172	172	B07BG9		5/28/1993	10	µg/kg	J				U							U		
299-W18-252	175.5	175.5	B07BH0		6/1/1993	116	µg/kg					U							U		
299-W18-252	182	182	B07BH1		6/1/1993			U				U							U		
299-W18-252	185.1	185.1	B07BH2		6/1/1993	159	µg/kg					U							U		

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Table C-52. Volatile Organic Analysis Results for 299-W-18-252 (216-Z-1A) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-252	4.5	4.5	B01PH2		5/3/1993			U				U							U		
299-W18-252	9.5	9.5	B01PH3		5/3/1993			U				U							U		
299-W18-252	15	15	B01PG5		5/3/1993			U				U							U		
299-W18-252	20	20	B01PG4		5/3/1993			U				U							U		
299-W18-252	25	25	B01PG6		5/4/1993			U				U							U		
299-W18-252	30.6	30.6	B01PG7		5/4/1993			U				U							U		
299-W18-252	35	35	B01PG8		5/5/1993			U				U							U		
299-W18-252	39.5	39.5	B01PG9		5/5/1993			U				U							U		
299-W18-252	44.7	44.7	B01PH1		5/6/1993			U				U							U		
299-W18-252	49.5	49.5	B07BD5		5/10/1993			U				U							U		
299-W18-252	55	55	B07BD6		5/10/1993			U				U							U		
299-W18-252	59.5	59.5	B07BD7		5/11/1993			U				U							U		
299-W18-252	65.5	65.5	B07BD8		5/11/1993			U				U							U		
299-W18-252	70.5	70.5	B07BD9		5/12/1993			U				U							U		
299-W18-252	75.5	75.5	B07BF0		5/12/1993			U				U							U		
299-W18-252	80.2	80.2	B07BF1		5/12/1993			U				U							U		
299-W18-252	85.5	85.5	B07BF2		5/13/1993			U				U							U		
299-W18-252	89.7	89.7	B07BF3		5/13/1993			U				U					6	µg/kg	J		
299-W18-252	96	96	B07BF4		5/13/1993			U				U							U		
299-W18-252	99.5	99.5	B07BF5		5/14/1993			U				U							U		
299-W18-252	105	105	B07BF6		5/14/1993			U				U							U		
299-W18-252	115	115	B07BF7		5/17/1993			U				U							U		
299-W18-252	121.3	121.3	B07BF8		5/18/1993			U				U							U		
299-W18-252	126.5	126.5	B07BF9		5/19/1993			U				U							U		
299-W18-252	129.5	129.5	B07BG0		5/19/1993			U				U							U		
299-W18-252	134.8	134.8	B07BG1		5/19/1993			U				U							U		
299-W18-252	142.1	142.1	B07BG2		5/25/1993			U				U							U		
299-W18-252	145.5	145.5	B07BG3		5/25/1993			U				U							U		
299-W18-252	149.7	149.7	B07BG4		5/26/1993			U				U							U		
299-W18-252	154.5	154.5	B07BG5		5/26/1993			U			U								U		
299-W18-252	159.5	159.5	B07BG6		5/26/1993			U				U							U		
299-W18-252	164.5	164.5	B07BG7		5/27/1993			U				U							U		
299-W18-252	164.5	164.5	B07BG8		5/27/1993			U				U							U		
299-W18-252	172	172	B07BG9		5/28/1993			U			U								U		
299-W18-252	175.5	175.5	B07BH0		6/1/1993			U				U							U		
299-W18-252	182	182	B07BH1		6/1/1993			U				U							U		
299-W18-252	185.1	185.1	B07BH2		6/1/1993			U				U							U		

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Table C-52. Volatile Organic Analysis Results for 299-W-18-252 (216-Z-1A) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-252	4.5	4.5	B01PH2		5/3/1993			U				U				U	
299-W18-252	9.5	9.5	B01PH3		5/3/1993			U				U				U	
299-W18-252	15	15	B01PG5		5/3/1993			U				U				U	
299-W18-252	20	20	B01PG4		5/3/1993			U				U				U	
299-W18-252	25	25	B01PG6		5/4/1993	11	µg/kg					U				U	
299-W18-252	30.6	30.6	B01PG7		5/4/1993	12	µg/kg					U				U	
299-W18-252	35	35	B01PG8		5/5/1993	280	µg/kg					U				U	
299-W18-252	39.5	39.5	B01PG9		5/5/1993			U				U				U	
299-W18-252	44.7	44.7	B01PH1		5/6/1993	260	µg/kg					U				U	
299-W18-252	49.5	49.5	B07BD5		5/10/1993			U				U				U	
299-W18-252	55	55	B07BD6		5/10/1993	17	µg/kg					U				U	
299-W18-252	59.5	59.5	B07BD7		5/11/1993			U				U				U	
299-W18-252	65.5	65.5	B07BD8		5/11/1993	37	µg/kg					U				U	
299-W18-252	70.5	70.5	B07BD9		5/12/1993			U				U				U	
299-W18-252	75.5	75.5	B07BF0		5/12/1993			U				U				U	
299-W18-252	80.2	80.2	B07BF1		5/12/1993			U				U				U	
299-W18-252	85.5	85.5	B07BF2		5/13/1993			U				U				U	
299-W18-252	89.7	89.7	B07BF3		5/13/1993			U				U				U	
299-W18-252	96	96	B07BF4		5/13/1993			U				U				U	
299-W18-252	99.5	99.5	B07BF5		5/14/1993			U				U				U	
299-W18-252	105	105	B07BF6		5/14/1993	151	µg/kg					U				U	
299-W18-252	115	115	B07BF7		5/17/1993	58	µg/kg					U				U	
299-W18-252	121.3	121.3	B07BF8		5/18/1993			U				U				U	
299-W18-252	126.5	126.5	B07BF9		5/19/1993			U				U				U	
299-W18-252	129.5	129.5	B07BG0		5/19/1993			U				U				U	
299-W18-252	134.8	134.8	B07BG1		5/19/1993	21	µg/kg					U				U	
299-W18-252	142.1	142.1	B07BG2		5/25/1993	71	µg/kg					U				U	
299-W18-252	145.5	145.5	B07BG3		5/25/1993	201	µg/kg					U				U	
299-W18-252	149.7	149.7	B07BG4		5/26/1993	21	µg/kg					U				U	
299-W18-252	154.5	154.5	B07BG5		5/26/1993			U				U				U	
299-W18-252	159.5	159.5	B07BG6		5/26/1993	53	µg/kg					U				U	
299-W18-252	164.5	164.5	B07BG7		5/27/1993			U				U				U	
299-W18-252	164.5	164.5	B07BG8		5/27/1993			U				U				U	
299-W18-252	172	172	B07BG9		5/28/1993	15	µg/kg					U				U	
299-W18-252	175.5	175.5	B07BH0		6/1/1993			U				U				U	
299-W18-252	182	182	B07BH1		6/1/1993	15	µg/kg					U				U	
299-W18-252	185.1	185.1	B07BH2		6/1/1993			U				U				U	

