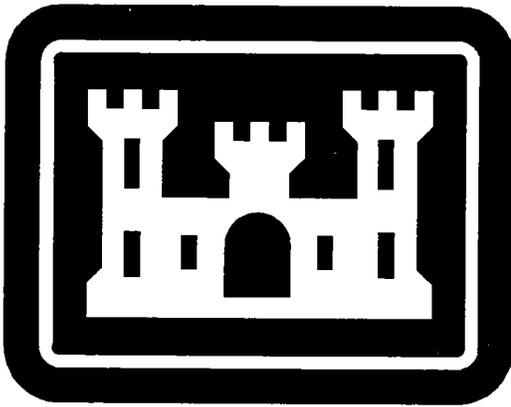


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JEB FORT STORY, VA
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ANALYTICAL RESULTS PRELIMINARY ASSESSMENT/SITE INVESTIGATION LIGHTER AIR
CUSHION VEHICLE 30 TON (LACV-30) MAINTENANCE FACILITY WETLANDS AREA AND
SPECIFICATIONS FOR UNGERGROUND STORAGE TANK REMOVAL ATLANTICA STREET
GAS STATION FORT STORY VA

6/1/1991

JAMES M. MONTGOMERY CONSULTING ENGINEERS



**U.S. Army Corps of Engineers
Missouri River Division,
Omaha District**

Analytical Results Report for the
**Preliminary Assessment/Site Investigation
LACV-30 Maintenance Facility Wetlands Area
Site Investigation /Decision Plans and Specifications
for Underground Storage Tank Removal
Atlantic Street Gas Station**

Fort Story, Virginia
June 1991

JMM James M. Montgomery
Consulting Engineers Inc.



**ARCHITECT-ENGINEER
ANALYTICAL RESULTS REPORT**

**Fort Story
Virginia Beach, Virginia**

**Preliminary Assessment/Site Investigation
at LACV-30 Wetlands Area**

**Site Investigation/Decision Plans and Specifications
for
Underground Storage Tank Removal
at Atlantic Street Gas Station**

Contract No. DACW45-89-D-0501

Prepared for:

**U.S. Army Corps of Engineers
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ACRONYMS AND ABBREVIATIONS

A-E	Architect-Engineer
AA	Atomic Absorption
ARR	Analytical Results Report
ASTM	American Society for Testing and Materials
ATGAS	Atlantic Street Gas Station
BNA	Base/Neutral/Acid Extractable
BTU	British Thermal Unit
CDAP	Chemical Data Acquisition Plan
COC	Chain of Custody
CR	Cooler Receipt
D	Duplicate Sample
DEH	Directorate of Engineering and Housing
DI	Distilled Water
DO	Delivery Order
DQO	Data Quality Objective
EPA	Environmental Protection Agency
GC	Gas Chromatograph
GFAA	Graphite Furnace Atomic Absorption
ICAP	Inductively Coupled Argon Plasma
IRP	Installation Restoration Program
IW	Installation Water
JMM	James M. Montgomery, Consulting Engineers, Inc.
LACV-30	LACV-30 Maintenance Facility Wetlands Area
LCS	Laboratory Control Sample
MRD	Missouri River Division
MRL	Method Reporting Level
MS	Matrix Spike
MSD	Matrix Spike Duplicate
MW	Monitoring Well Groundwater Sample
NTU	Nephelometric Turbidity Unit
PA/SI	Preliminary Assessment/Site Investigation
PARCC	Precision, Accuracy, Representativeness, Completeness, Comparability
PCB	Polychlorinated Biphenyl
QA	Quality Assurance
QC	Quality Control
QCSR	Quality Control Summary Report
R	Resampled
RB	Rinsate Blank
RPD	Relative Percent Difference
S	Split Sample
SB	Soil Boring Soil Sample
SD	Sediment Sample
SI/DPS	Site Investigation/Decision Plans and Specifications
SW	Surface Water Sample
TB	Trip Blank
TFH-H	Total Fuel Hydrocarbons - Heavy Fraction
TFH-L	Total Fuel Hydrocarbons - Light Fraction
TK	Tank Sample
TOX	Total Organic Halides
USACE	United States Army Corps of Engineers
USAEHA	United States Army Environmental Hygiene Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

The U.S. Army Corps of Engineers (USACE) contracted James M. Montgomery, Consulting Engineers, Inc. (JMM) to perform a Preliminary Assessment/Site Investigation (PA/SI) for Site 11, LACV-30 Maintenance Facility Wetlands Area (LACV-30 Site) and a Site Investigation/Decision Plans and Specifications (SI/DPS) for Underground Storage Tank (UST) Removal at the Atlantic Street Gas Station (ATGAS Site). Both sites are located at Fort Story, Virginia. This *Analytical Results Report (ARR)* presents the project analytical data and provides a detailed review of the analytical quality control data obtained during the PA/SI and SI/DPS conducted by JMM. During the PA/SI field activities at the LACV-30 Site, soil, sediment, groundwater and surface water samples were collected and analyzed. The analyses performed included: volatile organic compounds, base/neutral/acid extractable compounds, pesticides and polychlorinated biphenyls, metals and total fuel hydrocarbons-heavy fraction. During the SI/DPS field activities, UST structures were located using geophysical methods and samples from the accessible USTs were collected and analyzed. The analyses of UST samples included: total organic halides, heat content (for product phase only), total fuel hydrocarbons-light fraction (for aqueous phase samples only), arsenic, lead, cadmium, chromium, flash point (for product phase samples only), and moisture content (for product phase samples only). All sampling activities conducted in support of the PA/SI and SI/DPS projects were documented in JMM's *Quality Control Summary Report (QCSR)* (JMM, 1991).

Analytical data from the quality control (QC) samples were evaluated on the basis of data quality objectives (DQOs) established for the project. The DQOs are expressed in terms of precision, accuracy, representativeness, completeness and comparability (PARCC). Precision was evaluated using the results of the matrix spike/matrix spike duplicate (MS/MSD) sample pairs, laboratory control sample (LCS) pairs and field duplicate sample pairs. Accuracy was evaluated using the analytical results from MS, MSD, LCS and surrogate spike samples. The representativeness of the analytical data was evaluated by the results of method blank, trip blank and rinsate blank samples. Completeness was determined by holding time criteria and the acceptability of data following review. Comparability was maximized by using standard analytical methods and units of measurement. The results of the QC sample evaluation are used to determine the acceptability of the associated field data for use in future project phases.

A summary of the QC data review in terms of precision, accuracy, representativeness, completeness and comparability is presented in Table ES-1. Based on the results of the QC sample analyses, the precision and accuracy goal of the project was achieved. Results from the method blank, trip blank and rinsate blank samples indicate that the data for the LACV-30 and ATGAS projects are representative of environmental conditions at the site. The detection of chloroform and copper in SLCVMW1401 may be considered as suspect results, since these compounds were detected in the associated rinsate blank sample at approximately the same concentrations. The degree of completeness for acceptable data, which is based on QC sample results and holding time criteria, was greater than the 90 percent goal for the project. Standard methods of analysis and units of measure were used throughout the project to maximize data comparability.

Overall, the DQOs outlined in the *Chemical Data Acquisition Plan* (JMM, 1990) were achieved. The project data are considered acceptable and can be used with a high degree of confidence to evaluate environmental conditions at the LACV-30 and ATGAS Sites.

TABLE ES-1

SUMMARY OF QC RESULTS WITH RESPECT TO PARCC CRITERIA^(a)

	Total Number of Analyses ^(b)	Precision	Accuracy	Representativeness (Qualitative)	Completeness (Percent of Acceptable Data)	Comparability (Degree of Confidence)
Chemical Analyses						
Volatile Organic Compounds	24	Acceptable	Acceptable	Representative	92	High
Base/Neutral/Acid Extractable Compounds	29	Acceptable	Acceptable	Representative	100	High
Pesticides/Polychlorinated Biphenyls	24	Acceptable	Acceptable	Representative	100	High
Total Metals	32	Acceptable	Acceptable	Representative	100	High
Dissolved Metals	17	Acceptable	Acceptable	Representative	100	High
Short List Metals	4	Acceptable	Acceptable	Representative	100	High
Total Fuel Hydrocarbons-Heavy Fraction	36	Acceptable	Acceptable	Representative	97	High
Total Fuel Hydrocarbons-Light Fraction	2	Acceptable	Acceptable	Representative	100	High
Total Organic Halides	4	Acceptable	Acceptable	Representative	100	High
TOTAL	172				98	

(a) Criteria for evaluating the QC results and detailed evaluation of those results were presented in Section 3.

(b) Including QC Samples (i.e., field duplicates, trip blanks, rinsate blanks and MS/MSD samples).

1.0 INTRODUCTION

James M. Montgomery, Consulting Engineers, Inc. (JMM) is the prime Architect-Engineer (A-E) contracted by the U.S. Army Corps of Engineers (USACE) under Delivery Order Numbers 0014 and 0015 of Contract DACW45-89-D-0501. The work authorized under Delivery Order 0014 consists of a Preliminary Assessment/Site Investigation (PA/SI) for Site 11, LACV-30 Maintenance Facility Wetlands Area (LACV-30 Site). The work authorized under Delivery Order 0015 consists of a Site Investigation/Decision Plans and Specifications (SI/DPS) project for Underground Storage Tank (UST) Removal at the Atlantic Street Gas Station (ATGAS Site). The LACV-30 and ATGAS Sites are located at Fort Story, Virginia, and the two projects are being performed for the Directorate of Engineering and Housing (DEH) under the USACE Installation Restoration Program (IRP).

The LACV-30 Site consists of two nearly identical maintenance facilities, PN-43 to the southwest and PN-49 to the northwest, which are located adjacent to one another. Soil, sediment, groundwater and surface water samples were collected during LACV-30 sampling activities to address possible environmental concerns at the PN-43 maintenance facility, PN-49 maintenance facility, bordering wetland areas, and an isolated area along the beach which receives surface runoff discharges from the LACV-30 Site.

The samples collected in support of the LACV-30 PA/SI project are used to:

- confirm the presence or absence of significant contamination in site soils, sediments, groundwater and surface waters;
- assess the potential for contaminant migration into the surrounding wetland areas;
- evaluate the effectiveness of existing oil/water separation and transfer systems to manage stormflow runoff; and
- define future investigations or other actions required.

The ATGAS Site consists of five to eight suspected Underground Storage Tanks (USTs). JMM performed a geophysical survey at the ATGAS Site and identified five USTs. JMM intended to sample the five USTs through the vent pipe or portholes of each UST, but only three USTs were accessible by these means for sampling. A single phase (i.e., aqueous or product only) of material was detected in the three accessible USTs. An aqueous phase was present in one UST and a product phase was present in the other two USTs. A sample was collected from each of the three USTs (one aqueous and two product) and submitted to the appropriate laboratories for analysis. The remaining two USTs, which were not accessible through the portholes, were not sampled.

The samples collected in support of the ATGAS SI/DPS project are used to:

- Characterize the UST contents for disposal purposes.
- Prepare Decision Plans and Specifications for UST removal.

1.1 REPORT OBJECTIVES AND ORGANIZATION

The objectives of this *Analytical Results Report (ARR)* are to present the analytical data and to evaluate whether the analytical data quality objectives (DQOs) of the investigations have been met. The DQOs, which were outlined in the *Chemical Data Acquisition Plan (CDAP)* (JMM, 1990), are statements which specify the quality of data required to meet the goals of the site investigation and support decisions made during future phases of the LACV-30 and ATGAS projects. The term

"quality of data" refers to the level of uncertainty associated with the analytical or field sampling activities. The acceptability of the field sampling activities with respect to field DQOs was presented in the *Quality Control Summary Report (QCSR)* (JMM, 1991). This *ARR* addresses analytical DQOs.

This report is organized into four sections. A description of the LACV-30 and ATGAS projects is provided in Section 1. A presentation of the LACV-30 and ATGAS analytical data is included in Section 2. Section 3 presents the results of the QC sample analyses, which are used to review the quality of the reported analytical data. Data quality is expressed in terms of precision, accuracy, representativeness, completeness and comparability (PARCC). Finally, Section 4 presents a summary of the PARCC criteria for each analysis and offers conclusions with respect to data quality.

1.2 ANALYTICAL DATA QUALITY OBJECTIVES

As previously mentioned, data quality is expressed in terms of PARCC. Each element of the PARCC criteria is discussed below.

Analytical precision is a measure of the laboratory's ability to reproduce a measurement and is evaluated based on the results of the duplicate samples. Duplicate samples are taken from the same source and analyzed under identical conditions. A relative percent difference (RPD) is calculated between the original sample results, which may be a field sample, matrix spike sample or laboratory control sample (LCS); and the replicate of the original sample (i.e., field or QC duplicate sample). The RPD between matrix spike/matrix spike duplicate (MS/MSD) samples or LCS pairs is commonly used to evaluate analytical precision. The field duplicate sample pairs evaluate the combined effect of analytical and sampling precision. Poor precision may be attributed to factors such as poor instrument performance, inconsistent application of method protocols, sample heterogeneity, and/or matrix problems.

The accuracy data provide an indication of bias, where the reported data may be an overestimation or underestimation of actual concentrations. The accuracy of the sample results is measured using LCS, MS/MSD and surrogate spike samples. The percent recovery for each analyte spiked in a MS, MSD or surrogate sample is compared with the acceptance criteria specified by the analytical method. The LCS spike recoveries are compared to limits derived from a statistical performance of the laboratory over a specific period of time.

Representativeness is a qualitative parameter which expresses the degree to which the sample data represent a characteristic of a population, parameter variations at a sampling point or an environmental condition. The representativeness of the analytical results is evaluated by reviewing the QC results of blank samples. The following analytical blanks were used during the sample analysis period: rinsate blanks, trip blanks and method blanks. Positive detection of compounds in the blank samples identify compounds that possibly may have been introduced to the associated field samples during sample collection, transport or analysis. The results of sample blanks, therefore, provide an estimate of potential bias due to contamination that is not associated with the field sample.

Analytical completeness is defined as the number of acceptable analyses with respect to the total number of analyses performed. Completeness is evaluated to determine if an acceptable level of data was obtained so that a valid scientific site assessment can be completed. The completeness criterion is also evaluated based on the number of analyses that are performed within the holding times specified in the *CDAP* (JMM, 1990).

The comparability of the analytical process is a qualitative assessment to determine if the analytical results reported are equivalent to data obtained from similar analyses. To ensure analytical

comparability, it is important to use standard analytical methods throughout the analytical period and to identify project samples requiring dilution.

The laboratory generates QC data over the period in which each analytical batch is processed to evaluate the PARCC criteria and provide a means to monitor performance during analysis of individual samples. Samples within an analytical batch are analyzed with the same method sequence and the same lots of reagents and manipulations common to each sample within the batch (EPA, 1986). The QC samples associated with each analytical batch include laboratory control samples and/or matrix spike/matrix spike duplicate samples as well as method blank samples. The results of QC parameters such as surrogate spikes, holding times and sample dilutions are specific to the individual samples within the batch and are reviewed to monitor the sample preparation and analysis process.

1.3 SAMPLE NUMBER IDENTIFICATION SYSTEM

In order to differentiate between field sample and QC sample results, a summary of the sample identification number system is required. Each field or QC sample is assigned a unique identifier to distinguish the origin of the sample point. The first four digits of the identifier specifies the installation at which the sample was collected (i.e., "S" for Fort Story) and the site designation (i.e., "LCV" for LACV-30 samples or "ATG" for ATGAS samples).

The subsequent portion of the sample identifier specifies the matrix type and the sample number. A summary of designators for sample matrix types assigned to project samples is presented in Table 1-1. The sample matrix type is followed by the designation of the delivery order number under which the sample was collected and the assigned sample number. For example, SB1401 is the first soil boring collected for the LACV-30 project, which was authorized under Delivery Order 0014. The sample number for ATGAS sampling locations start with "1501" to associate the sample with Delivery Order 0015. The five USTs located at the ATGAS Site were numbered consecutively from TK1501 to TK1505.

The next part of the sample identifier is used for soil and sediment samples. An identifier was required to distinguish between grab samples, which represent a discrete depth at which the sample was collected; and composite samples, which are collected at multiple sample depths within the same boring. Samples collected from three depths and composited into a single sample are identified with a "(C3)" notation following the sample number. Otherwise, the sample depth is reported within the parentheses. For example, the sample SLCVSB1401(C3) was a soil sample collected from three depths and composited into a single sample, whereas SLCVSB1408(5) was a soil sample collected at a depth of 5 feet.

For samples collected from UST systems, the sample number requires an "AQ" or "PS" designation to differentiate between aqueous and product samples, respectively. For example, sample SATGTK1501(PS) is a product sample of UST contents from TK1501 located at the ATGAS Site.

The subsequent portion of the sample identifier provides information specific to quality assurance/quality control (QA/QC) samples. The collection of field duplicate, field split, rinsate blanks, trip blanks, matrix spike, and matrix spike duplicate samples were identified as "D," "S," "RB," "TB," "MS," and "MSD," respectively. Duplicate and split samples were collected concurrently at the field sampling location. Duplicate samples are QC samples submitted to Montgomery Laboratories for analysis, whereas split samples are QA samples submitted to the project QA laboratory, Missouri River Division Laboratory, for analysis. The samples SLCVMW1401D and SLCVMW1401S are the duplicate and split samples, respectively, associated with field sample SLCVMW1401. Finally, a recollected and reanalyzed sample is designated by "(R)" at the end of the sample identifier.