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Table C-52. Volatile Organic Analysis Results for 299-W-18-252 (216-Z-1A) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2- Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-252	191.7	191.7	B07BH3		6/1/1993	19	µg/kg					U					U
299-W18-252	195.8	195.8	B07BH4		6/3/1993							U					U
299-W18-252	199.5	199.5	B07BH5		6/3/1993	626	µg/kg					U					U
299-W18-252	206.1	206.1	B07BH6		6/7/1993							U					U
299-W18-252	211.1	211.1	B07C87		6/7/1993	20	µg/kg					U					U
299-W18-252	214.7	214.7	B07C88		6/8/1993							U					U
299-W18-252	220.2	220.2	B07C89		6/8/1993							U					U
299-W18-252	225.6	225.6	B07C90		6/9/1993							U					U
299-W18-252	227.4	227.4	B07BS5		6/11/1993							U			2.8	µg/L	

APPENDIX D

AMERICIUM AND PLUTONIUM RESULTS FROM THE 216-Z-1A TILE FIELD

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APPENDIX D

AMERICIUM AND PLUTONIUM RESULTS FROM THE 216-Z-1A TILE FIELD

This appendix presents analytical results documented in RHO-ST-17, *Distribution of Plutonium and Americium Beneath the 216-Z-1A Crib: A Status Report*. The report documents work performed to characterize the distribution of plutonium and americium in sediments beneath the crib. Data summarized in this appendix are presented in RHO-ST-17, Appendix A, and include a combined Pu-239/240 soil concentration, an Am-241 soil concentration, and a counting standard deviation (sigma) for each sample analyzed. The data in the RHO-ST-17 report are provided in nanocuries per gram (nCi/g). To convert to picocuries per gram (pCi/g), multiply nCi/g by 1,000. The data set was provided electronically and was checked against RHO-ST-17, Appendix A, for accuracy. No laboratory data sheets were provided in RHO-ST-17 to validate the accuracy of the Appendix A data summary table. The table also identifies which of four laboratories performed each analysis. RHO-ST-17 provides information regarding the types of analyses performed, and the rationale for selection of the sampling locations and depths.

REFERENCE

RHO-ST-17, 1979, *Distribution of Plutonium and Americium Beneath the 216-Z-1A Crib: A Status Report*, Rockwell Hanford, Inc., Richland, Washington.

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Table D-1. Radionuclide Concentrations in Sediments Beneath 216-Z-1A.* (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
299-W18-85	18.3	1.35E-05	3.51E-06		7.66E-06	4.82E-06	U	LFE
	24.4	5.86E-06	3.10E-06	U	9.46E-06	5.73E-06	U	LFE
	30.5	0.00E+00	3.15E-06	U	7.21E-06	6.41E-06	U	LFE
299-W18-86	18.3	1.08E-05	7.46E-06	U	5.86E-06	3.69E-06	U	LFE
	30.5	4.50E-06	2.66E-06	U	5.41E-06	4.05E-06	U	LFE
	44.2	2.21E-05	4.64E-06		-1.44E-05	9.37E-06	U	LFE
299-W18-87	9.1	1.98E-05	4.36E-06		7.21E-06	4.11E-06	U	LFE
	21.3	4.95E-06	4.66E-06	U	-4.50E-06	4.23E-06	U	LFE
	25.9	2.25E-06	2.91E-06	U	-4.50E-06	4.64E-06	U	LFE
	44.2	1.26E-05	7.44E-06	U	-7.21E-06	6.41E-06	U	LFE
299-W18-88	9.1	9.01E-06	7.66E-06	U	1.40E-05	5.86E-06	U	LFE
	16.8	9.00E-05	9.19E-07		-4.95E-06	4.86E-06	U	LFE
	41.1	5.18E-05	6.73E-06		0.00E+00	4.50E-06	U	LFE
299-W18-149	3.4	3.82E+04	3.82E+02		2.59E+03	2.30E+00		RHO
	3.7	8.24E+03	2.47E+02		5.09E+02	1.30E+00		RHO
	4.0	6.71E+03	2.21E+02		3.86E+02	1.20E+00		RHO
	4.3	2.08E+04	3.96E+02		1.31E+03	2.10E+00		RHO
	4.6	1.30E+03	9.62E+01		7.00E+01	5.00E-01		RHO
	4.9	2.18E+03	1.23E+02		5.57E+01	4.00E-01		RHO
	5.2	3.12E+02	3.31E+01		2.31E+01	1.90E-01		RHO
	5.5	7.43E+02	5.45E+00		1.34E+02	2.79E-01		PNL
	5.8	1.88E+02	0.00E+00	U	1.34E+01	1.50E-01		RHO
	6.1	2.93E+02	8.50E+00		9.77E+01	1.60E-01		RHO
	6.4	4.77E+01	3.48E+00		3.46E+01	1.50E-01		RHO
	6.7	--	--		1.10E+01	1.30E-01		RHO
	6.9	-	--		1.39E+01	1.50E-01		RHO
	7.3	1.59E+01	2.18E+00		7.24E+00	1.10E-01		RHO
	7.6	--	--		9.35E+00	1.20E-01		RHO
	8.2	1.95E+00	4.91E-01		5.14E+01	7.21E-02		PNL
	8.2	--	--		5.72E+00	9.49E-02		RHO
	8.8	--	--		3.70E+01	2.40E-01		RHO
	9.3	--	--		1.11E-01	4.39E-03		RHO
	9.4	--	--		1.91E+01	1.70E-01		RHO
	9.8	--	--		1.79E+01	5.74E-02		RHO
	10.1	--	--		2.10E+01	6.09E-02		RHO
	10.4	2.26E+01	9.28E-01		1.34E+01	6.31E-02		PNL