TABLE 1-1
SUMMARY OF MATRIX IDENTIFIERS

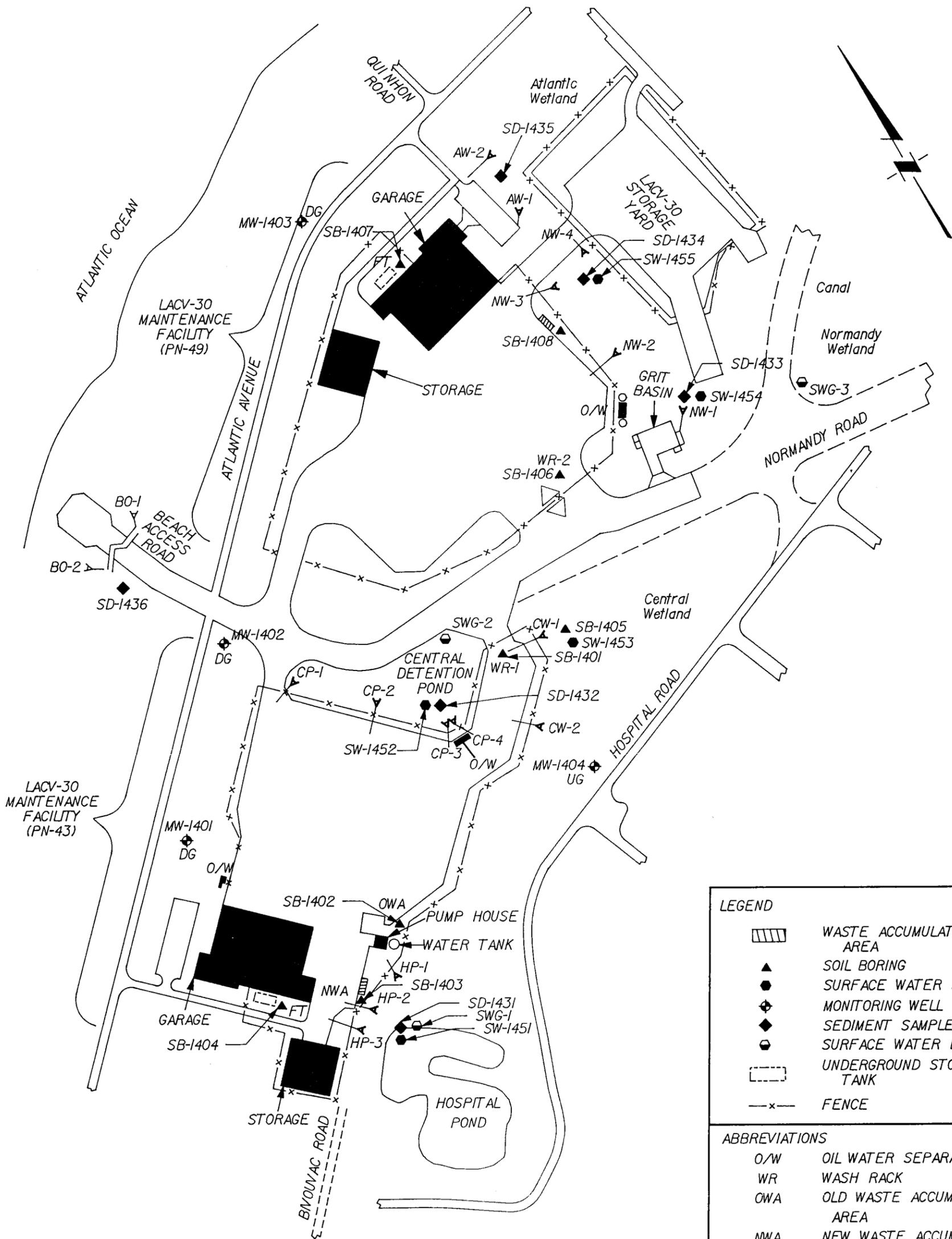
Identifier	Type of Sample
SB	Soil sample collected from a soil boring
SD	Sediment sample
MW	Groundwater sample from a monitoring well
SW	Surface water sample
TK	UST contents sample
DI	Distilled water used as source water
IW	Water sample collected from Installation tap water for use as source water

2.0 ANALYTICAL SAMPLING RESULTS

Soil, sediment, groundwater and surface water samples were collected at the LACV-30 Maintenance Facility Wetlands Area (LACV-30 Site) and underground storage tank (UST) content samples were collected at the Atlantic Street Gas Station (ATGAS) Site. The location of the LACV-30 and ATGAS sampling locations are presented in Figure 2-1 and 2-2, respectively. During the field sampling activities, tap water and distilled water were used to decontaminate sampling equipment. A tap water sample and a distilled water sample were submitted for chemical analyses to determine if target compounds were present. These samples are referenced as "source water" samples. Chemical analyses of samples were conducted by Montgomery Laboratories, Inc. and non-chemical analyses of UST contents were performed by Robb & Moody, Inc.

With the exception of total fuel hydrocarbons-heavy fraction (TFH-H) analyses at the LACV-30 Site and total fuel hydrocarbons-light fraction (TFH-L) and non-chemical analyses at the ATGAS Site, the analytical methods employed are described in *Test Methods for Evaluating Solid Waste*, EPA SW-846 (EPA, 1986). The TFH-H and TFH-L analyses are a modified version of EPA Method 8015 and described in the State of California's *Leaking Underground Fuel Tank Manual -- Guidelines for Site Assessment, Cleanup, and Underground Storage Tank Closure* (State of California, 1989). The analytical procedures for total organic halides (TOX) are described in Standard Methods (APHA, AWWA, WPCF, 1989). The analysis of moisture content and heat content (i.e., BTU) in product phase UST samples utilized American Society for Testing and Materials (ASTM) procedures. The analytical methods employed for analysis of chemical samples collected for the LACV-30 and ATGAS projects are presented in Table 2-1.

Analytical results for the LACV-30 and ATGAS field samples and associated quality control samples are presented in Tables 2-2 through 2-27. The analytical results are presented in boldface if a compound was detected at a concentration greater than the quantitation limit. Otherwise the analytical result is presented as less than the reported quantitation limit. Tables 2-2 through 2-4 present volatile organic compound (VOC) results for soil, groundwater and source water samples, respectively. Tables 2-5 through 2-8 present base/neutral and acid extractable (BNA) results for soil, sediment, groundwater and source water samples, respectively. Tables 2-9 through 2-12 present pesticide/polychlorinated biphenyl (pesticide/PCB) results for soil, sediment, UST, and source water samples. Tables 2-13 through 2-18 present metals results for soil, sediment, groundwater, surface water, UST and source water samples, respectively. Tables 2-19 through 2-23 present TFH-H results for soil, sediment, groundwater, surface water and source water samples, respectively. The analytical results for TFH-L, total organic halides (TOX) and non-chemical analyses (i.e., British Thermal Unit (BTU), moisture and flash point) of UST content samples are presented in Tables 2-24, 2-25 and 2-26, respectively. The field measurements recorded during groundwater sampling activities (i.e., conductivity, temperature, pH and turbidity) are presented in Table 2-27.

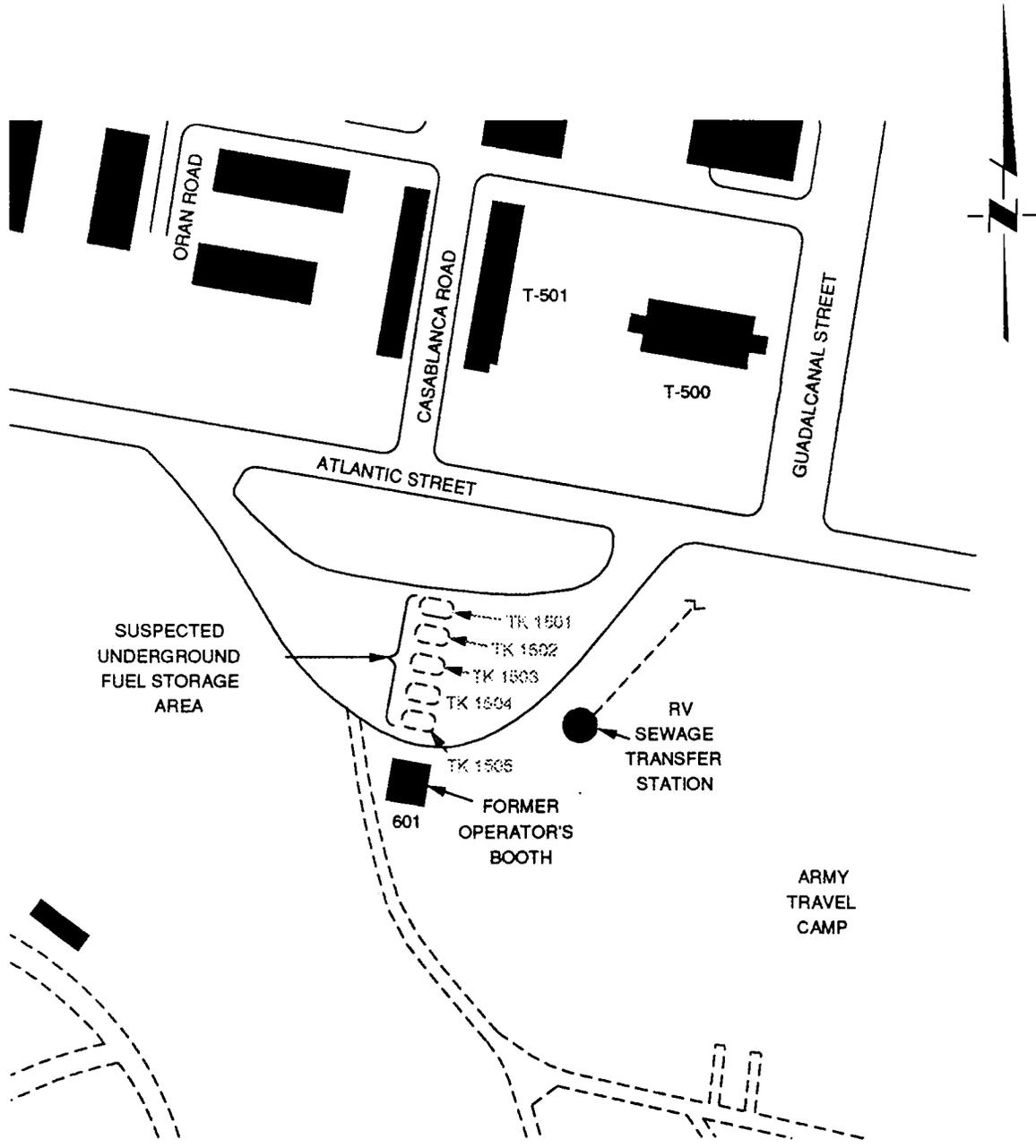


LEGEND	
	WASTE ACCUMULATION AREA
	SOIL BORING
	SURFACE WATER SAMPLE
	MONITORING WELL
	SEDIMENT SAMPLE
	SURFACE WATER LEVEL STAFF
	UNDERGROUND STORAGE TANK
	FENCE

ABBREVIATIONS	
O/W	OIL WATER SEPARATOR
WR	WASH RACK
OWA	OLD WASTE ACCUMULATION AREA
NWA	NEW WASTE ACCUMULATION AREA
UG	UPGRADIENT
DG	DOWNGRADIENT
HP-1 - HP-3	HOSPITAL POND OUTFALLS
CP-1 - CP-4	CENTRAL DETENTION POND OUTFALLS
CW-1, CW-2	CENTRAL 'WETLAND' OUTFALLS
NW-1 - NW-4	NORMANDY 'WETLAND' OUTFALLS
AW-1, AW-2	ATLANTIC 'WETLAND' OUTFALLS
BO-1, BO-2	BEACH OUTFALLS

SCALE
1" = 260'

PA/SI, Ft. Story, VA	
Sampling Locations LACV-30 Site	
James M. Montgomery Consulting Engineers, Inc.	Figure 2-1



SI/DPS, Ft. Story, VA

**Sampling Locations
Atlantic Street Gas Station**

James M. Montgomery
Consulting Engineers, Inc.



Figure 2-2

Scale
1" = 100'

LEGEND

FUELING ISLAND

TABLE 2-1
ANALYTICAL METHOD REFERENCES

Analyte	Soil Matrix Method Number	Water Matrix Method Number	Product Matrix Method Number	Reference
VOCs	8240	8240	—	SW-846 ^(a)
BNAs	3550/8270	3510/8270	—	SW-846
Pesticide/PCBs	3550/8080	3510/8080	3510/8080	SW-846
TFH-L, TFH-H	8015 (mod.)	8015 (mod.)	8015 (mod.)	CA LUFT ^(b)
TOX	—	5320	Dohrmann	Standard Methods ^(c)
BTU	—	—	D240	ASTM ^(d)
Flash Point	—	—	1010	SW-846
Moisture	—	—	D1744	ASTM
Total and Dissolved Metals				
Antimony	3050/6010	3005/6010	—	SW-846
Arsenic	3050/6010	7060	3050/6010	SW-846
Barium	3050/6010	3005/6010	—	SW-846
Beryllium	3050/6010	3005/6010	—	SW-846
Cadmium	3050/6010	3005/6010	3005/6010	SW-846
Chromium, Total	3050/6010	3005/6010	3005/6010	SW-846
Copper	3050/6010	3005/6010	—	SW-846
Lead	3050/6010	7421	3005/6010	SW-846
Mercury	7471	7470	—	SW-846
Nickel	3050/6010	3005/6010	—	SW-846
Selenium	3050/6010	7740	—	SW-846
Silver	3050/6010	3005/6010	—	SW-846
Thallium	3050/6010	7841	—	SW-846
Zinc	3050/6010	3005/6010	—	SW-846

- (a) U.S. Environmental Protection Agency (EPA), 1986. *Test Methods for Evaluating Solid Waste (SW-846): Physical/Chemical Methods*. Third Edition. Office of Solid Waste.
- (b) State of California, 1989. *Leaking Underground Fuel Tank Manual -- Guidelines for Site Assessment, Cleanup, and Underground Storage Tank Closure*. LUFT Task Force.
- (c) American Public Health Association, American Water Works Association and Water Pollution Control Federation, 1989. *Standard Methods for the Examination of Water and Wastewater Treatment*. 17th Edition.
- (d) American Society for Testing and Materials, 1990.

TABLE 2-2
SUMMARY OF VOC ANALYTICAL RESULTS FOR SOIL SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)			
		SLCVSB1401(0)	SLCVSB1402(10)	SLCVSB1403(0)	SLCVSB1404(5)
VOLATILE PRIORITY POLLUTANTS					
Acrolein	0.025	< 0.025	< 0.025	< 0.025	< 0.025
Acrylonitrile	0.025	< 0.025	< 0.025	< 0.025	< 0.025
Benzene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon Tetrachloride	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroethane	0.025	< 0.025	< 0.025	< 0.025	< 0.025
2-Chloroethylvinylether	0.025	< 0.025	< 0.025	< 0.025	< 0.025
Chloroform	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dichlorobromomethane	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-Dichloroethane	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichloroethane	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-Dichloroethene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichloropropane	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Methyl Bromide	0.025	< 0.025	< 0.025	< 0.025	< 0.025
Methyl Chloride	0.025	< 0.025	< 0.025	< 0.025	< 0.025
Methylene Chloride	0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1,2,2-Tetrachloroethane	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	0.01	0.03	< 0.01	< 0.01	< 0.01
1,1,1-Trichloroethane	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-Trichloroethane	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Vinyl Chloride	0.025	< 0.025	< 0.025	< 0.025	< 0.025
trans-1,3-Dichloropropene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-Dichloropropene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,2-Dichloroethene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,2-Dichloroethene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichlorofluoromethane	0.025	< 0.025	< 0.025	< 0.025	< 0.025
m,p-Xylenes	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
HAZARDOUS SUBSTANCES COMPOUNDS					
Acetone	0.25	< 0.25	< 0.25	< 0.25	< 0.25
2-Butanone	0.025	< 0.025	< 0.025	< 0.025	< 0.025
Carbon disulfide	0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Hexanone	0.025	< 0.025	< 0.025	< 0.025	< 0.025
4-Methyl-2-Pentanone	0.025	< 0.025	< 0.025	< 0.025	< 0.025
Styrene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrahydrofuran	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Vinyl Acetate	0.10	< 0.10	< 0.10	< 0.10	< 0.10
o-Xylene	0.01	< 0.01	< 0.01	< 0.01	< 0.01

TABLE 2-2
(Continued)

SUMMARY OF VOC ANALYTICAL RESULTS FOR SOIL SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)			
		SLCVSB1405(0)	SLCVSB1406(0)	SLCVSB1407(5)	SLCVSB1408(5)
VOLATILE PRIORITY POLLUTANTS					
Acrolein	0.025	< 0.025	< 0.025	< 0.025	< 0.025
Acrylonitrile	0.025	< 0.025	< 0.025	< 0.025	< 0.025
Benzene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon Tetrachloride	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroethane	0.025	< 0.025	< 0.025	< 0.025	< 0.025
2-Chloroethylvinylether	0.025	< 0.025	< 0.025	< 0.025	< 0.025
Chloroform	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dichlorobromomethane	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-Dichloroethane	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichloroethane	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-Dichloroethene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichloropropane	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Methyl Bromide	0.025	< 0.025	< 0.025	< 0.025	< 0.025
Methyl Chloride	0.025	< 0.025	< 0.025	< 0.025	< 0.025
Methylene Chloride	0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1,2,2-Tetrachloroethane	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	0.01	< 0.01	0.2	< 0.01	< 0.01
1,1,1-Trichloroethane	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-Trichloroethane	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Vinyl Chloride	0.025	< 0.025	< 0.025	< 0.025	< 0.025
trans-1,3-Dichloropropene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-Dichloropropene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,2-Dichloroethene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,2-Dichloroethene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichlorofluoromethane	0.025	< 0.025	< 0.025	< 0.025	< 0.025
m,p-Xylenes	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
HAZARDOUS SUBSTANCES COMPOUNDS					
Acetone	0.25	< 0.25	< 0.25	< 0.25	< 0.25
2-Butanone	0.025	< 0.025	< 0.025	< 0.025	< 0.025
Carbon disulfide	0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Hexanone	0.025	< 0.025	< 0.025	< 0.025	< 0.025
4-Methyl-2-Pentanone	0.025	< 0.025	< 0.025	< 0.025	< 0.025
Styrene	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrahydrofuran	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Vinyl Acetate	0.10	< 0.10	< 0.10	< 0.10	< 0.10
o-Xylene	0.01	< 0.01	< 0.01	< 0.01	< 0.01

TABLE 2-3

SUMMARY OF VOC ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

Compound	Detection Limit ($\mu\text{g/l}$)	Sample ID and Analytical Results ($\mu\text{g/l}$)		
		SLCVMW1401	SLCVMW1401 D	SLCVMW1401 RB
VOLATILE PRIORITY POLLUTANTS				
Acrolein	1.0	< 1.0	< 1.0	< 5.0
Acrylonitrile	1.0	< 1.0	< 1.0	< 5.0
Benzene	0.5	< 0.5	< 0.5	< 2.5
Bromoform	0.5	< 0.5	< 0.5	< 2.5
Carbon Tetrachloride	0.5	< 0.5	< 0.5	< 2.5
Chlorobenzene	0.5	< 0.5	< 0.5	< 2.5
Dibromochloromethane	0.5	< 0.5	< 0.5	< 2.5
Chloroethane	1.0	< 1.0	< 1.0	< 5.0
2-Chloroethylvinylether	1.0	< 1.0	< 1.0	< 5.0
Chloroform	0.5	2.6	2.4	49
Dichlorobromomethane	0.5	< 0.5	< 0.5	11
1,1-Dichloroethane	0.5	< 0.5	< 0.5	< 2.5
1,2-Dichloroethane	0.5	< 0.5	< 0.5	< 2.5
1,1-Dichloroethene	0.5	< 0.5	< 0.5	< 2.5
1,2-Dichloropropane	0.5	< 0.5	< 0.5	< 2.5
Ethylbenzene	0.5	< 0.5	< 0.5	< 2.5
Methyl Bromide	1.0	< 1.0	< 1.0	< 5.0
Methyl Chloride	1.0	< 1.0	< 1.0	< 5.0
Methylene Chloride	5.0	< 5.0	< 5.0	< 25
1,1,2,2-Tetrachloroethane	0.5	< 0.5	< 0.5	< 2.5
Tetrachloroethene	0.5	< 0.5	< 0.5	< 2.5
Toluene	0.5	< 0.5	< 0.5	< 2.5
1,1,1-Trichloroethane	0.5	< 0.5	< 0.5	< 2.5
1,1,2-Trichloroethane	0.5	< 0.5	< 0.5	< 2.5
Trichloroethene	0.5	< 0.5	< 0.5	< 2.5
Vinyl Chloride	1.0	< 1.0	< 1.0	< 5.0
trans-1,3-Dichloropropene	0.5	< 0.5	< 0.5	< 2.5
cis-1,3-Dichloropropene	0.5	< 0.5	< 0.5	< 2.5
trans-1,2-Dichloroethene	0.5	< 0.5	< 0.5	< 2.5
cis-1,2-Dichloroethene	0.5	< 0.5	< 0.5	< 2.5
Trichlorofluoromethane	1.0	< 1.0	< 1.0	< 5.0
m,p-Xylenes	0.5	< 0.5	< 0.5	< 2.5
1,2-Dichlorobenzene	0.5	< 0.5	< 0.5	< 2.5
1,3-Dichlorobenzene	0.5	< 0.5	< 0.5	< 2.5
1,4-Dichlorobenzene	0.5	< 0.5	< 0.5	< 2.5
HAZARDOUS SUBSTANCES COMPOUNDS				
Acetone	10	< 10	< 10	< 50
2-Butanone	1.0	< 1.0	< 1.0	< 5.0
Carbon disulfide	0.5	0.6	< 0.5	< 2.5
2-Hexanone	1.0	< 1.0	< 1.0	< 5.0
4-Methyl-2-Pentanone	1.0	< 1.0	< 1.0	< 5.0
Styrene	0.5	< 0.5	< 0.5	< 2.5
Tetrahydrofuran	10	< 10	< 10	< 50
Vinyl Acetate	5.0	< 5.0	< 5.0	< 25
o-Xylene	0.5	< 0.5	< 0.5	< 2.5

TABLE 2-3
(Continued)

SUMMARY OF VOC ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

Compound	Detection Limit (µg/l)	Sample ID and Analytical Results (µg/l)		
		SLCVMW1401 TB	SLCVMW1402	SLCVMW1403
VOLATILE PRIORITY POLLUTANTS				
Acrolein	1.0	< 1.0	< 1.0	< 1.0
Acrylonitrile	1.0	< 1.0	< 1.0	< 1.0
Benzene	0.5	< 0.5	< 0.5	1.0
Bromoform	0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	< 0.5	< 0.5	< 0.5
Chloroethane	1.0	< 1.0	< 1.0	< 1.0
2-Chloroethylvinylether	1.0	< 1.0	< 1.0	< 1.0
Chloroform	0.5	< 0.5	< 0.5	< 0.5
Dichlorobromomethane	0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	0.5	< 0.5	< 0.5	2.4
1,2-Dichloroethane	0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	0.5	< 0.5	< 0.5	1.4
1,2-Dichloropropane	0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	< 0.5	< 0.5	< 0.5
Methyl Bromide	1.0	< 1.0	< 1.0	< 1.0
Methyl Chloride	1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride	5.0	< 5.0	< 5.0	< 5.0
1,1,2,2-Tetrachloroethane	0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	< 0.5	< 0.5	< 0.5
Vinyl Chloride	1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	0.5	< 0.5	< 0.5	< 0.5
trans-1,2-Dichloroethene	0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	1.0	< 1.0	< 1.0	< 1.0
m,p-Xylenes	0.5	< 0.5	< 0.5	0.50
1,2-Dichlorobenzene	0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	0.5	< 0.5	< 0.5	< 0.5
HAZARDOUS SUBSTANCES COMPOUNDS				
Acetone	10	< 10	< 10	< 10
2-Butanone	1.0	< 1.0	< 1.0	< 1.0
Carbon disulfide	0.5	< 0.5	< 0.5	< 0.5
2-Hexanone	1.0	< 1.0	< 1.0	< 1.0
4-Methyl-2-Pentanone	1.0	< 1.0	< 1.0	< 1.0
Styrene	0.5	< 0.5	< 0.5	< 0.5
Tetrahydrofuran	10	< 10	< 10	< 10
Vinyl Acetate	5.0	< 5.0	< 5.0	< 5.0
o-Xylene	0.5	< 0.5	< 0.5	0.80

TABLE 2-3
(Continued)

SUMMARY OF VOC ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

Compound	Detection Limit (µg/l)	Sample ID and Analytical Results (µg/l)			
		SLCVMW1403 TB	SLCVMW1404	SLCVMW1404 TB	
VOLATILE PRIORITY POLLUTANTS					
Acrolein	1.0	< 1.0	< 1.0	< 1.0	
Acrylonitrile	1.0	< 1.0	< 1.0	< 1.0	
Benzene	0.5	< 0.5	< 0.5	< 0.5	
Bromoform	0.5	< 0.5	< 0.5	< 0.5	
Carbon Tetrachloride	0.5	< 0.5	< 0.5	< 0.5	
Chlorobenzene	0.5	< 0.5	< 0.5	< 0.5	
Dibromochloromethane	0.5	< 0.5	< 0.5	< 0.5	
Chloroethane	1.0	< 1.0	< 1.0	< 1.0	
2-Chloroethylvinylether	1.0	< 1.0	< 1.0	< 1.0	
Chloroform	0.5	< 0.5	< 0.5	< 0.5	
Dichlorobromomethane	0.5	< 0.5	< 0.5	< 0.5	
1,1-Dichloroethane	0.5	< 0.5	< 0.5	< 0.5	
1,2-Dichloroethane	0.5	< 0.5	< 0.5	< 0.5	
1,1-Dichloroethene	0.5	< 0.5	< 0.5	< 0.5	
1,2-Dichloropropane	0.5	< 0.5	< 0.5	< 0.5	
Ethylbenzene	0.5	< 0.5	< 0.5	< 0.5	
Methyl Bromide	1.0	< 1.0	< 1.0	< 1.0	
Methyl Chloride	1.0	< 1.0	< 1.0	< 1.0	
Methylene Chloride	5.0	< 5.0	< 5.0	< 5.0	
1,1,2,2-Tetrachloroethane	0.5	< 0.5	< 0.5	< 0.5	
Tetrachloroethene	0.5	< 0.5	< 0.5	< 0.5	
Toluene	0.5	< 0.5	< 0.5	< 0.5	1.2
1,1,1-Trichloroethane	0.5	< 0.5	< 0.5	< 0.5	
1,1,2-Trichloroethane	0.5	< 0.5	< 0.5	< 0.5	
Trichloroethene	0.5	< 0.5	< 0.5	< 0.5	
Vinyl Chloride	1.0	< 1.0	< 1.0	< 1.0	
trans-1,3-Dichloropropene	0.5	< 0.5	< 0.5	< 0.5	
cis-1,3-Dichloropropene	0.5	< 0.5	< 0.5	< 0.5	
trans-1,2-Dichloroethene	0.5	< 0.5	< 0.5	< 0.5	
cis-1,2-Dichloroethene	0.5	< 0.5	< 0.5	< 0.5	
Trichlorofluoromethane	1.0	< 1.0	< 1.0	< 1.0	
m,p-Xylenes	0.5	< 0.5	< 0.5	< 0.5	
1,2-Dichlorobenzene	0.5	< 0.5	< 0.5	< 0.5	
1,3-Dichlorobenzene	0.5	< 0.5	< 0.5	< 0.5	
1,4-Dichlorobenzene	0.5	< 0.5	< 0.5	< 0.5	
HAZARDOUS SUBSTANCES COMPOUNDS					
Acetone	10	< 10	< 10	< 10	
2-Butanone	1.0	< 1.0	< 1.0	< 1.0	9.6
Carbon disulfide	0.5	< 0.5	< 0.5	< 0.5	
2-Hexanone	1.0	< 1.0	< 1.0	< 1.0	
4-Methyl-2-Pentanone	1.0	< 1.0	< 1.0	< 1.0	
Styrene	0.5	< 0.5	< 0.5	< 0.5	
Tetrahydrofuran	10	< 10	< 10	< 10	
Vinyl Acetate	5.0	< 5.0	< 5.0	< 5.0	
o-Xylene	0.5	< 0.5	< 0.5	< 0.5	

TABLE 2-4
SUMMARY OF VOC ANALYTICAL RESULTS FOR SOURCE WATER SAMPLES

Compound	Detection Limit (µg/l)	Sample ID and Analytical Results(µg/l)	
		SLCVDI	SLCVIW
VOLATILE PRIORITY POLLUTANTS			
Acrolein	1.0	< 10	< 10
Acrylonitrile	1.0	< 10	< 10
Benzene	0.5	< 5.0	< 5.0
Bromoform	0.5	< 5.0	< 5.0
Carbon Tetrachloride	0.5	< 5.0	< 5.0
Chlorobenzene	0.5	< 5.0	< 5.0
Dibromochloromethane	0.5	< 5.0	< 5.0
Chloroethane	1.0	< 10	< 10
2-Chloroethylvinylether	1.0	< 10	< 10
Chloroform	0.5	68	74
Dichlorobromomethane	0.5	14	13
1,1-Dichloroethane	0.5	< 5.0	< 5.0
1,2-Dichloroethane	0.5	< 5.0	< 5.0
1,1-Dichloroethene	0.5	< 5.0	< 5.0
1,2-Dichloropropane	0.5	< 5.0	< 5.0
Ethylbenzene	0.5	< 5.0	< 5.0
Methyl Bromide	1.0	< 10	< 10
Methyl Chloride	1.0	< 10	< 10
Methylene Chloride	5.0	< 50	< 50
1,1,2,2-Tetrachloroethane	0.5	< 5.0	< 5.0
Tetrachloroethene	0.5	< 5.0	< 5.0
Toluene	0.5	< 5.0	< 5.0
1,1,1-Trichloroethane	0.5	< 5.0	< 5.0
1,1,2-Trichloroethane	0.5	< 5.0	< 5.0
Trichloroethene	0.5	< 5.0	< 5.0
Vinyl Chloride	1.0	< 10	< 10
trans-1,3-Dichloropropene	0.5	< 5.0	< 5.0
cis-1,3-Dichloropropene	0.5	< 5.0	< 5.0
trans-1,2-Dichloroethene	0.5	< 5.0	< 5.0
cis-1,2-Dichloroethene	0.5	< 5.0	< 5.0
Trichlorofluoromethane	1.0	< 10	< 10
m,p-Xylenes	0.5	< 5.0	< 5.0
1,2-Dichlorobenzene	0.5	< 5.0	< 5.0
1,3-Dichlorobenzene	0.5	< 5.0	< 5.0
1,4-Dichlorobenzene	0.5	< 5.0	< 5.0
HAZARDOUS SUBSTANCES COMPOUNDS			
Acetone	10	< 100	< 100
2-Butanone	1.0	< 10	< 10
Carbon disulfide	0.5	< 5.0	< 5.0
2-Hexanone	1.0	< 10	< 10
4-Methyl-2-Pentanone	1.0	< 10	< 10
Styrene	0.5	< 5.0	< 5.0
Tetrahydrofuran	10	< 100	< 100
Vinyl Acetate	5.0	< 50	< 50
o-Xylene	0.5	< 5.0	< 5.0

TABLE 2-5
SUMMARY OF BNA ANALYTICAL RESULTS FOR SOIL SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)			
		SLCVSB1401(C3)	SLCVSB1402(C3)	SLCVSB1403(C3)	SLCVSB1404(C3)
BASE/NEUTRAL EXTRACTABLE-PRIORITY POLLUTANTS					
Acenaphthene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Acenaphthylene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Anthracene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzidine	10	< 10	< 10	< 10	< 10
Benzo(a)anthracene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzo(a)pyrene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzo(g,h,i)perylene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzo(b)fluoranthene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzo(k)fluoranthene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
bis(2-Chloroethoxy)methane	2.0	< 2.0	< 2.0	< 2.0	< 2.0
bis(2-Chloroethyl)ether	2.0	< 2.0	< 2.0	< 2.0	< 2.0
bis(2-Chloroisopropyl)ether	2.0	< 2.0	< 2.0	< 2.0	< 2.0
bis(2-Ethylhexyl)phthalate	4.0	< 4.0	< 4.0	< 4.0	< 4.0
4-Bromophenylphenylether	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzylphthalate	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chloronaphthalene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorophenylphenylether	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chrysene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibenzo(a,h)anthracene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
3,3'-Dichlorobenzidine	10	< 10	< 10	< 10	< 10
Diethylphthalate	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dimethylphthalate	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Di-n-butylphthalate	2.0	< 2.0	< 2.0	< 2.0	< 2.0
2,4-Dinitrotoluene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,6-Dinitrotoluene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Di-n-octylphthalate	2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,2-Diphenylhydrazine	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Fluoranthene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Fluorene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Hexachlorocyclopentadiene	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Hexachloroethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Indeno(1,2,3-c,d)pyrene	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Isophorone	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Nitrobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodi-N-propylamine	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodiphenylamine	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenanthrene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Pyrene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0

TABLE 2-5
(Continued)

SUMMARY OF BNA ANALYTICAL RESULTS FOR SOIL SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)			
		SLCVSB1401(C3)	SLCVSB1402(C3)	SLCVSB1403(C3)	SLCVSB1404(C3)
ACID EXTRACTABLE PRIORITY POLLUTANTS					
2-Chlorophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4-Dichlorophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4-Dimethylphenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4,6-Dinitro-o-cresol	10	< 10	< 10	< 10	< 10
2,4-Dinitrophenol	10	< 10	< 10	< 10	< 10
2-Nitrophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Nitrophenol	2.0	< 2.0	< 2.0	< 2.0	< 2.0
p-Chloro-m-cresol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Pentachlorophenol	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Phenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4,6-Trichlorophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
HAZARDOUS SUBSTANCES COMPOUNDS					
Aniline	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzyl Alcohol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Methylphenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Methylphenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzoic Acid	10	< 10	< 10	< 10	< 10
4-Chloroaniline	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Methylnaphthalene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibenzofuran	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Nitroaniline	2.0	< 2.0	< 2.0	< 2.0	< 2.0
3-Nitroaniline	4.0	< 4.0	< 4.0	< 4.0	< 4.0
4-Nitroaniline	4.0	< 4.0	< 4.0	< 4.0	< 4.0
2,4,5-Trichlorophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0

TABLE 2-5
(Continued)

SUMMARY OF BNA ANALYTICAL RESULTS FOR SOIL SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)			
		SLCVSB1405(C3)	SLCVSB1406(C3)	SLCVSB1407(C3)	SLCVSB1408(C3)
BASE/NEUTRAL EXTRACTABLE-PRIORITY POLLUTANTS					
Acenaphthene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Acenaphthylene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Anthracene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzidine	10	< 10	< 10	< 10	< 10
Benzo(a)anthracene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzo(a)pyrene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzo(g,h,i)perylene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzo(b)fluoranthene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzo(k)fluoranthene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
bis(2-Chloroethoxy)methane	2.0	< 2.0	< 2.0	< 2.0	< 2.0
bis(2-Chloroethyl)ether	2.0	< 2.0	< 2.0	< 2.0	< 2.0
bis(2-Chloroisopropyl)ether	2.0	< 2.0	< 2.0	< 2.0	< 2.0
bis(2-Ethylhexyl)phthalate	4.0	< 4.0	< 4.0	< 4.0	< 4.0
4-Bromophenylphenylether	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzylphthalate	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chloronaphthalene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorophenylphenylether	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chrysene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibenzo(a,h)anthracene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
3,3'-Dichlorobenzidine	10	< 10	< 10	< 10	< 10
Diethylphthalate	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dimethylphthalate	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Di-n-butylphthalate	2.0	< 2.0	< 2.0	< 2.0	< 2.0
2,4-Dinitrotoluene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,6-Dinitrotoluene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Di-n-octylphthalate	2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,2-Diphenylhydrazine	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Fluoranthene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Fluorene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Hexachlorocyclopentadiene	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Hexachloroethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Indeno(1,2,3-c,d)pyrene	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Isophorone	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Nitrobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodi-N-propylamine	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodiphenylamine	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenanthrene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Pyrene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0

TABLE 2-5
(Continued)

SUMMARY OF BNA ANALYTICAL RESULTS FOR SOIL SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)			
		SLCVSB1405(C3)	SLCVSB1406(C3)	SLCVSB1407(C3)	SLCVSB1408(C3)
ACID EXTRACTABLE PRIORITY POLLUTANTS					
2-Chlorophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4-Dichlorophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4-Dimethylphenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4,6-Dinitro-o-cresol	10	< 10	< 10	< 10	< 10
2,4-Dinitrophenol	10	< 10	< 10	< 10	< 10
2-Nitrophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Nitrophenol	2.0	< 2.0	< 2.0	< 2.0	< 2.0
p-Chloro-m-cresol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Pentachlorophenol	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Phenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4,6-Trichlorophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
HAZARDOUS SUBSTANCES COMPOUNDS					
Aniline	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzyl Alcohol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Methylphenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Methylphenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzoic Acid	10	< 10	< 10	< 10	< 10
4-Chloroaniline	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Methylnaphthalene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibenzofuran	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Nitroaniline	2.0	< 2.0	< 2.0	< 2.0	< 2.0
3-Nitroaniline	4.0	< 4.0	< 4.0	< 4.0	< 4.0
4-Nitroaniline	4.0	< 4.0	< 4.0	< 4.0	< 4.0
2,4,5-Trichlorophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0

TABLE 2-6

SUMMARY OF BNA ANALYTICAL RESULTS FOR SEDIMENT SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)			
		SLCVSD1431(C3)	SLCVSD1432(C3)	SLVSD1433(C3)	SLCVSD1434(C3)
BASE/NEUTRAL EXTRACTABLE-PRIORITY POLLUTANTS					
Acenaphthene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Acenaphthylene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Anthracene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzidine	10	< 10	< 10	< 10	< 10
Benzo(a)anthracene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzo(a)pyrene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzo(g,h,i)perylene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzo(b)fluoranthene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzo(k)fluoranthene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
bis(2-Chloroethoxy)methane	2.0	< 2.0	< 2.0	< 2.0	< 2.0
bis(2-Chloroethyl)ether	2.0	< 2.0	< 2.0	< 2.0	< 2.0
bis(2-Chloroisopropyl)ether	2.0	< 2.0	< 2.0	< 2.0	< 2.0
bis(2-Ethylhexyl)phthalate	4.0	< 4.0	< 4.0	< 4.0	< 4.0
4-Bromophenylphenylether	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzylphthalate	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chloronaphthalene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorophenylphenylether	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chrysene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibenzo(a,h)anthracene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
3,3'-Dichlorobenzidine	10	< 10	< 10	< 10	< 10
Diethylphthalate	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dimethylphthalate	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Di-n-butylphthalate	2.0	< 2.0	< 2.0	< 2.0	< 2.0
2,4-Dinitrotoluene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,6-Dinitrotoluene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Di-n-octylphthalate	2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,2-Diphenylhydrazine	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Fluoranthene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Fluorene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Hexachlorocyclopentadiene	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Hexachloroethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Indeno(1,2,3-c,d)pyrene	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Isophorone	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Nitrobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodi-N-propylamine	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodiphenylamine	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenanthrene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Pyrene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0

TABLE 2-6
(Continued)