Table D-1. Radionuclide Concentrations in Sediments Beneath 216-Z-1A.* (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
	10.4	--	--		7.65E+00	3.75E-02		RHO
	10.7	--	--		2.53E+00	2.20E-02		RHO
	11.0	--	--		2.61E+00	2.24E-02		RHO
	11.6	--	--		1.95E+00	1.87E-02		RHO
	11.9	--	--		1.54E+00	1.68E-02		RHO
	12.2	--	--		4.14E-01	7.16E-03		RHO
	12.5	--	--		5.85E-01	8.30E-03		RHO
	13.7	1.18E+01	1.77E+00		1.86E+01	5.54E-02		PNL
	14.3	1.05E+02	7.52E+00		1.26E+02	2.66E-01		PNL
	14.3	--	--		1.96E+01	5.48E-02		RHO
	15.2	-2.78E-02	1.52E-02	U	1.83E-02	3.26E-04		PNL
	16.2	6.67E-03	9.64E-03	U	9.95E-04	7.97E-05		PNL
	16.8	-8.92E-05	9.28E-03	U	6.44E-04	6.62E-05		PNL
	17.4	--	--		7.12E-02	2.66E-03		RHO
	17.5	--	--		9.29E-02	3.33E-03		RHO
	18.3	-4.20E-03	1.07E-02	U	2.99E-03	1.34E-04		PNL
	18.3	5.50E-01	4.95E-02		1.82E-01	1.01E-03		PNL
	18.4	--	--		6.59E-02	8.56E-04		RHO
	18.7	--	--		4.84E-02	7.45E-04		RHO
	19.1	--	--		7.65E-02	9.48E-04		RHO
	19.8	1.26E-02	9.01E-03	U	4.86E-05	3.20E-05	U	PNL
	20	--	--		1.55E-02	4.01E-04		RHO
	20.4	--	--		2.09E-02	4.77E-04		RHO
	21.3	3.06E-05	2.24E-02	U	5.32E-02	5.45E-04		PNL
	21.6	--	--		1.54E-02	4.13E-04		RHO
	21.9	--	--		2.22E-02	5.29E-04		RHO
	23.2	--	--		2.04E-02	4.92E-04		RHO
	24.4	--	--		4.46E-02	7.09E-04		RHO
	24.7	2.59E-02	1.49E-02	U	1.70E-02	3.60E-04		PNL
	25.9	2.50E-03	8.78E-03	U	1.46E-04	4.23E-05	U	PNL
	26.8	--	--		1.72E-02	4.38E-04		RHO
	27.4	-1.35E-03	9.86E-03	U	1.80E-03	1.08E-04		PNL
	27.4	--	--		1.69E-02	6.47E-04		RHO
	27.7	--	--		2.02E-02	5.29E-04		RHO
	28.7	--	--		1.62E-02	6.53E-04		RHO
	29	--	--		1.44E-02	5.66E-04		RHO

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Table D-1. Radionuclide Concentrations in Sediments Beneath 216-Z-1A.* (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
299-W18-150	2.4	4.35E-01	0.00E+00	U	1.31E-01	8.88E-03		RHO
	2.9	2.73E+01	4.37E+00		7.47E-01	8.22E-03		RHO
	2.9	3.08E+00	3.07E-01		2.12E-01	5.84E-03		RHO
	4.0	4.36E+03	4.80E+01		7.24E+00	1.30E-02		RHO
	4.6	1.15E+03	2.41E+01		1.64E+00	5.91E-03		RHO
	4.7	5.30E+02	1.64E+01		1.08E+01	3.77E-02		RHO
	4.9	1.70E+00	2.55E-01		4.34E+00	1.48E-02		RHO
	5.3	3.16E+01	1.36E+00		1.42E+01	4.41E-02		RHO
	5.3	3.22E+02	1.42E+01		5.74E+00	2.98E-02		RHO
	5.6	--	--		5.52E+00	1.05E-02		RHO
	5.6	5.74E+02	1.78E+01		3.60E+01	6.84E-02		RHO
	6.1	6.53E+02	2.22E+01		4.59E+01	8.73E-02		RHO
	6.2	4.22E+01	1.60E+00		4.24E+01	7.21E-02		RHO
	6.4	3.26E+02	1.44E+01		1.81E+01	5.06E-02		RHO
	6.4	3.71E+02	4.08E+01		2.01E+02	6.42E-01		RHO
	6.7	1.11E+02	8.56E+00		1.16E+01	3.73E-02		RHO
	7.3	2.30E+02	3.45E+01		1.60E+02	5.76E-01		RHO
	7.5	8.59E+02	6.01E+01		3.68E+02	8.84E-01		RHO
	8.2	7.12E+01	6.90E+00		3.41E+00	2.01E-02		RHO
	9.1	1.24E+02	0.00E+00	U	4.30E+01	4.21E-01		RHO
	9.1	--	--		2.52E+00	1.67E-02		RHO
	9.4	1.29E+00	3.11E-01		8.06E+00	2.98E-02		RHO
	11.6	3.39E+00	4.40E-01		2.72E+01	4.90E-02		RHO
	11.7	3.01E+00	6.39E-01		3.65E+01	7.31E-02		RHO
	12.0	2.01E+00	5.03E-01		2.34E+01	5.85E-02		RHO
	12.3	2.40E+00	5.76E-01		2.56E+01	6.16E-02		RHO
	13	2.88E+00	0.00E+00	U	2.49E+01	6.48E-02		RHO
	13.3	2.14E+00	5.14E-01		2.05E+01	4.93E-02		RHO
	13.6	8.24E-01	0.00E+00	U	1.68E+01	4.37E-02		RHO
	14.2	7.65E-01	0.00E+00	U	2.04E+01	4.88E-02		RHO
	14.5	1.53E+00	0.00E+00	U	2.74E+01	6.02E-02		RHO
	21.2	1.76E-01	8.70E-02	U	1.01E+00	2.30E-03		PNL
	25	1.39E-01	5.40E-02	U	3.10E-01	1.26E-03		PNL
	26.1	-1.80E-01	1.10E-02	U	1.90E-03	1.08E-04		PNL
	26.5	1.50E-02	7.92E-03	U	1.32E-04	4.68E-05	U	PNL
	28.7	3.90E-02	4.20E-02	U	2.30E-01	1.10E-03		PNL