SUMMARY OF BNA ANALYTICAL RESULTS FOR SEDIMENT SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)			
		SLCVSD1431(C3)	SLCVSD1432(C3)	SLVSD1433(C3)	SLCVSD1434(C3)
ACID EXTRACTABLE PRIORITY POLLUTANTS					
2-Chlorophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4-Dichlorophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4-Dimethylphenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4,6-Dinitro-o-cresol	10	< 10	< 10	< 10	< 10
2,4-Dinitrophenol	10	< 10	< 10	< 10	< 10
2-Nitrophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Nitrophenol	2.0	< 2.0	< 2.0	< 2.0	< 2.0
p-Chloro-m-cresol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Pentachlorophenol	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Phenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4,6-Trichlorophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
HAZARDOUS SUBSTANCES COMPOUNDS					
Aniline	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzyl Alcohol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Methylphenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Methylphenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzoic Acid	10	< 10	< 10	< 10	< 10
4-Chloroaniline	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Methylnaphthalene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibenzofuran	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Nitroaniline	2.0	< 2.0	< 2.0	< 2.0	< 2.0
3-Nitroaniline	4.0	< 4.0	< 4.0	< 4.0	< 4.0
4-Nitroaniline	4.0	< 4.0	< 4.0	< 4.0	< 4.0
2,4,5-Trichlorophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0

TABLE 2-6
(Continued)

SUMMARY OF BNA ANALYTICAL RESULTS FOR SEDIMENT SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)		
		SLCVSD1435(C3)	SLCVSD1436(C3)	SLCVSD1436(C3) D
BASE/NEUTRAL EXTRACTABLE-PRIORITY POLLUTANTS				
Acenaphthene	1.0	< 1.0	< 1.0	< 1.0
Acenaphthylene	1.0	< 1.0	< 1.0	< 1.0
Anthracene	1.0	< 1.0	< 1.0	< 1.0
Benzidine	10	< 10	< 10	< 10
Benzo(a)anthracene	1.0	< 1.0	< 1.0	< 1.0
Benzo(a)pyrene	1.0	< 1.0	< 1.0	< 1.0
Benzo(g,h,i)perylene	1.0	< 1.0	< 1.0	< 1.0
Benzo(b)fluoranthene	1.0	< 1.0	< 1.0	< 1.0
Benzo(k)fluoranthene	1.0	< 1.0	< 1.0	< 1.0
bis(2-Chloroethoxy)methane	2.0	< 2.0	< 2.0	< 2.0
bis(2-Chloroethyl)ether	2.0	< 2.0	< 2.0	< 2.0
bis(2-Chloroisopropyl)ether	2.0	< 2.0	< 2.0	< 2.0
bis(2-Ethylhexyl)phthalate	4.0	< 4.0	< 4.0	< 4.0
4-Bromophenylphenylether	1.0	< 1.0	< 1.0	< 1.0
Butylbenzylphthalate	1.0	< 1.0	< 1.0	< 1.0
2-Chloronaphthalene	1.0	< 1.0	< 1.0	< 1.0
4-Chlorophenylphenylether	1.0	< 1.0	< 1.0	< 1.0
Chrysene	1.0	< 1.0	< 1.0	< 1.0
Dibenzo(a,h)anthracene	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	1.0	< 1.0	< 1.0	< 1.0
3,3'-Dichlorobenzidine	10	< 10	< 10	< 10
Diethylphthalate	1.0	< 1.0	< 1.0	< 1.0
Dimethylphthalate	1.0	< 1.0	< 1.0	< 1.0
Di-n-butylphthalate	2.0	< 2.0	< 2.0	< 2.0
2,4-Dinitrotoluene	1.0	< 1.0	< 1.0	< 1.0
2,6-Dinitrotoluene	1.0	< 1.0	< 1.0	< 1.0
Di-n-octylphthalate	2.0	< 2.0	< 2.0	< 2.0
1,2-Diphenylhydrazine	2.0	< 2.0	< 2.0	< 2.0
Fluoranthene	1.0	< 1.0	< 1.0	< 1.0
Fluorene	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobenzene	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	2.0	< 2.0	< 2.0	< 2.0
Hexachlorocyclopentadiene	2.0	< 2.0	< 2.0	< 2.0
Hexachloroethane	1.0	< 1.0	< 1.0	< 1.0
Indeno(1,2,3-c,d)pyrene	2.0	< 2.0	< 2.0	< 2.0
Isophorone	1.0	< 1.0	< 1.0	< 1.0
Naphthalene	1.0	< 1.0	< 1.0	< 1.0
Nitrobenzene	1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodi-N-propylamine	1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodiphenylamine	1.0	< 1.0	< 1.0	< 1.0
Phenanthrene	1.0	< 1.0	< 1.0	< 1.0
Pyrene	1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	1.0	< 1.0	< 1.0	< 1.0

TABLE 2-6
(Continued)

SUMMARY OF BNA ANALYTICAL RESULTS FOR SEDIMENT SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)			
		SLCVSD1435(C3)	SLCVSD1436(C3)	SLCVSD1436(C3)	D
ACID EXTRACTABLE PRIORITY POLLUTANTS					
2-Chlorophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4-Dichlorophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4-Dimethylphenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4,6-Dinitro-o-cresol	10	< 10	< 10	< 10	< 10
2,4-Dinitrophenol	10	< 10	< 10	< 10	< 10
2-Nitrophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Nitrophenol	2.0	< 2.0	< 2.0	< 2.0	< 2.0
p-Chloro-m-cresol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Pentachlorophenol	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Phenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4,6-Trichlorophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
HAZARDOUS SUBSTANCES COMPOUNDS					
Aniline	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzyl Alcohol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Methylphenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Methylphenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzoic Acid	10	< 10	< 10	< 10	< 10
4-Chloroaniline	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Methylnaphthalene	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibenzofuran	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Nitroaniline	2.0	< 2.0	< 2.0	< 2.0	< 2.0
3-Nitroaniline	4.0	< 4.0	< 4.0	< 4.0	< 4.0
4-Nitroaniline	4.0	< 4.0	< 4.0	< 4.0	< 4.0
2,4,5-Trichlorophenol	1.0	< 1.0	< 1.0	< 1.0	< 1.0

TABLE 2-7

SUMMARY OF BNA ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

Compound	Detection Limit ($\mu\text{g/l}$)	Sample ID and Analytical Results ($\mu\text{g/l}$)		
		SLCVMW1401	SLCVMW1401 D	SLCVMW1401 RB
BASE/NEUTRAL EXTRACTABLE-PRIORITY POLLUTANTS				
Acenaphthene	5.0	< 5.0	< 5.0	< 5.0
Acenaphthylene	5.0	< 5.0	< 5.0	< 5.0
Anthracene	5.0	< 5.0	< 5.0	< 5.0
Benzidine	50	< 50	< 50	< 50
Benzo(a)anthracene	5.0	< 5.0	< 5.0	< 5.0
Benzo(a)pyrene	5.0	< 5.0	< 5.0	< 5.0
Benzo(g,h,i)perylene	10	< 10	< 10	< 10
Benzo(b)fluoranthene	5.0	< 5.0	< 5.0	< 5.0
Benzo(k)fluoranthene	5.0	< 5.0	< 5.0	< 5.0
bis(2-Chloroethoxy)methane	10	< 10	< 10	< 10
bis(2-Chloroethyl)ether	10	< 10	< 10	< 10
bis(2-Chloroisopropyl)ether	10	< 10	< 10	< 10
bis(2-Ethylhexyl)phthalate	20	< 20	< 20	< 20
4-Bromophenylphenylether	5.0	< 5.0	< 5.0	< 5.0
Butylbenzylphthalate	5.0	< 5.0	< 5.0	< 5.0
2-Chloronaphthalene	5.0	< 5.0	< 5.0	< 5.0
4-Chlorophenylphenylether	5.0	< 5.0	< 5.0	< 5.0
Chrysene	5.0	< 5.0	< 5.0	< 5.0
Dibenzo(a,h)anthracene	10	< 10	< 10	< 10
1,2-Dichlorobenzene	5.0	< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene	5.0	< 5.0	< 5.0	< 5.0
1,4-Dichlorobenzene	5.0	< 5.0	< 5.0	< 5.0
3,3'-Dichlorobenzidine	50	< 50	< 50	< 50
Diethylphthalate	5.0	< 5.0	< 5.0	< 5.0
Dimethylphthalate	5.0	< 5.0	< 5.0	< 5.0
Di-n-butylphthalate	10	< 10	< 10	< 10
2,4-Dinitrotoluene	5.0	< 5.0	< 5.0	< 5.0
2,6-Dinitrotoluene	5.0	< 5.0	< 5.0	< 5.0
Di-n-octylphthalate	10	< 10	< 10	< 10
1,2-Diphenylhydrazine	10	< 10	< 10	< 10
Fluoranthene	5.0	< 5.0	< 5.0	< 5.0
Fluorene	5.0	< 5.0	< 5.0	< 5.0
Hexachlorobenzene	5.0	< 5.0	< 5.0	< 5.0
Hexachlorobutadiene	10	< 10	< 10	< 10
Hexachlorocyclopentadiene	10	< 10	< 10	< 10
Hexachloroethane	5.0	< 5.0	< 5.0	< 5.0
Indeno(1,2,3-c,d)pyrene	10	< 10	< 10	< 10
Isophorone	5.0	< 5.0	< 5.0	< 5.0
Naphthalene	5.0	< 5.0	< 5.0	< 5.0
Nitrobenzene	5.0	< 5.0	< 5.0	< 5.0
N-Nitrosodimethylamine	5.0	< 5.0	< 5.0	< 5.0
N-Nitrosodi-N-propylamine	5.0	< 5.0	< 5.0	< 5.0
N-Nitrosodiphenylamine	5.0	< 5.0	< 5.0	< 5.0
Phenanthrene	5.0	< 5.0	< 5.0	< 5.0
Pyrene	5.0	< 5.0	< 5.0	< 5.0
1,2,4-Trichlorobenzene	5.0	< 5.0	< 5.0	< 5.0

TABLE 2-7
(Continued)

SUMMARY OF BNA ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

Compound	Detection Limit (µg/l)	Sample ID and Analytical Results (µg/l)		
		SLCVMW1401	SLCVMW1401 D	SLCVMW1401 RB
ACID EXTRACTABLE PRIORITY POLLUTANTS				
2-Chlorophenol	5.0	< 5.0	< 5.0	< 5.0
2,4-Dichlorophenol	5.0	< 5.0	< 5.0	< 5.0
2,4-Dimethylphenol	5.0	< 5.0	< 5.0	< 5.0
4,6-Dinitro-o-cresol	50	< 50	< 50	< 50
2,4-Dinitrophenol	50	< 50	< 50	< 50
2-Nitrophenol	5.0	< 5.0	< 5.0	< 5.0
4-Nitrophenol	10	< 10	< 10	< 10
p-Chloro-m-cresol	5.0	< 5.0	< 5.0	< 5.0
Pentachlorophenol	10	< 10	< 10	< 10
Phenol	5.0	< 5.0	< 5.0	< 5.0
2,4,6-Trichlorophenol	5.0	< 5.0	< 5.0	< 5.0
HAZARDOUS SUBSTANCES COMPOUNDS				
Aniline	5.0	< 5.0	< 5.0	< 5.0
Benzyl Alcohol	5.0	< 5.0	< 5.0	< 5.0
2-Methylphenol	5.0	< 5.0	< 5.0	< 5.0
4-Methylphenol	5.0	< 5.0	< 5.0	< 5.0
Benzoic Acid	50	< 50	< 50	< 50
4-Chloroaniline	5.0	< 5.0	< 5.0	< 5.0
2-Methylnaphthalene	5.0	< 5.0	< 5.0	< 5.0
Dibenzofuran	5.0	< 5.0	< 5.0	< 5.0
2-Nitroaniline	10	< 10	< 10	< 10
3-Nitroaniline	20	< 20	< 20	< 20
4-Nitroaniline	20	< 20	< 20	< 20
2,4,5-Trichlorophenol	5.0	< 5.0	< 5.0	< 5.0

TABLE 2-7
(Continued)

SUMMARY OF BNA ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

Compound	Detection Limit (µg/l)	Sample ID and Analytical Results (µg/l)		
		SLCVMW1402	SLCVMW1403	SLCVMW1404
BASE/NEUTRAL EXTRACTABLE-PRIORITY POLLUTANTS				
Acenaphthene	5.0	< 5.0	< 5.0	< 5.0
Acenaphthylene	5.0	< 5.0	< 5.0	< 5.0
Anthracene	5.0	< 5.0	< 5.0	< 5.0
Benzidine	50	< 50	< 50	< 50
Benzo(a)anthracene	5.0	< 5.0	< 5.0	< 5.0
Benzo(a)pyrene	5.0	< 5.0	< 5.0	< 5.0
Benzo(g,h,i)perylene	10	< 10	< 10	< 10
Benzo(b)fluoranthene	5.0	< 5.0	< 5.0	< 5.0
Benzo(k)fluoranthene	5.0	< 5.0	< 5.0	< 5.0
bis(2-Chloroethoxy)methane	10	< 10	< 10	< 10
bis(2-Chloroethyl)ether	10	< 10	< 10	< 10
bis(2-Chloroisopropyl)ether	10	< 10	< 10	< 10
bis(2-Ethylhexyl)phthalate	20	< 20	< 20	< 20
4-Bromophenylphenylether	5.0	< 5.0	< 5.0	< 5.0
Butylbenzylphthalate	5.0	< 5.0	< 5.0	< 5.0
2-Chloronaphthalene	5.0	< 5.0	< 5.0	< 5.0
4-Chlorophenylphenylether	5.0	< 5.0	< 5.0	< 5.0
Chrysene	5.0	< 5.0	< 5.0	< 5.0
Dibenzo(a,h)anthracene	10	< 10	< 10	< 10
1,2-Dichlorobenzene	5.0	< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene	5.0	< 5.0	< 5.0	< 5.0
1,4-Dichlorobenzene	5.0	< 5.0	< 5.0	< 5.0
3,3'-Dichlorobenzidine	50	< 50	< 50	< 50
Diethylphthalate	5.0	< 5.0	< 5.0	< 5.0
Dimethylphthalate	5.0	< 5.0	< 5.0	< 5.0
Di-n-butylphthalate	10	< 10	< 10	< 10
2,4-Dinitrotoluene	5.0	< 5.0	< 5.0	< 5.0
2,6-Dinitrotoluene	5.0	< 5.0	< 5.0	< 5.0
Di-n-octylphthalate	10	< 10	< 10	< 10
1,2-Diphenylhydrazine	10	< 10	< 10	< 10
Fluoranthene	5.0	< 5.0	< 5.0	< 5.0
Fluorene	5.0	< 5.0	< 5.0	< 5.0
Hexachlorobenzene	5.0	< 5.0	< 5.0	< 5.0
Hexachlorobutadiene	10	< 10	< 10	< 10
Hexachlorocyclopentadiene	10	< 10	< 10	< 10
Hexachloroethane	5.0	< 5.0	< 5.0	< 5.0
Indeno(1,2,3-c,d)pyrene	10	< 10	< 10	< 10
Isophorone	5.0	< 5.0	< 5.0	< 5.0
Naphthalene	5.0	< 5.0	< 5.0	< 5.0
Nitrobenzene	5.0	< 5.0	< 5.0	< 5.0
N-Nitrosodimethylamine	5.0	< 5.0	< 5.0	< 5.0
N-Nitrosodi-N-propylamine	5.0	< 5.0	< 5.0	< 5.0
N-Nitrosodiphenylamine	5.0	< 5.0	< 5.0	< 5.0
Phenanthrene	5.0	< 5.0	< 5.0	< 5.0
Pyrene	5.0	< 5.0	< 5.0	< 5.0
1,2,4-Trichlorobenzene	5.0	< 5.0	< 5.0	< 5.0

TABLE 2-7
(Continued)

SUMMARY OF BNA ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

Compound	Detection Limit (µg/l)	Sample ID and Analytical Results (µg/l)		
		SLCVMW1402	SLCVMW1403	SLCVMW1404
ACID EXTRACTABLE PRIORITY POLLUTANTS				
2-Chlorophenol	5.0	< 5.0	< 5.0	< 5.0
2,4-Dichlorophenol	5.0	< 5.0	< 5.0	< 5.0
2,4-Dimethylphenol	5.0	< 5.0	< 5.0	< 5.0
4,6-Dinitro-o-cresol	50	< 50	< 50	< 50
2,4-Dinitrophenol	50	< 50	< 50	< 50
2-Nitrophenol	5.0	< 5.0	< 5.0	< 5.0
4-Nitrophenol	10	< 10	< 10	< 10
p-Chloro-m-cresol	5.0	< 5.0	< 5.0	< 5.0
Pentachlorophenol	10	< 10	< 10	< 10
Phenol	5.0	< 5.0	< 5.0	< 5.0
2,4,6-Trichlorophenol	5.0	< 5.0	< 5.0	< 5.0
HAZARDOUS SUBSTANCES COMPOUNDS				
Aniline	5.0	< 5.0	< 5.0	< 5.0
Benzyl Alcohol	5.0	< 5.0	< 5.0	< 5.0
2-Methylphenol	5.0	< 5.0	< 5.0	< 5.0
4-Methylphenol	5.0	< 5.0	< 5.0	< 5.0
Benzoic Acid	50	< 50	< 50	< 50
4-Chloroaniline	5.0	< 5.0	< 5.0	< 5.0
2-Methylnaphthalene	5.0	< 5.0	< 5.0	< 5.0
Dibenzofuran	5.0	< 5.0	< 5.0	< 5.0
2-Nitroaniline	10	< 10	< 10	< 10
3-Nitroaniline	20	< 20	< 20	< 20
4-Nitroaniline	20	< 20	< 20	< 20
2,4,5-Trichlorophenol	5.0	< 5.0	< 5.0	< 5.0

TABLE 2-8

SUMMARY OF BNA ANALYTICAL RESULTS FOR SOURCE WATER SAMPLES

Compound	Detection Limit ($\mu\text{g/l}$)	Sample ID and Analytical Results ($\mu\text{g/l}$)	
		SLCVDI	SLCV1W
BASE/NEUTRAL EXTRACTABLE-PRIORITY POLLUTANTS			
Acenaphthene	5.0	< 5.0	< 5.0
Acenaphthylene	5.0	< 5.0	< 5.0
Anthracene	5.0	< 5.0	< 5.0
Benzdine	50	< 50	< 50
Benzo(a)anthracene	5.0	< 5.0	< 5.0
Benzo(a)pyrene	5.0	< 5.0	< 5.0
Benzo(g,h,i)perylene	10	< 10	< 10
Benzo(b)fluoranthene	5.0	< 5.0	< 5.0
Benzo(k)fluoranthene	5.0	< 5.0	< 5.0
bis(2-Chloroethoxy)methane	10	< 10	< 10
bis(2-Chloroethyl)ether	10	< 10	< 10
bis(2-Chloroisopropyl)ether	10	< 10	< 10
bis(2-Ethylhexyl)phthalate	20	< 20	< 20
4-Bromophenylphenylether	5.0	< 5.0	< 5.0
Butylbenzylphthalate	5.0	< 5.0	< 5.0
2-Chloronaphthalene	5.0	< 5.0	< 5.0
4-Chlorophenylphenylether	5.0	< 5.0	< 5.0
Chrysene	5.0	< 5.0	< 5.0
Dibenzo(a,h)anthracene	10	< 10	< 10
1,2-Dichlorobenzene	5.0	< 5.0	< 5.0
1,3-Dichlorobenzene	5.0	< 5.0	< 5.0
1,4-Dichlorobenzene	5.0	< 5.0	< 5.0
3,3'-Dichlorobenzidine	50	< 50	< 50
Diethylphthalate	5.0	< 5.0	< 5.0
Dimethylphthalate	5.0	< 5.0	< 5.0
Di-n-butylphthalate	10	< 10	< 10
2,4-Dinitrotoluene	5.0	< 5.0	< 5.0
2,6-Dinitrotoluene	5.0	< 5.0	< 5.0
Di-n-octylphthalate	10	< 10	< 10
1,2-Diphenylhydrazine	10	< 10	< 10
Fluoranthene	5.0	< 5.0	< 5.0
Fluorene	5.0	< 5.0	< 5.0
Hexachlorobenzene	5.0	< 5.0	< 5.0
Hexachlorobutadiene	10	< 10	< 10
Hexachlorocyclopentadiene	10	< 10	< 10
Hexachloroethane	5.0	< 5.0	< 5.0
Indeno(1,2,3-c,d)pyrene	10	< 10	< 10
Isophorone	5.0	< 5.0	< 5.0
Naphthalene	5.0	< 5.0	< 5.0
Nitrobenzene	5.0	< 5.0	< 5.0
N-Nitrosodimethylamine	5.0	< 5.0	< 5.0
N-Nitrosodi-N-propylamine	5.0	< 5.0	< 5.0
N-Nitrosodiphenylamine	5.0	< 5.0	< 5.0
Phenanthrene	5.0	< 5.0	< 5.0
Pyrene	5.0	< 5.0	< 5.0
1,2,4-Trichlorobenzene	5.0	< 5.0	< 5.0

TABLE 2-8
(Continued)

SUMMARY OF BNA ANALYTICAL RESULTS FOR SOURCE WATER SAMPLES

Compound	Detection Limit ($\mu\text{g/l}$)	Sample ID and Analytical Results ($\mu\text{g/l}$)	
		SLCVDI	SLCVIIV
ACID EXTRACTABLE PRIORITY POLLUTANTS			
2-Chlorophenol	5.0	< 5.0	< 5.0
2,4-Dichlorophenol	5.0	< 5.0	< 5.0
2,4-Dimethylphenol	5.0	< 5.0	< 5.0
4,6-Dinitro-o-cresol	50	< 50	< 50
2,4-Dinitrophenol	50	< 50	< 50
2-Nitrophenol	5.0	< 5.0	< 5.0
4-Nitrophenol	10	< 10	< 10
p-Chloro-m-cresol	5.0	< 5.0	< 5.0
Pentachlorophenol	10	< 10	< 10
Phenol	5.0	< 5.0	< 5.0
2,4,6-Trichlorophenol	5.0	< 5.0	< 5.0
HAZARDOUS SUBSTANCES COMPOUNDS			
Aniline	5.0	< 5.0	< 5.0
Benzyl Alcohol	5.0	< 5.0	< 5.0
2-Methylphenol	5.0	< 5.0	< 5.0
4-Methylphenol	5.0	< 5.0	< 5.0
Benzoic Acid	50	< 50	< 50
4-Chloroaniline	5.0	< 5.0	< 5.0
2-Methylnaphthalene	5.0	< 5.0	< 5.0
Dibenzofuran	5.0	< 5.0	< 5.0
2-Nitroaniline	10	< 10	< 10
3-Nitroaniline	20	< 20	< 20
4-Nitroaniline	20	< 20	< 20
2,4,5-Trichlorophenol	5.0	< 5.0	< 5.0

TABLE 2-9

SUMMARY OF PESTICIDE/PCB ANALYTICAL RESULTS FOR SOIL SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)			
		SLCVSB1401(C3)	SLCVSB1402(C3)	SLCVSB1403(C3)	SLCVSB1404(C3)
PRIORITY POLLUTANT PESTICIDES					
Aldrin	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Alpha-BHC	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Beta-BHC	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Delta-BHC	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Gamma-BHC (Lindane)	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Chlordane	0.04	< 0.04	< 0.04	< 0.04	< 0.04
p,p' DDD	0.004	< 0.004	< 0.004	< 0.004	< 0.004
p,p' DDE	0.004	< 0.004	< 0.004	< 0.004	< 0.004
p,p' DDT	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Dieldrin	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Endosulfan I (alpha)	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Endosulfan II (beta)	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Endosulfan sulfate	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Endrin	0.002	< 0.002	< 0.002	< 0.002	< 0.002
Heptachlor	0.002	< 0.002	< 0.002	< 0.002	< 0.002
Heptachlor Epoxide	0.002	< 0.002	< 0.002	< 0.002	< 0.002
Endrin Aldehyde	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Toxaphene	0.10	< 0.10	< 0.10	< 0.10	< 0.10
POLYCHLORINATED BIPHENYLS					
Arochlor 1016	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1221	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1232	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1242	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1248	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1254	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1260	0.10	< 0.10	< 0.10	< 0.10	< 0.10

TABLE 2-9
(Continued)

SUMMARY OF PESTICIDE/PCB ANALYTICAL RESULTS FOR SOIL SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)			
		SLCVSB1405(C3)	SLCVSB1406(C3)	SLCVSB1407(C3)	SLCVSB1408(C3)
PRIORITY POLLUTANT PESTICIDES					
Aldrin	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Alpha-BHC	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Beta-BHC	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Delta-BHC	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Gamma-BHC (Lindane)	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Chlordane	0.04	< 0.04	< 0.04	< 0.04	< 0.04
p,p' DDD	0.004	< 0.004	< 0.004	< 0.004	< 0.004
p,p' DDE	0.004	< 0.004	< 0.004	< 0.004	< 0.004
p,p' DDT	0.004	< 0.004	< 0.004	< 0.004	0.005-
Dieldrin	0.004	< 0.004	< 0.004	0.011	0.007
Endosulfan I (alpha)	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Endosulfan II (beta)	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Endosulfan sulfate	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Endrin	0.002	< 0.002	< 0.002	< 0.002	< 0.002
Heptachlor	0.002	< 0.002	< 0.002	< 0.002	< 0.002
Heptachlor Epoxide	0.002	< 0.002	< 0.002	< 0.002	< 0.002
Endrin Aldehyde	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Toxaphene	0.10	< 0.10	< 0.10	< 0.10	< 0.10
POLYCHLORINATED BIPHENYLS					
Arochlor 1016	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1221	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1232	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1242	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1248	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1254	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1260	0.10	< 0.10	< 0.10	< 0.10	< 0.10

TABLE 2-10

SUMMARY OF PESTICIDE/PCB ANALYTICAL RESULTS FOR SEDIMENT SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)			
		SLVSD1431(C3)	SLVSD1432(C3)	SLVSD1433(C3)	SLCVSD1434(C3)
PRIORITY POLLUTANT PESTICIDES					
Aldrin	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Alpha-BHC	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Beta-BHC	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Delta-BHC	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Gamma-BHC (Lindane)	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Chlordane	0.04	< 0.04	< 0.04	< 0.04	< 0.04
p,p' DDD	0.004	< 0.004	< 0.004	< 0.004	< 0.004
p,p' DDE	0.004	< 0.004	< 0.004	< 0.004	< 0.004
p,p' DDT	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Dieldrin	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Endosulfan I (alpha)	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Endosulfan II (beta)	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Endosulfan sulfate	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Endrin	0.002	< 0.002	< 0.002	< 0.002	< 0.002
Heptachlor	0.002	< 0.002	< 0.002	< 0.002	< 0.002
Heptachlor Epoxide	0.002	< 0.002	< 0.002	< 0.002	< 0.002
Endrin Aldehyde	0.004	< 0.004	< 0.004	< 0.004	< 0.004
Toxaphene	0.10	< 0.10	< 0.10	< 0.10	< 0.10
POLYCHLORINATED BIPHENYLS					
Arochlor 1016	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1221	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1232	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1242	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1248	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1254	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arochlor 1260	0.10	< 0.10	< 0.10	< 0.10	< 0.10

TABLE 2-10
(Continued)

SUMMARY OF PESTICIDE/PCB ANALYTICAL RESULTS FOR SEDIMENT SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)		
		SLCVSD1435(C3)	SLCVSD1436(C3)	SLCVSD1436(C3) D
PRIORITY POLLUTANT PESTICIDES				
Aldrin	0.004	< 0.004	< 0.004	< 0.004
Alpha-BHC	0.004	< 0.004	< 0.004	< 0.004
Beta-BHC	0.004	< 0.004	< 0.004	< 0.004
Delta-BHC	0.004	< 0.004	< 0.004	< 0.004
Gamma-BHC (Lindane)	0.004	< 0.004	< 0.004	< 0.004
Chlordane	0.04	< 0.04	< 0.04	< 0.04
p,p' DDD	0.004	< 0.004	< 0.004	< 0.004
p,p' DDE	0.004	0.004	< 0.004	< 0.004
p,p' DDT	0.004	< 0.004	< 0.004	< 0.004
Dieldrin	0.004	< 0.004	< 0.004	< 0.004
Endosulfan I (alpha)	0.004	< 0.004	< 0.004	< 0.004
Endosulfan II (beta)	0.004	< 0.004	< 0.004	< 0.004
Endosulfan sulfate	0.004	< 0.004	< 0.004	< 0.004
Endrin	0.002	< 0.002	< 0.002	< 0.002
Heptachlor	0.002	< 0.002	< 0.002	< 0.002
Heptachlor Epoxide	0.002	< 0.002	< 0.002	< 0.002
Endrin Aldehyde	0.004	< 0.004	< 0.004	< 0.004
Toxaphene	0.10	< 0.10	< 0.10	< 0.10
POLYCHLORINATED BIPHENYLS				
Arochlor 1016	0.10	< 0.10	< 0.10	< 0.10
Arochlor 1221	0.10	< 0.10	< 0.10	< 0.10
Arochlor 1232	0.10	< 0.10	< 0.10	< 0.10
Arochlor 1242	0.10	< 0.10	< 0.10	< 0.10
Arochlor 1248	0.10	< 0.10	< 0.10	< 0.10
Arochlor 1254	0.10	< 0.10	< 0.10	< 0.10
Arochlor 1260	0.10	< 0.10	< 0.10	< 0.10

TABLE 2-11

SUMMARY OF PESTICIDE/PCB ANALYTICAL RESULTS FOR UST SAMPLES

Compound	Detection Limit ($\mu\text{g/l}$)	Sample ID and Analytical Results ($\mu\text{g/l}$)		
		SATGTK1501(PS)	SATGTK1503(PS)	SATGTK1505(AQ)
PRIORITY POLLUTANT PESTICIDES				
Aldrin	0.02	NA	NA	< 0.02
Alpha-BHC	0.02	NA	NA	< 0.02
Beta-BHC	0.02	NA	NA	< 0.02
Delta-BHC	0.02	NA	NA	< 0.02
Gamma-BHC (Lindane)	0.02	NA	NA	< 0.02
Chlordane	0.20	NA	NA	< 0.20
p,p' DDD	0.02	NA	NA	< 0.02
p,p' DDE	0.02	NA	NA	< 0.02
p,p' DDT	0.02	NA	NA	< 0.02
Dieldrin	0.02	NA	NA	< 0.02
Endosulfan I (alpha)	0.02	NA	NA	< 0.02
Endosulfan II (beta)	0.02	NA	NA	< 0.02
Endosulfan sulfate	0.02	NA	NA	< 0.02
Endrin	0.01	NA	NA	< 0.01
Heptachlor	0.01	NA	NA	< 0.01
Heptachlor Epoxide	0.01	NA	NA	< 0.01
Endrin Aldehyde	0.02	NA	NA	< 0.02
Toxaphene	0.50	NA	NA	< 0.50
POLYCHLORINATED BIPHENYLS				
Arochlor 1016	0.50	< 5.0	< 5.0	< 0.50
Arochlor 1221	0.50	< 5.0	< 5.0	< 0.50
Arochlor 1232	0.50	< 5.0	< 5.0	< 0.50
Arochlor 1242	0.50	< 5.0	< 5.0	< 0.50
Arochlor 1248	0.50	< 5.0	< 5.0	< 0.50
Arochlor 1254	0.50	< 5.0	< 5.0	< 0.50
Arochlor 1260	0.50	< 5.0	< 5.0	< 0.50

TABLE 2-11
(Continued)

SUMMARY OF PESTICIDE/PCB ANALYTICAL RESULTS FOR UST SAMPLES

Compound	Detection Limit (µg/l)	Sample ID and Analytical Results (µg/l)		
		SATGTK1505(AQ) D	SATGTK1505(AQ) (R)	SATGTK1505(AQ) D (R)
PRIORITY POLLUTANT PESTICIDES				
Aldrin	0.02	< 0.02	< 0.02	< 0.02
Alpha-BHC	0.02	< 0.02	< 0.02	< 0.02
Beta-BHC	0.02	< 0.02	< 0.02	< 0.02
Delta-BHC	0.02	< 0.02	< 0.02	< 0.02
Gamma-BHC (Lindane)	0.02	< 0.02	< 0.02	< 0.02
Chlordane	0.20	< 0.20	< 0.20	< 0.20
p,p' DDD	0.02	< 0.02	< 0.02	< 0.02
p,p' DDE	0.02	< 0.02	< 0.02	< 0.02
p,p' DDT	0.02	< 0.02	< 0.02	< 0.02
Dieldrin	0.02	< 0.02	< 0.02	< 0.02
Endosulfan I (alpha)	0.02	< 0.02	< 0.02	< 0.02
Endosulfan II (beta)	0.02	< 0.02	< 0.02	< 0.02
Endosulfan sulfate	0.02	< 0.02	< 0.02	< 0.02
Endrin	0.01	< 0.01	< 0.01	< 0.01
Heptachlor	0.01	< 0.01	< 0.01	< 0.01
Heptachlor Epoxide	0.01	< 0.01	< 0.01	< 0.01
Endrin Aldehyde	0.02	< 0.02	< 0.02	< 0.02
Toxaphene	0.50	< 0.50	< 0.50	< 0.50
POLYCHLORINATED BIPHENYLS				
Arochlor 1016	0.50	< 0.50	< 0.50	< 0.50
Arochlor 1221	0.50	< 0.50	< 0.50	< 0.50
Arochlor 1232	0.50	< 0.50	< 0.50	< 0.50
Arochlor 1242	0.50	< 0.50	< 0.50	< 0.50
Arochlor 1248	0.50	< 0.50	< 0.50	< 0.50
Arochlor 1254	0.50	< 0.50	< 0.50	< 0.50
Arochlor 1260	0.50	< 0.50	< 0.50	< 0.50

NA = Not Analyzed.

TABLE 2-12

SUMMARY OF PESTICIDE/PCB ANALYTICAL RESULTS FOR SOURCE WATER SAMPLES

Compound	Detection Limit ($\mu\text{g/l}$)	Sample ID and Analytical Results ($\mu\text{g/l}$)
		SLCVDI
PRIORITY POLLUTANT PESTICIDES		
Aldrin	0.02	< 0.02
Alpha-BHC	0.02	< 0.02
Beta-BHC	0.02	< 0.02
Delta-BHC	0.02	< 0.02
Gamma-BHC (Lindane)	0.02	< 0.02
Chlordane	0.20	< 0.20
p,p' DDD	0.02	< 0.02
p,p' DDE	0.02	< 0.02
p,p' DDT	0.02	< 0.02
Dieldrin	0.02	< 0.02
Endosulfan I (alpha)	0.02	< 0.02
Endosulfan II (beta)	0.02	< 0.02
Endosulfan sulfate	0.02	< 0.02
Endrin	0.01	< 0.01
Heptachlor	0.01	< 0.01
Heptachlor Epoxide	0.01	< 0.01
Endrin Aldehyde	0.02	< 0.02
Toxaphene	0.50	< 0.50
POLYCHLORINATED BIPHENYLS		
Arochlor 1016	0.50	< 0.50
Arochlor 1221	0.50	< 0.50
Arochlor 1232	0.50	< 0.50
Arochlor 1242	0.50	< 0.50
Arochlor 1248	0.50	< 0.50
Arochlor 1254	0.50	< 0.50
Arochlor 1260	0.50	< 0.50

TABLE 2-13

SUMMARY OF METAL ANALYTICAL RESULTS FOR SOIL SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)			
		SLCVSB1401(C3)	SLCVSB1402(C3)	SLCVSB1403(C3)	SLCVSB1404(C3)
Silver	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Arsenic	10	< 10	< 10	< 10	< 10
Beryllium	0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cadmium	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chromium	1.0	< 1.0	<i>1.4</i>	< 1.0	<i>1.6</i>
Copper	1.0	< 1.0	< 1.0	< 1.0	<i>2.6</i>
Mercury	0.02	< 0.02	< 0.02	< 0.02	< 0.02
Nickel	4.0	< 4.0	< 4.0	< 4.0	< 4.0
Lead	10	< 10	< 10	< 10	< 10
Antimony	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Selenium	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Thallium	10	< 10	< 10	< 10	< 10
Zinc	2.0	<i>3.9</i>	<i>4.5</i>	<i>4.1</i>	<i>4.3</i>
Barium	10	< 10	< 10	< 10	< 10

TABLE 2-13
(Continued)

SUMMARY OF METAL ANALYTICAL RESULTS FOR SOIL SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)			
		SLCVSB1405(C3)	SLCVSB1406(C3)	SLCVSB1407(C3)	SLCVSB1408(C3)
Silver	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Arsenic	10	< 10	< 10	< 10	< 10
Beryllium	0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cadmium	0.50	0.7	< 0.50	< 0.50	< 0.50
Chromium	1.0	2.4	1.4	2	1.8
Copper	1.0	2.8	1.4	1.9	< 1.0
Mercury	0.02	< 0.02	< 0.02	< 0.02	< 0.02
Nickel	4.0	< 4.0	< 4.0	< 4.0	< 4.0
Lead	10	< 10	< 10	< 10	< 10
Antimony	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Selenium	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Thallium	10	< 10	< 10	< 10	< 10
Zinc	2.0	1.5	1.3	4.8	3.5
Barium	10	< 10	< 10	< 10	< 10

TABLE 2-14

SUMMARY OF METAL ANALYTICAL RESULTS FOR SEDIMENT SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)			
		SLVSD1431(C3)	SLVSD1432(C3)	SLVSD1433(C3)	SLCVSD1434(C3)
Silver	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Arsenic	10	< 10	< 10	< 10	< 10
Beryllium	0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cadmium	0.50	< 0.50	2.5	0.7	< 0.50
Chromium	1.0	< 1.0	9.2	1.4	1.2
Copper	1.0	3.5	3.1	1.9	1.2
Mercury	0.02	< 0.02	< 0.02	< 0.02	< 0.02
Nickel	4.0	< 4.0	< 4.0	< 4.0	< 4.0
Lead	10	< 10	< 10	< 10	< 10
Antimony	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Selenium	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Thallium	10	< 10	< 10	< 10	< 10
Zinc	2.0	8.3	2.7	5.4	2.7
Barium	10	< 10	< 10	< 10	< 10