Table D-1. Radionuclide Concentrations in Sediments Beneath 216-Z-1A.* (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
	29.7	3.40E-02	2.20E-02	U	4.50E-02	4.86E-04		PNL
	34.1	-3.02E-03	6.03E-03	U	2.18E-04	4.36E-05		PNL
	34.7	1.03E-02	7.11E-03	U	1.66E-04	8.55E-05	U	PNL
	35.7	-1.00E-02	7.47E-03	U	-7.52E-05	3.15E-05	U	PNL
	36.6	1.33E-02	9.82E-03	U	4.00E-04	6.04E-05		PNL
	36.6	2.02E-02	5.67E-03		-1.48E-05	3.15E-05	U	PNL
	37.8	1.69E-02	8.86E-03	U	1.40E-05	3.92E-05	U	PNL
	37.8	0.00E+00	3.60E-06	U	0.00E+00	7.66E-06	U	LFE
	39	-6.01E-03	8.51E-03	U	-1.98E-05	3.33E-05	U	PNL
	39	5.41E-06	4.05E-06	U	7.03E-05	7.73E-06		LFE
299-W18-158	6.1	6.76E-03	0.00E+00	U	2.39E-05	0.00E+00	U	PNL
	13.1	7.39E-03	0.00E+00	U	1.04E-05	8.56E-06	U	PNL
	15.2	3.76E-02	2.97E-03		2.07E-03	2.70E-05		PNL
	19.8	7.03E-03	0.00E+00	U	2.34E-05	8.56E-06	U	PNL
	24.4	6.35E-03	0.00E+00	U	2.12E-05	8.11E-06	U	PNL
	28.3	4.55E-03	2.61E-03	U	7.66E-06	9.91E-06	U	PNL
299-W18-159	3.4	1.34E+02	2.41E+01		3.66E+01	6.00E-02		RHO
	3.4	3.05E+02	7.12E+00		5.45E+01	1.75E-01		PNL
	4.0	1.03E+03	7.46E+01		9.92E+01	1.30E-01		RHO
	4.7	3.24E+02	3.56E+01		6.32E+01	8.00E-02		RHO
	4.7	5.99E+02	1.30E+01		7.48E+01	2.90E-01		PNL
	5.5	4.82E+02	3.76E+01		7.43E+01	8.00E-02		RHO
	6.4	1.26E+03	9.83E+01		9.09E+01	1.80E-01		RHO
	7.2	5.31E+02	3.82E+01		6.48E+01	8.00E-02		RHO
	7.9	4.96E+02	3.92E+01		7.13E+01	8.00E-02		RHO
	8.7	4.80E+01	0.00E+00	U	2.09E+01	0.00E+00	U	RHO
	8.7	6.80E+00	1.50E+00		2.37E+01	3.65E-02		PNL
	9.8	4.80E+01	0.00E+00	U	2.31E+01	4.00E-02		RHO
	10.5	5.90E+01	0.00E+00	U	2.16E+01	4.00E-02		RHO
	11.3	4.50E+01	0.00E+00	U	3.65E+01	6.00E-02		RHO
	11.3	2.99E+01	3.65E+00		4.07E+01	1.25E-01		PNL
	12.0	3.70E+01	0.00E+00	U	3.03E+01	5.00E-02		RHO
	12.8	2.49E+02	2.74E+01		5.37E+01	6.00E-02		RHO
	12.8	3.82E+02	1.12E+01		6.78E+01	2.76E-01		PNL
	14.3	1.56E+02	1.22E+01		4.12E+02	4.60E-01		PNL
	14.5	2.29E+00	2.76E+00	U	2.67E+01	1.10E-01		PNL

Table D-1. Radionuclide Concentrations in Sediments Beneath 216-Z-1A.* (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
	14.6	5.50E-01	5.00E-02		2.80E-01	1.30E-02		PNL
	17.4	1.59E+02	7.92E+00		2.26E+02	3.11E-01		PNL
	17.8	-2.50E-01	1.97E+00	U	5.18E+00	8.80E-02		PNL
	18.6	1.03E+00	4.86E+00	U	3.08E+01	2.10E-01		PNL
	21.0	7.81E-03	6.90E-03	U	6.17E-04	5.85E-05		PNL
	22.9	6.48E-04	1.20E-02	U	4.90E-03	1.76E-04		PNL
	23.2	-3.91E-03	9.71E-03	U	3.65E-03	1.44E-04		PNL
	23.8	5.23E-03	1.01E-02	U	2.06E-03	1.12E-04		PNL
	23.8	2.21E-02	9.20E-03	U	1.27E-03	1.12E-04		PNL
	24.7	-2.20E-03	6.56E-03	U	1.10E-03	7.20E-05		PNL
	25.0	4.26E-03	8.09E-03	U	4.61E-03	1.40E-04		PNL
	25.0	1.40E-02	1.10E-02	U	5.71E-03	1.94E-04		PNL
	25.9	6.98E-03	3.02E-03	U	1.88E-03	3.60E-05		PNL
	27.0	4.90E-03	6.13E-03	U	1.26E-04	3.60E-05	U	PNL
	28.3	-6.00E-03	6.22E-03	U	8.10E-05	3.15E-05	U	PNL
	29.9	-2.30E-03	8.78E-03	U	-1.62E-05	2.59E-05	U	PNL
	29.9	1.83E-02	9.67E-03	U	-5.85E-06	3.15E-05	U	PNL
	31.4	-3.45E-03	7.20E-03	U	1.94E-04	4.50E-05		PNL
	33.8	-1.10E-02	8.60E-03	U	3.15E-05	3.15E-05	U	PNL
	35.4	7.52E-03	9.55E-03	U	1.80E-05	3.15E-05	U	PNL
	37.2	3.87E-03	7.30E-03	U	1.80E-05	3.60E-05	U	PNL
	39.6	1.02E-02	1.00E-02	U	5.00E-04	7.20E-05		PNL
299-W18-163	6.1	1.08E-03	6.71E-03	U	4.76E-05	3.24E-05	U	PNL
	7.6	3.22E-03	6.41E-03	U	-2.65E-05	2.61E-05	U	PNL
	11.0	4.77E-03	6.15E-03	U	4.60E-06	2.75E-05	U	PNL
	14.0	1.10E-02	5.72E-03	U	5.09E-03	9.01E-05		PNL
	15.1	4.30E-01	1.10E-01		1.58E+00	3.10E-02		PNL
	16.2	-2.40E-03	2.77E-03	U	3.24E-05	1.30E-05	U	PNL
	18.3	3.32E-03	7.14E-03	U	6.30E-05	3.69E-05	U	PNL
	19.8	4.50E-04	3.60E-03	U	1.17E-04	1.80E-05		PNL
	21.3	3.34E-03	8.34E-03	U	0.00E+00	3.65E-05	U	PNL
	25.9	1.11E-02	5.23E-03	U	2.25E-05	2.25E-05	U	PNL
	28.8	4.30E-03	8.11E-03	U	-4.45E-05	3.20E-05	U	PNL
	32.0	1.07E-02	9.85E-03	U	-5.90E-05	4.19E-05	U	PNL
	33.8	1.49E-05	3.58E-06		4.95E-06	5.40E-06	U	LFE
	35.1	0.00E+00	3.15E-06	U	0.00E+00	3.15E-06	U	LFE

Table D-1. Radionuclide Concentrations in Sediments Beneath 216-Z-1A.* (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
	36.6	-9.00E-04	4.90E-03	U	5.10E-05	2.20E-05	U	PNL
	36.6	4.82E-03	0.00E+00	U	4.50E-05	1.80E-05	U	PNL
	36.6	0.00E+00	2.25E-06	U	0.00E+00	3.15E-06	U	LFE
	37.9	0.00E+00	2.25E-06	U	0.00E+00	4.05E-06	U	LFE
	39.6	4.05E-06	2.47E-06	U	6.76E-06	4.12E-06	U	LFE
	41.1	1.71E-03	2.88E-03	U	1.04E-05	1.13E-05	U	PNL
	41.1	2.25E-06	2.90E-06	U	3.60E-06	3.31E-06	U	LFE
299-W18-164	3.0	-3.70E-04	2.00E-03	U	1.08E-05	8.36E-06	U	PNL
	3.0	4.05E-06	3.16E-06	U	0.00E+00	9.01E-06	U	LFE
	7.6	4.30E-03	6.60E-03	U	-1.76E-05	3.87E-05	U	PNL
	9.1	5.49E-03	2.59E-03	U	4.18E-06	1.00E-05	U	PNL
	9.1	5.41E-03	3.15E-03	U	4.05E-06	9.01E-06	U	PNL
	10.7	2.20E-01	0.00E+00	U	6.37E-02	0.00E+00	U	IRT
	10.8	4.86E+00	1.76E+00	U	9.50E+00	5.30E-02		PNL
	10.8	1.85E+00	7.56E-01	U	9.63E+00	2.38E+00		PNL
	10.8	1.03E+00	6.80E-01	U	9.91E+00	2.34E-02		PNL
	10.8	7.86E+00	3.11E+00	U	1.92E+01	4.70E-01		IRT
	15.2	-9.50E-04	2.30E-03	U	5.06E-01	8.06E-03		PNL
	16.8	2.40E-01	0.00E+00	U	5.38E-02	0.00E+00	U	IRT
	19.8	-1.86E-03	5.18E-03	U	-1.60E-06	2.29E-05	U	PNL
	19.8	2.40E-01	0.00E+00	U	6.09E-02	0.00E+00	U	IRT
	20.7	8.18E-01	3.45E-01	U	5.90E-01	4.89E-02		IRT
	21.3	6.17E+00	7.25E-02	U	1.36E+01	2.39E-02		PNL
	21.3	2.02E+01	3.30E+00		1.65E+01	9.55E-02		PNL
	21.3	1.76E+01	3.41E+00		1.83E+01	1.00E-01		PNL
	21.3	1.39E+01	3.39E+00		1.83E+01	1.00E-01		PNL
	21.3	9.50E+00	3.52E+00	U	1.91E+01	1.06E-01		PNL
	21.3	1.87E+01	3.45E+00		1.83E+01	1.00E-01		PNL
	21.3	6.94E+00	3.27E+00	U	1.80E+01	9.95E-02		PNL
	21.3	1.36E+01	3.28E+00		1.73E+01	9.82E-02		PNL
	21.3	1.54E+01	3.34E+00		1.69E+01	9.68E-02		PNL
	21.3	2.77E+01	3.86E+00		2.35E+01	1.14E-01		PNL
	21.3	6.40E+00	3.51E+00	U	1.94E+01	1.48E-01		PNL
	21.3	8.96E+00	2.49E+00		1.23E+01	1.02E-01		PNL
	21.3	6.75E+00	7.90E-01		1.36E+01	2.38E-02		PNL
	21.3	1.25E+00	4.02E-01	U	4.00E-01	5.70E-02		IRT

Table D-1. Radionuclide Concentrations in Sediments Beneath 216-Z-1A.* (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
	21.8	3.84E+01	6.26E+00		6.48E+01	1.93E-01		PNL
	21.8	4.59E+01	1.86E+00		6.04E+01	5.86E-02		PNL
	21.8	5.68E+01	5.32E+00		4.41E+01	4.93E-01		IRT
	21.8	1.24E+00	0.00E+00	U	2.54E+00	1.68E-01		IRT
	21.8	6.95E+00	1.46E+00		3.22E+00	2.09E-01		IRT
	21.8	7.36E+00	1.43E+00		3.44E+00	2.02E-01		IRT
	21.8	1.75E+00	1.43E+00	U	3.48E+00	2.02E-01		IRT
	22.1	6.37E+01	5.59E+00		3.51E+01	6.53E-01		IRT
	22.9	0.00E+00	2.10E+00	U	3.45E+00	6.12E-02		PNL
	22.9	5.00E-01	3.90E-01	U	3.56E+00	1.09E-02		PNL
	22.9	3.04E-01	1.40E-01	U	3.73E+00	4.95E-03		PNL
	22.9	9.87E+00	3.13E+00	U	1.22E+01	4.29E-01		IRT
	23.2	3.64E-01	1.47E-01	U	5.05E-02	0.00E+00	U	IRT
	24.4	3.36E-01	0.00E+00	U	1.03E-01	4.03E-02	U	IRT
	25.0	2.68E-02	2.27E-02	U	7.49E-02	5.99E-04		PNL
	25.0	3.35E-01	2.00E-01	U	7.30E-02	0.00E+00	U	IRT
	25.9	2.58E+00	3.55E+00	U	2.71E+01	1.11E-01		PNL
	25.9	6.70E+00	1.18E+00		2.94E+01	3.60E-02		PNL
	25.9	6.17E+00	1.08E+00		2.94E+01	3.60E-02		PNL
	25.9	1.56E+01	3.17E+00		1.69E+01	4.07E-01		IRT
	26.5	8.09E+01	1.03E+01		2.52E+02	4.35E-01		PNL
	27.1	1.17E+02	8.50E+00		1.59E+02	3.45E-01		PNL
	27.1	7.90E+01	1.25E+01		1.08E+02	1.07E+00		IRT
	28.0	1.74E+01	2.30E+00		2.64E+01	6.84E-02		PNL
	28.0	1.76E+01	1.17E+00		2.91E+01	3.49E-02		PNL
	28.0	1.62E+01	1.07E+00		2.91E+01	3.51E-02		PNL
	30.6	3.01E+00	1.81E+00	U	6.37E+00	2.50E-01		IRT
	32.0	-6.30E-04	3.25E-03	U	9.59E-04	3.51E-05		PNL
	32.0	9.91E-06	8.13E-06	U	0.00E+00	4.50E-06	U	LFE
	32.6	2.70E-01	0.00E+00	U	6.00E-02	0.00E+00	U	IRT
	35.1	1.80E-06	1.44E-04	U	0.00E+00	4.50E-06	U	LFE
	36.6	1.05E-03	2.07E-03	U	1.08E-05	8.68E-06	U	PNL
	36.6	1.04E-03	2.07E-03	U	9.91E-06	8.11E-06		PNL
	36.6	9.91E-06	2.97E-06	U	0.00E+00	4.50E-06		LFE
	39.0	6.26E-03	3.02E-03	U	-1.08E-05	1.26E-05		PNL
	39.6	0.00E+00	6.31E-06	U	1.44E-05	2.59E-06		LFE