TABLE 2-14
(Continued)

SUMMARY OF METAL ANALYTICAL RESULTS FOR SEDIMENT SAMPLES

Compound	Detection Limit (mg/kg)	Sample ID and Analytical Results (mg/kg)		
		SLCVSD1435(C3)	SLCVSD1436(C3)	SLCVSD1436(C3) D
Silver	1.0	< 1.0	< 1.0	< 1.0
Arsenic	10	< 10	< 10	< 10
Beryllium	0.5	< 0.5	< 0.5	< 0.5
Cadmium	0.50	< 0.50	< 0.50	< 0.50
Chromium	1.0	5.3	1.4	< 1.0
Copper	1.0	16	< 1.0	< 1.0
Mercury	0.02	0.04	< 0.02	< 0.02
Nickel	4.0	< 4.0	< 4.0	< 4.0
Lead	10	< 10	< 10	< 10
Antimony	5.0	< 5.0	< 5.0	< 5.0
Selenium	5.0	< 5.0	< 5.0	< 5.0
Thallium	10	< 10	< 10	< 10
Zinc	2.0	8.3	8	6.1
Barium	10	15	< 10	< 10

TABLE 2-15

SUMMARY OF METAL ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

Compound	Detection Limit (mg/l)	Sample ID and Analytical Results (mg/l)			
		SLCV	SLCV	SLCV	SLCV
		MW1401 TOT	MW1401 DIS	MW1401 TOT D	MW1401 DIS D
Silver	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Arsenic	0.025	< 0.025	<i>0.006</i>	< 0.025	<i>0.009</i>
Beryllium	0.005	< 0.005	< 0.005	< 0.005	< 0.005
Cadmium	0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium	0.010	<i>0.021</i>	< 0.010	<i>0.014</i>	< 0.010
Copper	0.010	<i>0.019</i>	< 0.010	< 0.010	< 0.010
Mercury	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Nickel	0.040	< 0.040	< 0.040	< 0.040	< 0.040
Lead	0.010	<i>0.025</i>	< 0.002	<i>0.015</i>	<i>0.009</i>
Antimony	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Selenium	0.025	< 0.025	< 0.005	< 0.025	< 0.005
Thallium	0.050	< 0.050	< 0.010	< 0.050	< 0.010
Zinc	0.020	<i>0.19</i>	<i>0.07</i>	<i>0.13</i>	<i>0.14</i>
Barium	0.10	< 0.10	< 0.10	< 0.10	< 0.10

TABLE 2-15
(Continued)

SUMMARY OF METAL ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

Compound	Detection Limit (mg/l)	Sample ID and Analytical Results (mg/l)			
		SLCV		SLCV	
		MW1401 TOT RB	MW1401 DIS RB	MW1402 TOT	MW1402 DIS
Silver	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Arsenic	0.025	< 0.025	< 0.005	< 0.025	0.005
Beryllium	0.005	< 0.005	< 0.005	< 0.005	< 0.005
Cadmium	0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium	0.010	< 0.010	< 0.010	0.024	< 0.010
Copper	0.010	0.014	< 0.010	0.016	< 0.010
Mercury	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Nickel	0.040	< 0.040	< 0.040	< 0.040	< 0.040
Lead	0.010	< 0.010	< 0.002	0.02	< 0.002
Antimony	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Selenium	0.025	< 0.025	< 0.005	< 0.025	< 0.005
Thallium	0.050	< 0.050	< 0.010	< 0.050	< 0.010
Zinc	0.020	< 0.020	< 0.020	0.16	0.026
Barium	0.10	< 0.10	< 0.10	< 0.10	< 0.10

TABLE 2-15
(Continued)

SUMMARY OF METAL ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

Compound	Detection Limit (mg/l)	Sample ID and Analytical Results (mg/l)			
		SLCV MW1403 TOT	SLCV MW1403 DIS	SLCV MW1404 TOT	SLCV MW1404 DIS
		Silver	0.010	< 0.010	< 0.010
Arsenic	0.025	< 0.025	< 0.005	< 0.025	0.005
Beryllium	0.005	< 0.005	< 0.005	< 0.005	< 0.005
Cadmium	0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium	0.010	0.019	< 0.010	0.013	< 0.010
Copper	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Mercury	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Nickel	0.040	< 0.040	< 0.040	< 0.040	< 0.040
Lead	0.010	0.02	< 0.002	0.035	< 0.002
Antimony	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Selenium	0.025	< 0.025	< 0.005	< 0.025	< 0.005
Thallium	0.050	< 0.050	< 0.010	< 0.050	< 0.010
Zinc	0.020	0.14	0.044	0.24	0.035
Barium	0.10	< 0.10	< 0.10	< 0.10	< 0.10

TABLE 2-16

SUMMARY OF METAL ANALYTICAL RESULTS FOR SURFACE WATER SAMPLES

Compound	Detection Limit (mg/l)	Sample ID and Analytical Results (mg/l)			
		SLCV SW1451 TOT	SLCV SW1451 DIS	SLCV SW1452 TOT	SLCV SW1452 DIS
		Silver	0.010	< 0.010	< 0.010
Arsenic	0.025	< 0.025	< 0.005	< 0.025	< 0.005
Beryllium	0.005	< 0.005	< 0.005	< 0.005	< 0.005
Cadmium	0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium	0.010	< 0.010	< 0.010	0.005	< 0.010
Copper	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Mercury	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Nickel	0.040	< 0.040	< 0.040	< 0.040	< 0.040
Lead	0.010	< 0.010	< 0.002	0.010	< 0.002
Antimony	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Selenium	0.025	< 0.025	< 0.005	< 0.025	< 0.005
Thallium	0.050	< 0.050	< 0.010	< 0.050	< 0.010
Zinc	0.020	0.075	0.069	0.068	0.042
Barium	0.10	< 0.10	< 0.10	< 0.10	< 0.10

TABLE 2-16
(Continued)

SUMMARY OF METAL ANALYTICAL RESULTS FOR SURFACE WATER SAMPLES

Compound	Detection Limit (mg/l)	Sample ID and Analytical Results (mg/l)			
		SLCV SW1455 TOT	SLCV SW1455 DIS	SLCV SW1454 TOT	SLCV SW1454 DIS
		Silver	0.010	< 0.010	< 0.010
Arsenic	0.025	< 0.025	< 0.005	< 0.025	< 0.005
Beryllium	0.005	< 0.005	< 0.005	< 0.005	< 0.005
Cadmium	0.005	<i>0.011</i>	< 0.005	< 0.005	< 0.005
Chromium	0.010	<i>0.023</i>	< 0.010	< 0.010	< 0.010
Copper	0.010	<i>0.046</i>	< 0.010	< 0.010	< 0.010
Mercury	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Nickel	0.040	< 0.040	< 0.040	< 0.040	< 0.040
Lead	0.010	<i>0.05</i>	< 0.002	< 0.010	< 0.002
Antimony	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Selenium	0.025	< 0.025	< 0.005	< 0.025	< 0.005
Thallium	0.050	< 0.050	< 0.010	< 0.050	< 0.010
Zinc	0.020	<i>0.19</i>	< 0.020	<i>0.062</i>	<i>0.046</i>
Barium	0.10	< 0.10	< 0.10	< 0.10	< 0.10

TABLE 2-16
(Continued)

SUMMARY OF METAL ANALYTICAL RESULTS FOR SURFACE WATER SAMPLES

Compound	Detection Limit (mg/l)	Sample ID and Analytical Results (mg/l)			
		SLCV	SLCV	SLCV	SLCV
		SW1453 TOT	SW1453 DIS	SW1453 TOT D	SW1453 DIS D
Silver	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Arsenic	0.025	< 0.025	< 0.005	< 0.025	< 0.005
Beryllium	0.005	< 0.005	< 0.005	< 0.005	< 0.005
Cadmium	0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Copper	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Mercury	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Nickel	0.040	< 0.040	< 0.040	< 0.040	< 0.040
Lead	0.010	<i>0.015</i>	<i>0.006</i>	<i>0.015</i>	<i>0.007</i>
Antimony	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Selenium	0.025	< 0.025	< 0.005	< 0.025	< 0.005
Thallium	0.050	< 0.050	< 0.010	< 0.050	< 0.010
Zinc	0.020	<i>0.10</i>	<i>0.10</i>	<i>0.088</i>	<i>0.10</i>
Barium	0.10	< 0.10	< 0.10	< 0.10	< 0.10

TABLE 2-16
(Continued)

SUMMARY OF METAL ANALYTICAL RESULTS FOR SURFACE WATER SAMPLES

Compound	Detection Limit (mg/l)	Sample ID and Analytical Results (mg/l)	
		SLCV	
		SW1453 TOT RB	SW1453 DIS RB
Silver	0.010	< 0.010	< 0.010
Arsenic	0.025	< 0.025	< 0.005
Beryllium	0.005	< 0.005	< 0.005
Cadmium	0.005	< 0.005	< 0.005
Chromium	0.010	< 0.010	< 0.010
Copper	0.010	< 0.010	< 0.010
Mercury	0.0002	< 0.0002	< 0.0002
Nickel	0.040	< 0.040	< 0.040
Lead	0.010	< 0.010	< 0.002
Antimony	0.050	< 0.050	< 0.050
Selenium	0.025	< 0.025	< 0.005
Thallium	0.050	< 0.050	< 0.010
Zinc	0.020	< 0.020	< 0.020
Barium	0.10	< 0.10	< 0.10

TABLE 2-17

SUMMARY OF METAL ANALYTICAL RESULTS FOR UST SAMPLES

Compound	Detection Limit (mg/l)	Sample ID and Analytical Results (mg/l)		
		SATGTK1501(PS)	SATGTK1503(PS)	SATGTK1505 (AQ)
Arsenic	0.10	< 5.0	< 5.0	< 0.10
Cadmium	0.005	< 2.5	< 2.5	< 0.005
Chromium	0.010	< 2.5	< 2.5	< 0.010
Lead	0.10	< 2.5	< 2.5	< 0.10

TABLE 2-17
(Continued)

SUMMARY OF METAL ANALYTICAL RESULTS FOR UST SAMPLES

Compound	Detection Limit (mg/l)	Sample ID and Analytical Results (mg/l)		
		SATGTK1505(AQ) D	SATGTK1505(AQ) (R)	SATGTK1505(AQ) D (R)
Arsenic	0.10	< 0.10	< 0.10	< 0.10
Cadmium	0.005	< 0.005	< 0.005	<i>0.005</i>
Chromium	0.010	< 0.010	< 0.010	< 0.010
Lead	0.10	< 0.10	<i>0.32</i>	<i>0.49</i>

TABLE 2-18

SUMMARY OF METAL ANALYTICAL RESULTS FOR SOURCE WATER SAMPLES

Compound	Detection Limit (mg/l)	Sample ID and Analytical Results (mg/l)			
		SLCVDI TOT	SLCVDI DIS	SLCVIW TOT	SLCVIW DIS
Silver	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Arsenic	0.025	< 0.025	< 0.005	< 0.025	< 0.005
Beryllium	0.005	< 0.005	< 0.005	< 0.005	< 0.005
Cadmium	0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Copper	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Mercury	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Nickel	0.040	< 0.040	< 0.040	< 0.040	< 0.040
Lead	0.010	< 0.010	< 0.002	< 0.010	< 0.002
Antimony	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Selenium	0.025	< 0.025	< 0.005	< 0.025	< 0.005
Thallium	0.050	< 0.050	< 0.010	< 0.050	< 0.010
Zinc	0.020	< 0.020	< 0.020	0.66	1.0
Barium	0.10	< 0.10	< 0.10	< 0.10	< 0.10

TABLE 2-19

SUMMARY OF TFH-H ANALYTICAL RESULTS FOR SOIL SAMPLES

Sample ID	Concentration (mg/kg)
SLCVSB1401 (C3)	<10
SLCVSB1402 (C3)	<10
SLCVSB1403 (C3)	<10
SLCVSB1404 (C3)	<10
SLCVSB1405 (C3)	<10
SLCVSB1406 (C3)	<10
SLCVSB1407 (C3)	<10
SLCVSB1408 (C3)	<10
SLCVSD1436 (C3)	<10
SLCVSD1436 (C3) D	<10

TABLE 2-20

SUMMARY OF TFH-H ANALYTICAL RESULTS FOR SEDIMENT SAMPLES

Sample ID	Concentration (mg/kg)
SLCVSD1431 (C3)	<10
SLCVSD1432 (C3)	35
SLCVSD1433 (C3)	<10
SLCVSD1434 (C3)	<10
SLCVSD1435 (C3)	<10

TABLE 2-21

SUMMARY OF TFH-H ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

Sample ID	Concentration (mg/l)
SLCVMW1401 (C3)	<0.05
SLCVMW1401 (C3) D	<0.05
SLCVMW1401 (C3) RB	<0.05
SLCVMW1402 (C3)	<0.05
SLCVMW1403 (C3)	<0.05
SLCVMW1404 (C3)	<0.05

TABLE 2-22

SUMMARY OF TFH-H ANALYTICAL RESULTS FOR SURFACE WATER SAMPLES

Sample ID	Concentration (mg/l)
SLCVSW1451 (C3)	<0.05
SLCVSW1452 (C3)	<i>0.8</i>
SLOCVSW1453 (C3)	<0.05
SLCVSW1453 (C3) D	<0.05
SLCVSW1453 (C3) RB	<0.05
SLCVSW1454 (C3)	<i>56</i>
SLCVSW1455 (C3)	<0.05

TABLE 2-23

SUMMARY OF TFH-H ANALYTICAL RESULTS FOR SOURCE WATER SAMPLES

Sample ID	Concentration (mg/l)
SLCVDI	<0.05
SLCVIW	<0.05

TABLE 2-24

SUMMARY OF TFH-L ANALYTICAL RESULTS FOR UST SAMPLES

Sample ID	Concentration (mg/l)
SATGTK1505 (AQ)	58
SATGTK1505 (AQ) D	62
SATGTK1505 (AQ) (R)	50
SATGTK1505 (AQ) D (R)	49

TABLE 2-25

SUMMARY OF TOX ANALYTICAL RESULTS FOR UST SAMPLES

Sample ID	Detection Limit	Concentration
SATGTK1501 (PS)	100 mg/kg	<100 mg/kg
SATGTK1503 (PS)	100 mg/kg	<100 mg/kg
SATGTK1505 (AQ)	400 µg/l	1100 µg/l
SATGTK1505 (AQ) D	400 µg/l	1200 µg/l
SATGTK1505 (AQ) (R)	200 µg/l	910 µg/l
SATGTK1505 (AQ) D (R)	200 µg/l	940 µg/l

TABLE 2-26

SUMMARY OF NON-CHEMICAL ANALYSES
FOR UST SAMPLES

Sample ID	Flashpoint (°F)	Moisture Content (%)	Heat Content (BTU/gal)
SATGTK1501 (PS)	156	0.04	137,640
SATGTK1503 (PS)	162	0.04	138,210

TABLE 2-27

SUMMARY OF PARAMETERS MEASURED
AT TERMINATION OF WELL DEVELOPMENT

Monitoring Well No.	Electrical Conductivity (μmhos)	pH	Temperature (°C)	Turbidity (NTU)
MW1401	190	5.9	17.5	3.5
MW1402	335	6.0	17.0	153
MW1403	220	6.2	18.0	285
MW1404	85	5.5	15.0	163

3.0 ANALYTICAL DATA QUALITY CONTROL DOCUMENTATION

The analytical data generated during the LACV-30 Maintenance Facility Wetlands Area (LACV-30) and Atlantic Street Gas Station (ATGAS) field projects were evaluated based on data quality objectives (DQOs). These are quantitative and qualitative statements which assess the quality of the data for use during future phases of the LACV-30 and ATGAS projects. The data quality associated with environmental measurement data is a function of the sampling plan and procedures used to collect the samples, as well as the analytical methods and instrumentation used in making the measurements. Each component has its own potential sources of uncertainty and biases which may affect the overall quality of measurement.

A summary of the field activities performed at the LACV-30 and ATGAS Sites was presented in the *Quality Control Summary Report (QCSR)* (JMM, 1991). The *QCSR* also contained a description of potential sources of uncertainty associated with the field sampling program such as incorrect sampling measurement error or inappropriate application of procedures and protocols for sample handling, packaging, and transportation. All deviations from the planned sampling activities were documented, so that the samples collected and submitted for analysis are of known quality from the sampling perspective. It was concluded in the *QCSR* that the required number of soil, sediment, groundwater, surface water, and contents of underground storage tank (UST) field samples were collected during the field sampling effort, and that the integrity of the field samples was maintained. Collection of LACV-30 and ATGAS project samples was documented on Chain Of Custody (COC) records. When samples were received at the laboratory, conditions of the shipment were documented on Cooler Receipt (CR) Forms. A copy of the COCs and CR Forms generated for the LACV-30 and ATGAS filed investigations is provided in Appendix B.

In order to estimate the analytical measurement error associated with the LACV-30 and ATGAS data, this *Analytical Results Report (ARR)* has been prepared to provide an assessment of the analytical quality control (QC) program. QC samples are analyzed to document the quality of the associated field sample results. The analytical results of the QC samples provide an indication of laboratory performance during the period in which the project samples were analyzed. The quality control samples include: method blanks, trip blanks, rinsate blanks, laboratory control samples (LCS), surrogate spikes, matrix spike/matrix spike duplicates (MS/MSDs), and field duplicates. The results of the QC samples are evaluated in terms of the following DQOs: precision, accuracy, representativeness, completeness and comparability (PARCC). These criteria, which were described in Section 1.2, provide an indication of data quality and a confidence level that a particular compound might be present in an associated field sample.

Montgomery Laboratories, a division of JMM, is approved by USACE to perform chemical analyses for project samples. Samples analyzed by Montgomery Laboratories included field samples from soil, sediment, groundwater and surface water media, aqueous phase UST contents, and associated QC samples. Robb & Moody, Inc., performed non-chemical fuel analyses of UST product samples. As an additional means to support the quality of field sample results, quality assurance (QA) samples were analyzed by the USACE's Missouri River Division (MRD) Laboratory. QA samples were collected as field split samples from the same location and at the same time as the corresponding field QC samples were collected. Since Montgomery Laboratories and MRD use standard analytical methods and units of measure for all analyses, the results of the QA samples may be used to evaluate the performance of Montgomery Laboratories during the analytical period.

This *ARR* only addresses QC data generated by Montgomery Laboratories. The analytical methods performed by Robb & Moody, Inc. did not require preparation and analysis of QC samples. The results of field split samples will be used by MRD to prepare a project QA report. Therefore, data generated for this project from Robb & Moody and MRD will not be evaluated in this report. The following sections present a review of QC data for each analytical method.

3.1 VOLATILE ORGANIC COMPOUNDS QC DATA

Field and laboratory quality control (QC) samples were prepared and analyzed to support the volatile organic compound (VOC) data presented earlier in Section 2 in Tables 2-2 through 2-5. Twelve field samples and 12 QC samples were collected and analyzed for VOCs in support of the LACV-30 project. Evaluation of this data has been segregated by the DQOs (precision, accuracy, representativeness, completeness and comparability).