Table D-1. Radionuclide Concentrations in Sediments Beneath 216-Z-1A.* (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
	41.1	0.00E+00	5.41E-06	U	3.65E-05	1.05E-05		LFE
	42.7	9.34E-03	2.64E-02	U	-4.36E-05	1.14E-04		PNL
	42.7	5.41E-06	2.54E-06	U	6.31E-06	3.98E-06		LFE
	44.3	0.00E+00	4.95E-06	U	1.26E-05	1.12E-05		LFE
	45.7	-4.72E-03	8.19E-03	U	4.77E-05	3.47E-05		PNL
	45.7	0.00E+00	2.70E-06	U	3.47E-05	5.90E-06		LFE
	46.8	2.25E-06	1.40E-06	U	1.76E-05	7.53E-06		LFE
299-W18-165	4.6	1.33E-03	2.39E-03	U	1.71E-05	1.80E-05	U	PNL
	6.1	4.21E-01	0.00E+00	U	8.45E-02	0.00E+00	U	IRT
	7.9	0.00E+00	8.45E-03	U	1.08E-05	2.56E-05	U	PNL
	9.1	-1.20E-02	9.45E-03	U	4.41E-05	3.74E-05	U	PNL
	9.1	2.81E-01	0.00E+00	U	6.17E-02	0.00E+00	U	IRT
	10.7	2.19E-01	0.00E+00	U	6.48E-02	0.00E+00	U	IRT
	14.3	1.15E-02	7.96E-03	U	0.00E+00	2.97E-05	U	PNL
	16.2	4.15E+00	9.59E-02		4.86E-01	1.67E-03		PNL
	16.2	6.19E+00	6.12E-01		5.12E-01	7.95E-02		IRT
	17.4	3.13E+00	9.73E-02		2.21E-01	1.44E-03		PNL
	17.4	3.53E-01	1.88E-01	U	5.96E-02	0.00E+00	U	IRT
	18.4	2.74E-01	2.52E-02		2.41E-02	3.69E-04		PNL
	19.8	2.45E-01	0.00E+00	U	6.78E-02	0.00E+00	U	IRT
	21.3	8.06E-03	8.54E-03	U	-1.00E-05	3.46E-05	U	PNL
	23.2	1.58E-01	0.00E+00	U	4.54E-02	0.00E+00	U	IRT
	24.4	0.00E+00	8.45E-03	U	2.16E-05	3.15E-05	U	PNL
	26.1	2.11E-01	0.00E+00	U	5.42E-02	0.00E+00	U	IRT
	27.4	5.75E-03	8.68E-03	U	5.90E-06	3.46E-05	U	PNL
	27.4	2.83E-01	0.00E+00	U	5.86E-02	0.00E+00	U	IRT
	27.7	1.96E+02	3.84E+01		2.87E+02	9.96E-01		PNL
	27.7	1.00E+00	0.00E+00	U	1.86E+00	1.30E-01		IRT
	28.3	4.82E+02	5.77E+01		7.93E+02	1.65E+00		PNL
	29.3	2.48E+00	6.63E-01		7.85E-01	1.40E-02		PNL
	29.9	6.98E+00	1.90E+00		1.14E+01	6.98E-02		PNL
	32.5	3.03E-01	2.95E-01	U	9.73E-02	0.00E+00	U	IRT
	33.8	0.00E+00	9.63E-03	U	5.40E-06	4.36E-06	U	PNL
	33.8	4.50E-06	2.79E-06	U	5.86E-05	1.29E-05		LFE
	35.1	0.00E+00	3.60E-06	U	5.14E-05	9.25E-06		LFE
	37.5	5.75E-03	9.96E-03	U	1.35E-04	4.50E-05	U	PNL

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Table D-1. Radionuclide Concentrations in Sediments Beneath 216-Z-1A.* (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
	40.5	2.70E-06	3.94E-06	U	3.60E-06	3.46E-06	U	LFE
	41.1	0.00E+00	1.40E-02	U	-5.90E-06	2.84E-05	U	PNL
	41.1	0.00E+00	2.70E-06	U	0.00E+00	8.11E-06	U	LFE
299-W18-166	1.5	1.35E-05	5.00E-06	U	5.86E-06	4.57E-06	U	LFE
	6.1	1.30E-02	9.14E-03	U	7.67E-05	2.84E-05	U	PNL
	13.6	0.00E+00	9.63E-03	U	7.02E-05	3.15E-05	U	PNL
	15.2	3.44E-03	6.03E-03	U	0.00E+00	3.70E-05	U	PNL
	15.2	2.51E-01	0.00E+00	U	5.25E-02	0.00E+00	U	IRT
	16.8	0.00E+00	9.50E-03	U	4.32E-05	3.60E-05	U	PNL
	18.3	-2.21E-03	8.73E-03	U	5.30E-05	4.14E-05	U	PNL
	18.3	3.39E-01	0.00E+00	U	1.51E-01	4.20E-02		IRT
	19.8	8.06E-03	7.70E-03	U	-7.08E-05	3.28E-05	U	PNL
	19.8	4.97E-01	0.00E+00	U	8.74E-02	0.00E+00	U	IRT
	20.3	0.00E+00	8.78E-03	U	-3.54E-05	3.46E-05	U	PNL
	22.3	1.00E-01	8.06E-03		2.70E-05	3.74E-05	U	PNL
	24.1	3.69E-01	0.00E+00	U	9.12E-02	0.00E+00	U	IRT
	25.9	3.91E-01	0.00E+00	U	9.11E-02	4.98E-02	U	IRT
	27.7	6.90E-03	8.91E-03	U	-1.18E-05	3.46E-05	U	PNL
	28.3	1.11E+02	2.54E+01		1.58E+02	7.39E-01		PNL
	28.3	7.22E+01	7.39E+00		5.77E+01	7.35E-01		IRT
	29.1	5.90E-01	0.00E+00	U	1.42E-01	6.64E-02	U	IRT
	29.9	-6.00E-03	1.10E-02	U	5.95E-03	1.67E-04		PNL
	30.5	1.05E+01	1.53E+00		9.50E+00	4.86E-02		PNL
	31.7	-1.07E-03	1.80E-02	U	3.14E-02	4.23E-04		PNL
	33.5	2.03E-01	0.00E+00	U	5.22E-02	0.00E+00	U	IRT
	34.9	4.10E-03	7.40E-03	U	2.93E-05	3.69E-03	U	PNL
	36.4	2.25E-06	1.31E-06	U	0.00E+00	6.31E-06	U	LFE
	38.1	2.18E-02	9.68E-03	U	1.17E-04	0.00E+00	U	PNL
	38.1	8.56E-06	3.51E-06	U	3.42E-05	6.84E-06		LFE
	40.2	6.76E-06	4.06E-06	U	1.22E-05	7.32E-06	U	LFE
	41.8	3.00E-02	8.92E-03		-5.85E-06	3.60E-05	U	PNL
	41.8	4.05E-06	3.32E-06	U	0.00E+00	6.31E-06	U	LFE
299-W18-167	6.1	-1.26E-04	2.53E-03	U	1.48E-05	1.09E-05	U	PNL
	13.4	5.37E-03	7.36E-03	U	4.14E-05	3.69E-05	U	PNL
	14.8	-8.33E-03	5.65E-03	U	-1.81E-05	2.92E-05	U	PNL
	16.2	-3.43E-03	3.46E-03	U	2.74E-05	1.22E-05	U	PNL

Table D-1. Radionuclide Concentrations in Sediments Beneath 216-Z-1A.* (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
	16.2	2.30E-01	0.00E+00	U	7.70E-02	0.00E+00	U	IRT
	16.8	8.79E+02	4.39E+01		4.15E+02	3.05E+00		IRT
	17.1	2.09E+00	7.51E-01	U	4.31E-01	1.10E-01		IRT
	17.7	1.80E+00	5.80E-01	U	4.10E+00	2.48E-02		PNL
	17.7	3.25E-01	1.05E-01	U	4.82E+00	1.38E-01		IRT
	18.3	-4.40E-02	1.60E-02	U	3.00E-02	3.96E-04		PNL
	18.3	1.57E-01	0.00E+00	U	3.81E-02	0.00E+00	U	IRT
	19.5	3.36E-01	0.00E+00	U	7.03E-02	4.31E-02	U	IRT
	21.6	-8.60E-04	6.67E-03	U	6.75E-05	3.42E-05	U	PNL
	23.2	4.34E-03	6.96E-03	U	7.88E-05	4.05E-05	U	PNL
	31.1	3.15E-06	4.06E-06	U	4.95E-05	9.41E-06		LFE
	31.4	-4.32E-03	8.53E-03	U	1.76E-05	3.96E-05	U	PNL
	36.9	2.70E-06	3.48E-06	U	5.86E-06	7.03E-06	U	LFE
	39.0	-1.18E-03	9.32E-03	U	8.86E-05	3.87E-05	U	PNL
	40.8	0.00E+00	1.80E-06	U	0.00E+00	4.50E-06	U	LFE
299-W18-168	8.2	-4.30E-03	7.44E-03	U	5.85E-06	2.97E-05	U	PNL
	13.7	1.08E-03	8.11E-03	U	5.85E-06	3.28E-05	U	PNL
	14.9	1.15E+01	7.36E+00	U	1.92E+01	2.80E-01		PNL
	16.2	-2.33E-03	3.39E-03	U	6.58E-03	6.48E-05		PNL
	17.7	1.36E+02	1.30E+01		1.94E+02	5.20E-01		PNL
	19.8	-1.26E-04	4.24E-03	U	1.79E-03	1.04E-04		PNL
	22.6	1.17E-04	1.05E-02	U	1.24E-04	4.23E-05	U	PNL
	22.9	2.45E-03	2.92E-03	U	7.38E-04	2.43E-05		PNL
	25.9	3.82E-04	2.86E-03	U	1.04E-04	1.53E-05		PNL
	29.0	-9.90E-05	9.72E-03	U	8.28E-05	5.13E-05	U	PNL
	33.5	0.00E+00	1.80E-06	U	1.17E-05	9.59E-06	U	LFE
	34.7	7.21E-06	2.60E-06	U	3.42E-05	6.84E-06		LFE
	36.3	1.67E-05	8.85E-06	U	1.26E-05	4.54E-06	U	LFE
	38.6	8.56E-06	4.71E-06	U	1.46E-03	7.30E-05		LFE
299-W18-169	7.0	0.00E+00	7.02E-03	U	-1.40E-05	3.06E-05	U	PNL
	7.0	1.25E-04	1.13E-05		1.35E-06	1.80E-06	U	LFE
	10.1	-1.10E-02	7.89E-03	U	4.72E-05	3.24E-05	U	PNL
	11.0	1.39E+01	3.01E+00		2.04E+01	1.20E-01		PNL
	11.4	6.84E+01	4.90E+00		5.49E+01	1.40E-01		PNL
	13.3	6.41E-01	3.26E-01	U	2.21E+02	1.20E-02		PNL
	14.3	1.35E-03	7.11E-03	U	1.09E-03	7.42E-05		PNL

Table D-1. Radionuclide Concentrations in Sediments Beneath 216-Z-1A.* (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
	16.3	1.26E-03	2.53E-03	U	4.00E-06	1.12E-05	U	PNL
	18.3	2.12E-03	9.00E-03	U	2.97E-05	3.87E-05	U	PNL
	20.1	-1.42E-03	5.49E-03	U	6.39E-05	2.70E-05	U	PNL
	20.1	0.00E+00	3.60E-06	U	1.04E-05	4.47E-06	U	LFE
	22.4	-6.00E-03	5.93E-03	U	4.77E-05	2.74E-05	U	PNL
	26.2	5.58E-03	1.02E-02	U	7.29E-04	7.34E-05		PNL
	27.4	-1.40E-02	1.15E-02	U	2.06E-03	1.11E-04		PNL
	27.7	3.22E-03	5.98E-03	U	1.77E-05	4.91E-05	U	PNL
	28.3	5.09E-03	5.49E-03	U	4.50E-05	3.20E-05	U	PNL
	28.3	7.66E-06	4.67E-06	U	4.46E-05	7.14E-06		LFE
	29.3	7.85E-03	1.15E-02	U	2.00E-04	5.88E-05		PNL
	31.7	-3.38E-03	5.76E-03	U	1.94E-05	3.46E-05	U	PNL
	31.7	2.70E-06	2.38E-06	U	2.97E-05	1.13E-05	U	LFE
	33.5	1.29E-03	6.39E-03	U	-3.80E-06	2.97E-05	U	PNL
	33.5	0.00E+00	1.80E-06	U	1.80E-05	4.68E-06		LFE
	35.1	-2.62E-03	6.75E-03	U	1.89E-05	2.79E-05	U	PNL
	35.1	0.00E+00	4.50E-06	U	6.89E-05	5.42E-05	U	LFE
	36.6	1.29E-03	7.02E-03	U	-1.48E-05	3.28E-05	U	PNL
	36.6	0.00E+00	3.60E-06	U	1.26E-05	9.77E-06	U	LFE
	40.2	6.44E-04	6.84E-03	U	-5.67E-05	3.28E-05	U	PNL
	40.2	2.70E-06	2.54E-06	U	-7.66E-06	8.58E-06	U	LFE
299-W18-171	13.1	1.01E-02	1.06E-02	U	7.34E-05	3.74E-05	U	PNL
	16.2	-6.20E-03	1.05E-02	U	3.92E-05	3.78E-05	U	PNL
	19.8	0.00E+00	1.10E-02	U	-4.41E-05	4.00E-05	U	PNL
	20.4	5.13E-03	1.17E-02	U	1.44E-05	4.28E-05	U	PNL
	21.0	-7.30E-03	9.68E-03	U	6.34E-05	4.00E-05	U	PNL
	22.9	-5.31E-05	2.30E-03	U	-8.10E-06	9.00E-06	U	PNL
	22.9	0.00E+00	2.70E-06	U	4.50E-05	6.75E-06		LFE
	25.9	-4.20E-03	8.04E-03	U	-4.14E-05	3.89E-05	U	PNL
	26.5	7.52E-03	8.39E-03	U	-2.34E-05	3.54E-05	U	PNL
	26.8	-6.20E-03	1.07E-02	U	1.84E-03	1.08E-04		PNL
	27.7	0.00E+00	7.60E-03	U	1.59E-04	4.50E-05	U	PNL
	27.7	1.35E-06	1.35E-06	U	4.19E-04	1.68E-05		LFE
	29.0	1.60E-03	8.56E-03	U	4.77E-04	5.63E-05		PNL
	29.0	3.02E-03	7.39E-03	U	5.22E-04	5.40E-05		PNL
	29.0	2.25E-06	2.16E-06	U	5.18E-04	2.59E-05		LFE