3.1.1 Precision

Precision is a measure of the reproducibility of analytical results under a given set of conditions. Precision is expressed as the relative percent difference (RPD), whereby

$$RPD = \frac{|D_1 - D_2|}{\frac{1}{2}(D_1 + D_2)} \times 100$$

where D_1 and D_2 are the reported concentrations for sample duplicate analyses.

Laboratory precision was evaluated by calculating the RPD between MS/MSD pairs and paired LCS results (where applicable) and comparing the results to acceptable QC criteria presented in the *Final Chemical Data Acquisition Plan (CDAP)* (JMM, 1990). Analytical precision outside acceptable QC limits may be attributed to factors such as poor instrument performance, inconsistent application of method protocols, sample heterogeneity and matrix interferences. In addition, a combination of laboratory precision and field sampling precision was evaluated by calculating the RPD for field sample duplicate pairs. Poor precision of field duplicate samples may be attributed to the analytical factors previously mentioned and sample collection factors (e.g., inconsistent procedures employed for sample collection, handling or storage). Standard procedures, as outlined in the *CDAP*, were used to minimize potential imprecision related to sample collection factors.

3.1.1.1 MS/MSD and LCS Samples. The primary means for assessing QC precision was to calculate and evaluate the RPD from the percent recovery of spiked compounds for MS/MSD sample pairs. In the absence of sufficient sample volume to analyze an MS/MSD pair, two LCS samples were analyzed instead.

An MS sample and an MSD sample are separate aliquots taken from a single field sample which are spiked with target analytes prior to sample preparation and analyses. These samples are used to measure the efficiency of all steps of the analytical method in recovering target analytes from an environmental matrix. An LCS is similar to an MS/MSD sample in that the LCS is spiked with the same target analytes prior to sample preparation and analyses. However, the LCS is a controlled, interference-free matrix, rather than an aliquot of a field sample. Laboratory reagent water is used to prepare aqueous VOC LCS, while non-aqueous LCS is prepared with sand which is approved by the American Society for Testing and Materials (ASTM) for its homogeneity. LCS is used to measure the efficiency of all steps of the analytical method in recovering target analytes from a controlled matrix in the absence of matrix interferences.

Acceptable QC criteria for MS/MSD and LCS are presented in Table 3-1. MS/MSD, LCS and method blank data generated for VOC analytical batches are presented in Appendix C, Table C-1. An analytical batch is designated in Appendix C tables by blocks separated with horizontal shaded areas. Vertical shaded areas separate samples included in the analytical batch (on the left) from QC

TABLE 3-1
QC ACCEPTANCE CRITERIA FOR VOC
MS/MSD AND LCS SAMPLES

Analyte	QC LIMITS (%) ^(a)					
	Water			Soil/Sediment		
	MS/MSD	LCS	RPD	MS/MSD	LCS	RPD
1,1-dichloroethene	61-145	51-114	<14	59-172	37-156	<22
trichloroethene	71-120	70-126	<14	62-137	58-142	<24
benzene	76-127	68-118	<11	66-142	60-156	<21
toluene	76-125	58-121	<13	59-139	57-147	<21
chlorobenzene	75-130	57-141	<13	60-133	57-166	<21

(a) MS/MSD and LCS QC acceptance criteria are expressed as percent recovery values.

data generated for the batch (on the right). Data that did not meet acceptable QC criteria (Table 3-1) are indicated in bold italicized values in Table C-1, as they are in the other tables in Appendix C.

A total of four batches of VOC samples were analyzed for this project; one contained solid matrix samples and the other three contained aqueous matrix samples. Precision was evaluated using MS/MSDs for the solid batch and the first two aqueous batches. Due to insufficient volume of sample water available, an LCS pair was analyzed with the third aqueous batch to monitor precision.

All precision criteria were met for VOC sample batches with MS/MSD pairs used as measures of analytical precision. The aqueous sample batch with an LCS pair (analyzed on 2/11/91), however, was outside the precision QC limits for benzene, toluene, and chlorobenzene. Because the accuracy criteria for this sample were met and LCS precision is not affected by matrix interferences, the precision excursions for this batch are most likely the result of analytical variability.

3.1.1.2 Field Duplicates. Field duplicate sample results provide information on the overall precision of the analytical program, including the precision associated with both sampling and analytical activities. Without additional information, often it is not possible to identify the specific source of imprecision. Possible sources include sample heterogeneity, improper handling of samples, or imprecise preparation or analysis of the samples. Unlike other types of QC samples that include a spike of target or non-target analytes, substantially fewer positive results usually are obtained for field duplicate samples, particularly for organic compounds. However, the information that is obtained from field duplicates is of substantial value. First, results do not include bias introduced into the analytical system due to problems associated with spiking analytes into a sample matrix (particularly soil or product matrices). Second, although the number of positive duplicate sample results may be small, generally they are representative of the larger data set in terms of analytes and concentration levels. This assumes that the field duplicates collected at a rate of approximately 10 percent of the total number of samples are relatively well distributed.

The precision of field duplicate sample pairs is evaluated by calculating the RPD between the field sample and field duplicate sample and comparing the RPD to precision criteria established in the *CDAP*. The RPD calculation is not possible when the compound is detected in one sample, but not detected in the associated duplicate or original sample.

If the RPD of a field sample/duplicate sample pair exceeds the relevant QC criterion, then the RPD of the associated MS/MSD or LCS pair for the analytical batch was checked to determine if the duplicate imprecision was the result of analytical factors. If the MS/MSD and/or LCS precision was within acceptable QC limits, the duplicate imprecision was attributed to matrix heterogeneity and/or field sample handling-induced imprecision. Examples of matrix heterogeneity include multiple soil types and uneven contaminant distribution in soil sampling devices. Sample handling-induced imprecision sources can include volatilization of contaminant during transfer of samples from sample collection devices to sample containers.

A summary of VOC duplicate results for compounds detected in the field sample/duplicate sample pair is presented in Table 3-2. The RPD met acceptable QC criteria for chloroform, but was unable to be evaluated for carbon disulfide since this compound was not detected in the duplicate sample. Therefore, field sample/duplicate sample precision was acceptable for VOC samples.

TABLE 3-2
VOC FIELD DUPLICATE SUMMARY^(a)

Sample Location	Matrix	Field Sample Concentration	Duplicate Sample Concentration	RPD	RPD Acceptable?
SLCVMW1401	aqueous				
chloroform (µg/l)		2.6	2.4	8	Yes
carbon disulfide (µg/l)		0.60	<0.5	NC	NA

(a) Only compounds detected in the field and/or duplicate sample are presented.

NC = Not calculated. RPD was not calculated when the field and/or duplicate sample concentration was not detected.

NA = Not applicable.

3.1.2 Accuracy

Accuracy is the nearness of a result to the true value. Accuracy was assessed through the analysis of MS/MSD, LCS and surrogate spike samples. Percent recovery was calculated using the equation,

$$\frac{A-B}{C} \times 100$$

where: A = concentration of the spike compound measured in the spiked sample
B = concentration of the spike compound measured in the unspiked sample
C = concentration of the spike compound

Quality control acceptance criteria used to review percent recoveries for MS/MSD and LCS VOC samples were presented in Table 3-1, and acceptance criteria for surrogate spike samples are presented in Section 3.1.2.2. Acceptance limits for MS/MSD samples are specified by the analytical method. Acceptance limits for LCS samples are evaluated statistically from 25 consecutive LCS data points. All 25 points must pass a Dixon outlier test before warning and control limits are calculated as 2 to 3 standard deviations from the mean, respectively. Limits are recalculated quarterly, semi-annually, or annually depending on the frequency of the analysis. Limits are evaluated separately for soil, water and product matrices.

Poor accuracy provides an indication of bias in which the reported data may overestimate or underestimate the actual concentration of compounds detected and quantitation limits reported in field samples. An evaluation of VOC data with respect to accuracy is discussed below.

3.1.2.1 MS/MSD and LCS Samples. MS/MSD and LCS recoveries met the project QC accuracy criteria (Table 3-1) for all VOC sample batches. The MS/MSD and LCS data for this project are presented in Appendix C, Table C-1.

3.1.2.2 Surrogate Spike Results. Surrogate spike analyses were performed in association with all VOC samples analyzed using SW-846 Method 8240 (EPA, 1986). The surrogate spike recoveries provide an indication of data accuracy, and the results are used to monitor preparation and analysis of VOC samples. Surrogate recoveries outside acceptable QC limits provide an indication of possible matrix interference effects.

There were three surrogates added to each sample submitted for VOC analysis. The VOC surrogate spikes were bromofluorobenzene, 1,2-dichloroethane-d4, and toluene-d8. The surrogate spike recoveries for VOC analyses were compared to the limits stipulated in SW-846 Method 8240, which are:

<u>Surrogate</u>	<u>Solid Matrix</u>	<u>Aqueous Matrix</u>
Bromofluorobenzene	74 to 121 percent	86 to 115 percent
1,2-Dichloroethane-d4	70 to 121 percent	76 to 114 percent
Toluene-d8	81 to 117 percent	88 to 117 percent

The surrogate spike recoveries for all VOC samples including field duplicates and MS/MSD samples are presented in Table D-1 of Appendix D. The surrogate spike recovery for all VOC analyses were within the acceptable QC limits required by the method

3.1.3 Representativeness

Representativeness is a qualitative parameter which expresses the degree to which the sample data represent a characteristic of a population, parameter variations at a sampling point or an environmental condition. Method blanks, rinsate blanks and trip blanks were collected and analyzed for VOCs to determine if contamination sources not associated with the environmental conditions had entered the sampling and analysis process. Trip blanks are analyzed only for VOC samples. A further description of these QC samples and an evaluation of any VOC contaminants detected in these samples is provided in the sections immediately following.

3.1.3.1 Method Blanks. A method blank sample is a laboratory grade water or solid matrix that contains all of the method reagents and has been processed through all steps of sample preparation and analysis. This QC sample is prepared and analyzed with every analytical batch of samples and is used to measure the combined contamination from the laboratory source water, instrument, reagents and sample preparation steps. Method blanks must remain below the method reporting level (MRL) for every analyte in the analytical method, with the exception of common laboratory and field contaminants including methylene chloride, methyl ethyl ketone, acetone, toluene and Freon. If an analyst notices an increase in the method blank concentration which is beginning to approach the MRL, the source of contamination is investigated before further analyses are performed. Reported field sample data may be considered questionable if the concentration of the compound detected in the method blank sample was also detected in the field sample at a concentration within five times that which was detected in the method blank sample.

Four analytical VOC batches and, hence, four method blank samples, were analyzed for VOCs. As indicated in Table C-1, Appendix C, VOC compounds were not detected in any of these method blank samples.

3.1.3.2 Rinsate Blanks. Rinsate blank samples are used to identify contamination originating from sampling equipment and possible cross-contamination originating from inadequate decontamination of sample collection devices. Rinsate blanks consist of analyte-free water poured over or through the sample collection device and collected in a sample container for laboratory analysis. Rinsate blanks were collected after the sampling device had been decontaminated, per the standard procedures outlined in JMM's *CDAP*. Rinsate blank samples were analyzed for the same parameters as field samples.

One rinsate blank sample, SLCVMW1401 RB, was analyzed for VOCs. Chloroform was detected in this sample at 49 µg/l. However, chloroform and dichlorobromomethane were also detected in the Installation water sample and the distilled water sample at slightly greater concentrations than that detected in the rinsate blank sample. This suggests that the presence of chloroform and dichlorobromomethane in the rinsate blank sample was due to the presence of these compounds in the source water (i.e., Installation and distilled) used for decontamination purposes.

Chloroform was also present in the associated groundwater sample SLCVMW1401 at a concentration of 2.6 µg/l. Since chloroform was present in the associated rinsate blank sample and source water samples, it is likely that chloroform was introduced into sample SLCVMW1401 through decontamination waters. Therefore, the reported chloroform concentration of 2.6 µg/l in SLCVMW1401 may be qualified as a suspect concentration.

3.1.3.3 Trip Blanks. Trip blanks are samples used to identify possible sample contamination originating from sample transport, shipping and site conditions. A trip blank is a sample container filled in the laboratory with reagent-grade water, and preserved to a pH less than 2 with hydrochloric acid. The trip blank is transported to the site, stored with the aqueous VOC field samples, and returned to the laboratory for analysis. The trip blank container is filled completely in the laboratory with no air bubbles and is not opened until returned to the laboratory.

TABLE 3-3
TRIP BLANK SUMMARY^(a)

Sample Date	Sample ID	Matrix	VOC Concentrations ($\mu\text{g/l}$) ^(b)	
			2-butanone	toluene
01/24/91	SLCV DI TB		NA (Cancelled by Field Staff)	
	SLCV DI	aqueous	<10	<5.0
	SLCV IW	aqueous	<10	<5.0
01/29/91	SLCV MW1401 TB		<1.0	<0.50
	SLCV MW1401	aqueous	<1.0	<0.50
	SLCV MW1401 D	aqueous	<1.0	<0.50
	SLCV MW1401 MS	aqueous	NA (Spiked Sample)	
	SLCV MW1401 MSD	aqueous	NA (Spiked Sample)	
01/29/91	SLCV MW1401 RB TB		NA (Sample Lost)	
	SLCV MW1401 RB	aqueous	<5.0	<2.5
01/30/91	SLCV MW1403 TB		<1.0	<0.50
	SLCV MW1402	aqueous	<1.0	<0.50
	SLCV MW1403	aqueous	<1.0	<0.50
01/30/91	SLCV MW1404 TB		9.6	1.2
	SLCV MW1404	aqueous	<1.0	<0.50

- (a) Trip blanks and field VOC samples stored and shipped in the same cooler are presented in groups on this table.
 (b) The only two VOC compounds detected in the LACV-30 trip blank samples were 2-butanone and toluene.

NA = Not Analyzed.

Trip blanks are analyzed only for VOCs. Each cooler shipped to the laboratory which contained aqueous VOC samples included a trip blank sample. A trip blank analysis summary for this project is presented in Table 3-3.

Five trip blank samples were submitted to Montgomery Laboratories. The analysis of one sample, SLCVDI TB, was cancelled by authority of the field staff since a sufficient number of trip blank samples were already collected. Trip blank, SLCVMW1401 RB TB, was lost at the laboratory and, therefore, was not analyzed. Therefore, three trip blank samples were analyzed. The only VOC compounds detected in the sample contained in the cooler with this trip blank, SLCVMW1401 RB, were chloroform and dichlorobromomethane. As discussed in Section 3.1.3.2, the source of these compounds was probably the Installation water and/or distilled water used in the decontamination process. Therefore, the loss of the trip blank, SLCVMW1401 RB TB, should not have an adverse effect on data quality.

VOC compounds were not detected in trip blank samples, SLCVMW1401 TB or SLCVMW1403 TB. 2-butanone and toluene were detected in SLCVMW1404 TB at 9.6 and 1.2 µg/l, as indicated in Table 3-3. However, these compounds were not detected in the associated field sample stored and shipped in the same cooler as the trip blank. Therefore, detections of VOC compounds in SLCVMW1404 TB should not adversely impact data quality.

3.1.4 Completeness

Completeness is defined as the percentage of acceptable data relative to the total number of analyses conducted. This parameter is evaluated to ensure that an acceptable quantity of data was obtained so that a valid scientific site assessment can be completed. The goal for completeness for all QC parameters, except for meeting holding times, is 90 percent. The goal for meeting holding times is 95 percent.

There was a total of 12 field samples collected for VOC analyses during the LACV-30 field activities. There were an additional 12 QC samples analyzed to support the quality of the field samples. The QC samples consist of field duplicates, blanks and MS/SMD samples. One QC sample was lost, SLCVMW1401 RB TB, and the analysis of SLCVDI TB was cancelled, resulting in a completeness of 92 percent for VOC samples. This completeness exceeds 90 percent, thereby attaining the goal for the project.

The number of field samples analyzed within the holding times specified in the *CDAP* is also considered when evaluating completeness. A summary of the sample holding times for the VOC analyses is provided in Appendix E, Table E-1. The analytical holding time for soil and water media samples is 14 days. The holding time period is calculated from the date of sampling to the date of analysis. All sample holding times were met for project VOC samples, thereby exceeding the goal of 95 percent completeness.

3.1.5 Comparability

The comparability criterion is a quality characteristic which is an expression of the confidence with which one data set can be compared to another. The primary analytical comparability issues between data sets are concerned with analytical procedures and concentration units. Data comparability was maximized in the laboratory by using standard analytical methods and standard units of measurement, as specified by Method 8240.

The detection limit for each analysis is defined in terms of the Method Reporting Limit (MRL). MRLs for VOCs identify the minimum concentration of analyte that can be detected with a known confidence level. The MRLs for VOC Method 8240 are presented in Table 3-4.

TABLE 3-4
METHOD REPORTING LIMIT FOR VOCS
METHOD 8240

Analyte	Water Matrix μg/L	Soil Matrix mg/kg
Acetone ^(a)	10	0.25
Acrolein	1	0.025
Acrylonitrile	1	0.025
Benzene	0.5	0.01
Bromoform	0.5	0.01
2-Butanone (MEK) ^(a)	1	0.025
Carbon Disulfide ^(a)	0.5	0.01
Carbon Tetrachloride	0.5	0.01
Chlorobenzene	0.5	0.01
Chloroethane	1	0.025
2-Chloroethylvinylether	1	0.025
Chloroform	0.5	0.01
Dibromochloromethane	0.5	0.01
1,2-Dichlorobenzene	0.5	0.01
1,3-Dichlorobenzene	0.5	0.01
1,4-Dichloroethene	0.5	0.01
Dichlorobromomethane	0.5	0.01
1,1-Dichloroethane	0.5	0.01
1,2-Dichloroethane	0.5	0.01
1,1-Dichloroethene	0.5	0.01
cis-1,2-Dichloroethene	0.5	0.01
trans-1,2-Dichloroethene	0.5	0.01
1,2-Dichloropropane	0.5	0.01
cis-1,3-Dichloropropene	0.5	0.01
trans-1,3-Dichloropropene	0.5	0.01
Ethylbenzene	0.5	0.01
2-Hexanone ^(a)	1	0.025
Methyl Bromide	1	0.025
Methyl Chloride	1	0.025
4-Methyl-2-Pentanone (MIBK) ^(a)	1	0.025
Methylene Chloride	5	0.1
Styrene ^(a)	0.5	0.01
1,1,2,2-Tetrachloroethane	0.5	0.01
Tetrachloroethane	0.5	0.01
Tetrahydrofuran ^(a)	10	0.25
Toluene	0.5	0.01
1,1,1-Trichloromethane	0.5	0.01
1,1,2-Trichloromethane	0.5	0.01
Trichloromethane	0.5	0.01
Trichlorofluoromethane	1	0.025
Vinyl Acetate ^(a)	5	0.1
Vinyl Chloride	1	0.025
m,p-Xylenes	0.5	0.01
o-Xylene ^(a)	0.5	0.01

(a) Quantification of Hazardous Waste Substance List compounds based on single point calibration.