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Table D-1. Radionuclide Concentrations in Sediments Beneath 216-Z-1A.* (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
	38.3	-1.18E-02	9.76E-03	U	8.10E-05	4.05E-05	U	PNL
	38.3	1.80E-06	2.16E-06	U	5.95E-05	6.55E-06		LFE
	40.2	9.04E-03	7.56E-03	U	-3.38E-05	3.60E-05	U	PNL
	40.2	5.86E-06	2.58E-06	U	6.31E-06	2.90E-06	U	LFE
	41.5	-9.70E-03	8.64E-03	U	9.54E-05	3.60E-05	U	PNL
	41.5	0.00E+00	2.25E-06	U	1.80E-05	4.32E-06		LFE
299-W18-172	22.9	1.08E-02	8.06E-03	U	9.00E-06	3.60E-05	U	PNL
	22.9	0.00E 00	1.35E-06	U	0.00E 00	2.70E-06	U	LFE
	35.4	-1.23E-03	6.16E-03	U	-5.63E-05	3.20E-05	U	PNL
	35.4	1.35E-06	3.22E-06	U	7.66E-06	1.45E-05	U	LFE
	36.9	-6.12E-03	7.47E-03	U	1.80E-05	3.20E-05	U	PNL
	36.9	7.21E-06	4.04E-06	U	1.80E-06	2.45E-06	U	LFE
	38.1	3.22E-03	9.18E-03	U	-4.72E-05	4.50E-05	U	PNL
	38.1	3.60E-06	2.56E-06	U	2.25E-06	3.29E-06	U	LFE
	39.9	1.43E-02	8.19E-03	U	-9.90E-06	3.60E-05	U	PNL
	39.9	8.11E-06	3.24E-06	U	3.60E-06	3.46E-06	U	LFE
	40.8	1.00E-01	3.15E-03		2.20E-06	1.40E-05	U	PNL
	40.8	-4.05E-06	2.71E-06	U	4.50E-06	3.20E-06	U	LFE
299-W18-173	5.0	2.40E+00	4.50E-01		3.89E+00	1.00E-02		PNL
	5.5	4.80E-03	1.85E-02	U	3.53E-02	4.28E-04		PNL
	6.4	5.36E-03	9.88E-03	U	1.62E-03	9.45E-05		PNL
	7.8	-4.60E-03	1.01E-02	U	8.60E-04	7.65E-05		PNL
	8.8	2.40E+01	7.70E+00	U	7.38E+01	3.30E-01		PNL
	10.5	3.20E+01	1.20E+01	U	2.00E+02	5.50E-01		PNL
	12.5	9.30E-02	2.30E-02	U	4.20E-02	4.95E-04		PNL
	14.0	5.08E+01	7.40E+00		2.09E+02	3.00E-01		PNL
	14.6	1.00E-01	7.60E-02	U	7.20E-01	1.94E-03		PNL
	15.5	5.35E+00	2.24E-01		7.36E+00	6.17E-03		PNL
299-W18-174	4.9	1.46E-01	5.50E-02	U	3.90E-01	5.13E-04		PNL
	6.4	1.80E-02	9.80E-03	U	2.58E-03	1.22E-04		PNL
	9.1	-4.40E-03	8.80E-03	U	3.90E-05	3.82E-05	U	PNL
	10.7	3.38E+01	9.50E+00		8.29E+01	3.06E-01		PNL
	11.6	3.05E-01	7.48E-01	U	1.09E+01	2.40E-02		PNL
	13.4	3.58E-01	5.60E-02		4.90E-01	1.59E-03		PNL
	14.2	1.92E+02	1.60E+01		2.24E+02	5.00E-01		PNL
	14.9	2.83E-01	4.70E-02		2.08E-01	1.13E-03		PNL

Table D-1. Radionuclide Concentrations in Sediments Beneath 216-Z-1A.* (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
299-W18-175	5.3	1.24E+02	5.86E+00		5.23E-01	1.71E-01		PNL
	7.5	1.16E+02	6.17E+00		6.13E+01	1.86E-01		PNL
	8.7	3.47E+01	6.20E+00		1.29E+02	2.70E-01		PNL
	10.2	4.72E+00	4.72E+00	U	7.97E+01	1.80E-01		PNL
	11.4	8.60E+01	1.80E+00		2.04E+01	3.50E-02		PNL
	12.5	9.78E+01	8.02E+00		5.27E+01	2.40E-01		PNL
	12.6	1.09E+02	1.70E+00		8.20E+00	2.40E-02		PNL
	15.7	9.68E+01	5.70E+00		9.00E+01	2.00E-01		PNL
	16.8	2.76E+02	1.28E+01		1.30E+02	3.80E-01		PNL
	17.7	5.09E+01	6.20E+00		1.22E+02	2.30E-01		PNL
	18.3	7.38E+01	7.74E+00		1.37E+02	3.20E-01		PNL
	19.2	1.95E+01	5.09E+00		2.67E+01	1.70E-01		PNL
	19.8	2.02E+00	6.20E-01		4.10E+00	1.50E-02		PNL
	21.6	3.20E-03	1.57E-02	U	3.99E-02	4.00E-04		PNL
	23.5	2.84E+01	5.13E+00		9.18E+01	2.00E-01		PNL
	24.1	-3.90E-02	5.44E-03	U	4.86E-01	1.58E-03		PNL
	25.8	8.68E-02	4.77E-02	U	3.12E-01	1.40E-03		PNL
	28.3	6.08E+00	3.40E+00	U	3.82E+01	1.30E-01		PNL
	29.0	2.75E+02	1.61E+01		2.27E+02	5.00E-01		PNL
	29.3	1.70E+01	8.42E+00	U	6.98E+00	2.80E-01		PNL
	30.5	-1.44E-02	1.03E-02	U	4.77E-03	1.65E-04		PNL
	32.0	-3.84E-03	8.00E-03	U	7.52E-04	7.65E-05		PNL
	34.1	-4.77E-03	9.75E-03	U	1.30E-03	9.45E-05		PNL
	37.8	1.29E-02	8.99E-03	U	9.18E-04	8.55E-05		PNL
	37.8	-2.18E-03	1.02E-02	U	7.43E-04	7.39E-05		PNL
	39.6	1.90E-02	9.98E-03	U	2.79E-04	4.95E-05		PNL
	39.6	3.11E-03	1.01E-02	U	2.49E-04	5.50E-05		PNL

*Results from RHO-ST-17, *Distribution of Plutonium and Americium Beneath the 216-Z-1A Crib: A Status Report.*

-- = not analyzed.

IRT = Intelcom Radiation Technology Laboratory.

LFE = LFE Environmental Analysis Laboratories.

nCi/g = nanocuries per gram.

PNL = Pacific Northwest Laboratory.

Q = data qualifier.

RHO = Rockwell Hanford Operations.

sigma = counting standard deviations.

U = undetected. Value listed represents upper limit of the 99% confidence interval around the concentration determined.

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