During the analysis of field samples collected at LACV-30 and ATGAS, three samples required dilution in order to meet analytical method requirements for quantification. When samples are diluted, the analytical results are reported as having higher detection limits. This results in a decreased confidence level that a certain contaminant may be absent in the sample, since a nondetected concentration at a higher detection limit does not necessarily indicate the compound would not be detected above the MRL if no dilution had been performed. Sample dilutions are usually required when high concentrations of target analytes or contaminant matrix interferences may be present. The review and assessment of detection limits reported for each analysis is important when comparing the analytical results of different samples for compounds of potential concern.

The VOC analyses requiring dilution are summarized in Table 3-5. These samples were diluted due to high concentrations of chloroform present in the samples.

3.1.6 Summary of VOC Analyses

The analytical precision of VOC data was assessed by means of analyzing duplicate samples in the four analytical VOC batches. For three of the four analytical batches, the laboratory used a MS and MSD sample pair to evaluate precision by calculating a RPD between MS and MSD samples. When it was not possible, as it was in one batch for the LACV-30 project, to include an MS/MSD sample in an analytical batch, the laboratory defaulted to using two LCS samples to evaluate precision. In addition to MS/MSD and duplicate LCS, field duplicates were collected and analyzed for approximately one in ten field samples to evaluate the combined field and analytical precision.

The analytical precision for VOCs was acceptable for three of four analytical batches. The poor precision of the two LCS samples in one analytical batch appears to be an isolated occurrence rather than an indication of poor analytical performance. In addition, the field sample/duplicate sample pair met acceptable precision criteria. As a result, analytical precision for VOC analyses is considered acceptable.

The accuracy of the VOC results is assessed by means of spike recoveries from MS, MSD, LCS, and surrogate samples. The MS/MSD, LCS and surrogate spike recoveries were acceptable for all project VOC analyses. Therefore, the accuracy of VOC analyses is considered acceptable.

The representativeness of the VOC analyses was evaluated by means of method blank, trip blank and rinsate blank results. There were no positive detections in the method blank or trip blank samples which resulted in analytical data being considered suspect. There was one groundwater sample (SLCVMW1401) in which the reported concentration of chloroform was considered suspect due to corresponding rinsate blank results. However, the representativeness of the overall sample data is considered acceptable.

In summary, the completeness for the analytical data is a measure of project data that is considered acceptable. Analysis was completed for 92 percent of the VOC samples scheduled for analysis. There were two trip blank samples that were not analyzed. The omission of these samples, however, did not affect the data review process. All VOC analyses were completed within the holding time required by Method 8240. Since the project goal for holding times was 95 percent, the completeness of the VOC data is considered acceptable.

The comparability criterion is evaluated based on the analytical procedures and comparison of one data set to another data set. Since Method 8240 was used to analyze all project VOC samples, the comparability of the analytical data is considered acceptable.

TABLE 3-5
VOC SAMPLES REQUIRING DILUTION

Sample ID	Matrix	Dilution
SLCVDI	aqueous	1:10
SLCVIW	aqueous	1:10
SLCVMW1401 RB	aqueous	1:5

3.2 BASE/NEUTRAL AND ACID EXTRACTABLES QC DATA

Field and laboratory QC samples were prepared and analyzed to review BNA data as reported in Tables 2-6 through 2-9. Eighteen field samples and 11 QC samples were collected and analyzed for BNAs in support of the LACV-30 project. Evaluation of BNA QC data with respect to precision, accuracy, representativeness, completeness and comparability criteria is presented in the following sections.

3.2.1 Precision

As discussed in Section 3.1.1, laboratory precision may be assessed by evaluating MS/MSD and LCS paired samples whereas combined laboratory and field precision may be assessed through an evaluation of field sample/duplicate sample pairs. An evaluation of MS/MSD, LCS and field sample/duplicate sample pairs was completed for QC data generated for BNA samples. Acceptable QC criteria for MS/MSD and LCS samples are given in Table 3-6. A summary of BNA MS/MSD and LCS data is provided in Appendix C, Table C-2 and unacceptable RPD values are indicated in a bold and italicized font.

3.2.1.1 MS/MSD and LCS Samples. Seven analytical batches were analyzed for BNAs; two contained solid matrix samples and five contained aqueous samples. Precision for both solid matrix batches and one aqueous batch was evaluated using MS/MSDs, while LCS samples were used for two of the aqueous sample batches. Only one LCS result was available for the remaining two aqueous batches, so a measure of precision was not possible for these batches.

All precision criteria were met for the BNA sample batches using MS/MSD pairs as a measure of analytical precision. The only sample batch that did not meet precision criteria was the aqueous sample batch with an LCS pair analyzed on 3/20/91. The RPD for pyrene in this batch was outside the acceptable precision criterion for this compound. While this imprecision may indicate possible analytical variability, no BNA compounds were detected in the samples analyzed in this batch. Therefore, it is unlikely that this imprecision has a significant effect on the quality of the data for this batch.

3.2.1.2 Field Duplicates. A definition of field duplicate samples and their analyses were presented earlier in Section 3.1.1.2. A summary of BNA field duplicate results is presented in Table 3-7. BNA compounds were not detected in field sample/duplicate sample pairs, so observations concerning the combined laboratory and field sampling precision are not possible.

3.2.2 Accuracy

As discussed in Section 3.1.2, accuracy is the nearness of a result to the true value. This parameter provides an indication of whether the reported data may overestimate or underestimate the true concentration. QC acceptance criteria, which were presented in the *CDAP* or statistically derived, were used to validate percent recovery values of spiked compounds. Results of this evaluation are provided below.

3.2.2.1 MS/MSD and LCS Samples. All BNA LCS recoveries met the project QC accuracy criteria presented in Table 3-6. MS/MSD recoveries in the two sample batches containing solid matrix samples (analyzed on 2/18/91 and 2/20/91) did not meet the project accuracy criterion for pentachlorophenol. Specifically, the MS and MSD recoveries of the 2/18/91 batch and the MS recovery of the 2/20/91 batch exceeded the upper QC limit for this compound. LCS samples were also analyzed for both of these batches and the pentachlorophenol recoveries for both batches were acceptable. Therefore, the poor MS/MSD recoveries for these two batches is probably the result of matrix-related effects.

TABLE 3-6
ACCEPTABLE QC CRITERIA FOR BNA
MS/MSD AND LCS SAMPLES

Analyte	QC LIMITS (%) ^(a)					
	Water			Soil/Sediment		
	MS/MSD	LCS	RPD	MS/MSD	LCS	RPD
acenaphthene	46-118	24-102	<31	31-137	22-97	<19
1,4-dichlorobenzene	36-97	25-99	<28	28-104	23-74	<27
2,4-dinitrotoluene	24-96	22-121	<38	28-89	27-132	<47
n-nitroso-di-n-propylamine	41-116	21-110	<38	41-126	15-112	<38
pyrene	26-127	11-119	<31	35-142	9-143	<36
1,2,4-trichlorobenzene	39-98	24-117	<28	38-107	13-101	<23
2-chlorophenol	27-123	37-95	<40	25-102	16-82	<50
2-nitrophenol	10-103	10-103	<50	11-114	13-87	<50
pentachlorophenol	9-102	22-137	<50	17-109	21-146	<47
phenol	12-89	18-102	<42	26-90	11-89	<35
4-chloro-3-methylphenol	23-97	35-90	<42	26-103	23-98	<33

(a) MS/MSD and LCS QC criteria are expressed as percent recovery values.

TABLE 3-7
BNA FIELD DUPLICATE SUMMARY

Sample Location	Matrix	Field Sample Concentration	Duplicate Sample Concentration	RPD	RPD Acceptable?
SLCVSD1436 (C3)	solid	ND	ND	NC	NA
SLCVMW1401	aqueous	ND	ND	NC	NA

ND = Not detected.

NC = Not calculated. RPD was not calculated when the field and/or duplicate sample concentration was not detected.

NA = Not applicable.

3.2.2.2 Surrogate Spike Results. Surrogate spike analyses were performed in association with all BNA samples analyzed using SW-846 Method 8270 (EPA, 1986). The surrogate spike recoveries provide an indication of data accuracy, and the results are used to monitor preparation and analysis of BNA samples. Surrogate recoveries outside acceptable QC limits provide an indication of possible matrix interference effects. The surrogate spike recoveries for all BNA samples, including field duplicates and MS/MSD samples, are presented in Table D-2 of Appendix D.

There were six surrogate spikes added to each sample submitted for BNA analysis. The BNA surrogates are nitrobenzene-d5, 2-fluorobiphenyl, terphenyl-d14, phenol-d5, 2-fluorophenol, and 2,4,6-tribromophenol. The surrogate spike recoveries for BNA analyses were compared to the limits stipulated in SW-846 Method 8270, which are:

<u>Surrogate</u>	<u>Solid Matrix</u>	<u>Aqueous Matrix</u>
Nitrobenzene-d5	23 to 120 percent	35 to 114 percent
2-Fluorobiphenyl	30 to 115 percent	43 to 116 percent
Terphenyl-d14	18 to 137 percent	33 to 141 percent
2-Fluorophenol	25 to 121 percent	21 to 100 percent
Phenol-d5	24 to 113 percent	10 to 94 percent
2,4,6-Tribromophenol	19 to 122 percent	10 to 123 percent

The surrogate spike recoveries for all BNA analyses outside the QC limits required by the method are presented in Table 3-8.

The six BNA samples with surrogate recoveries outside acceptable QC limits were reextracted and reanalyzed. The reanalysis of samples SLCVMW1401 and SLCVMW1401 D resulted in a continued problem with the terphenyl-d14 surrogate. Since BNA compounds were not detected in the original analysis or reanalysis of both samples, the surrogate problem is not expected to compromise data quality. The surrogate results for the second analysis of sample SLCVMW1401 RB were within the QC limits specified by the method. The surrogate recoveries associated with reanalysis of samples SLCVMW1403, SLCVMW1404, and SLCVIW had continued problems with two or more surrogates outside QC limits. Since BNA compounds were not detected in the original or reanalyzed samples, the QC problems associated with surrogate recoveries are not expected to adversely affect data quality. The reanalysis of samples with poor surrogate recoveries confirmed the results of the original analysis. Therefore, the analytical results are considered acceptable.

3.2.3 Representativeness

Method blank samples and a rinsate blank sample were collected and analyzed to determine if contamination sources not associated with the environmental conditions had entered the sampling and analysis process for BNAs.

3.2.3.1 Method Blanks. One method blank was prepared and analyzed per each BNA analytical batch. No BNA compounds were detected in any of the six method blank samples analyzed.

3.2.3.2 Rinsate Blanks. One rinsate blank sample, SLCVMW1401 RB, was collected and analyzed for BNAs. No BNA compounds were detected in this sample.

TABLE 3-8
SUMMARY OF BNA SURROGATE QC PROBLEMS

Sample ID	Matrix	Surrogate	Recovery (%)
SLCVMW1401	aqueous	Terphenyl-d14	19
SLCVMW1401 D	aqueous	Terphenyl-d14	30
		2-Fluorophenol	114
		Phenol-d5	107
SLCVMW1401 RB	aqueous	2-Fluorophenol	115
		Phenol-d5	106
SLCVMW1403	aqueous	Phenol-d5	98
SLCVMW1404	aqueous	2-Fluorophenol	103
		Phenol-d5	101
SLCVIW	aqueous	Nitrobenzene-d5	126
		2-Fluorophenol	102

3.2.4 Completeness

There were a total of 18 field samples collected for BNA analyses during the field activities. There were an additional 11 QC samples analyzed to support the quality of the field samples. The analysis of BNA and associated QC samples was completed for 100 percent of the samples, thereby exceeding the project goal of 90 percent completeness.

The number of field samples analyzed within the holding times specified in the *CDAP* is also considered when evaluating completeness. A summary of the sample holding times for the BNA analyses is provided in Appendix E, Table E-2. The analytical holding time from the sample collection date to sample extraction date is 14 days for soil media and 7 days for water media. In addition, the sample extract must be analyzed within 40 days from extraction date. All BNA sample holding times were met with the exception of six samples. These samples met holding times during the initial analysis, but had to be reextracted due to poor surrogate spike recoveries. The reextraction procedure occurred after the allowable extraction holding time. Analytical results for the reextracted samples confirmed the original sample results, as indicated in Table 3-9. Therefore, exceedance of holding times for reextraction did not impact quantification of reported data. In general, sample holding times were met for the project BNA samples, exceeding the goal of 95 percent completeness.

3.2.5 Comparability

The comparability criterion is a quality characteristic which is an expression of the confidence with which one data set can be compared to another. The primary comparability issues are concerned with whether field sampling techniques, analytical procedures and concentration units of one data set can be compared with another. Data comparability was maximized in the laboratory by using standard analytical methods and standard units of measurements, as specified in the methods.

The detection limit for each analysis is defined in terms of the MRL. MRLs for BNAs identify the minimum concentration of analyte that can be detected with a known confidence level. The MRLs for BNA compounds using Method 8270 are presented in Table 3-10. Dilution of BNA samples was not required for the LACV-30 and ATGAS projects.

3.2.6 Summary of BNA Analyses

The analytical precision of BNA data is assessed by means of duplicate samples. Analytical precision was assessed by evaluating the RPD for MS/MSD of LCS sample pairs. In addition, analytical and field sampling precision was evaluated by analyzing two field duplicate BNA samples. Field duplicates were collected and analyzed for approximately one in 10 field samples. Since a duplicate pair of samples are subjected to the same analytical procedures as the associated field samples, MS/MSD and field duplicate paired samples measure the precision of the analysis.

The analytical precision, using the results of the MS/MSD samples, was acceptable for the three analytical sample batches in which a MS/MSD sample was analyzed. The RPD for one sample batch using LCS sample pairs had one analyte outside acceptable QC limits. Since the analytical batch with poor LCS precision contained reanalyzed BNA samples that confirmed the original results, this problem should not adversely affect data quality. The analytical precision for BNA analyses is considered acceptable.

Two field sample/duplicate sample pairs were collected and analyzed to evaluate the combined effect of analytical and field sampling precision. BNA compounds were not detected in the two field duplicate sample pairs, so precision for the field duplicate samples was not quantifiable.

TABLE 3-9
SUMMARY OF ORIGINAL/REANALYZED
BNA SAMPLES WITH HOLDING TIME PROBLEMS

Sample ID	BNA Analytes	Days to Extraction	Allowable Holding Time For Extraction (days)	Days to Analysis	Allowable Holding Time For Analysis (days)
SLCVMW1401	ND	7	7	17	40
SLCVMW1401(a)	ND	<i>34</i>	7	16	40
SLCVMW1401 D	ND	7	7	17	40
SLCVMW1401 D(a)	ND	<i>34</i>	7	16	40
SLCVMW1401 RB	ND	7	7	17	40
SLCVMW1401 RB(a)	ND	<i>41</i>	7	10	40
SLCVMW1403	ND	6	7	17	40
SLCVMW1403(a)	ND	<i>40</i>	7	11	40
SLCVMW1404	ND	6	7	17	40
SLCVMW1404(a)	ND	<i>40</i>	7	10	40
SLCVIW	ND	4	7	26	40
SLCVIW(a)	ND	<i>39</i>	7	16	40

(a) Samples reextracted and analyzed due to poor surrogate spike recoveries.

ND: All BNA compounds were below quantification levels.

Note: Italicized, bolded numbers indicate exceedance of holding times.

TABLE 3-10
METHOD REPORTING LIMIT FOR
BNA EXTRACTABLE ORGANICS
METHOD 8270

Analyte	Water Matrix µg/L	Soil Matrix mg/kg
Acenaphthene	5	1
Acenaphthylene	5	1
Aniline	5	1
Anthracene	5	1
Benzidine	50	10
Benzo(a)anthracene	5	1
Benzo(a)pyrene	5	1
Benzo(b)fluoranthene	5	1
Benzo(g,h,i)perylene	10	2
Benzo(k)fluoranthene	5	1
Benzoic Acid	50	10
Benzyl Alcohol	5	1
bis(2-Chloroethoxy)methane	10	2
bis(2-Chloroisopropyl)ether	10	2
bis(2-Chloroethyl)ether	10	2
bis(2-Ethylhexyl)phthalate	20	4
4-Bromophenylphenylether	5	1
Butylbenzylphthalate	5	1
4-Chloroaniline	5	1
2-Chloronaphthalene	5	1
2-Chlorophenol	5	1
4-Chlorophenylphenylether	5	1
Chrysene	5	1
Di-n-butylphthalate	10	2
Di-n-octylphthalate	10	2
Dibenzo(a,h)anthracene	10	2
Dibenzofuran	5	1
1,2-Dichlorobenzene	5	1
1,3-Dichlorobenzene	5	1
1,4-Dichlorobenzene	5	1
3,3-Dichlorobenzidine	50	10
2,4-Dichlorophenol	5	1
Diethylphthalate	5	1
2,4-Dimethylphenol	5	1
Dimethylphthalate	5	1
4,6-Dinitro-o-cresol	50	10
2,4-Dinitrophenol	50	10
2,4-Dinitrotoluene	5	1
2,6-Dinitrotoluene	5	1
Diphenylhydrazine	10	2

TABLE 3-10
(Continued)

METHOD REPORTING LIMIT FOR
BNA EXTRACTABLE ORGANICS
METHOD 8270

Analyte	Water Matrix µg/L	Soil Matrix mg/kg
Fluoranthene	5	1
Fluorene	5	1
Hexachlorobenzene	5	1
Hexachlorobutadiene	10	2
Hexachlorocyclopentadiene	10	2
Hexachloroethane	5	1
Indeno (1,2,3-c,d) pyrene	10	2
Isophorone	5	1
2-Methylnaphthalene	5	1
2-Methylphenol	5	1
4-Methylphenol	5	1
N-Nitrosodi-N-propylamine	5	1
N-Nitrosodimethylamine	5	1
N-Nitrosodiphenylamine	5	1
Naphthalene	5	1
2-Nitroaniline	10	2
3-Nitroaniline	20	4
4-Nitroaniline	20	4
Nitrobenzene	5	1
2-Nitrophenol	5	1
4-Nitrophenol	10	2
p-Chloro-m-cresol	5	1
Pentachlorophenol	10	2
Phenanthrene	5	1
Phenol	5	1
Pyrene	5	1
1,2,4-Trichlorobenzene	5	1
2,4,5-Trichlorophenol	5	1
2,4,6-Trichlorophenol	5	1

The accuracy of the BNA results is assessed by means of spike recoveries from LCS, MS/MSD and surrogate samples. All QC spike recoveries for LCS samples were acceptable. The MS/MSD sample recoveries for pentachlorophenol did not fall within acceptable QC limits for two sample batches. Since the spike recoveries were higher than acceptable QC limits and BNA compounds were not detected in associated samples, the poor MS/MSD recoveries should not affect data quality. All soil samples met acceptable QC surrogate recoveries. Six aqueous field samples had one or more BNA surrogate compounds that did not meet acceptable limits for surrogate recoveries. The laboratory reanalyzed these samples, and the reanalyzed samples confirmed the original results. Therefore, the accuracy of the BNA analysis is considered acceptable.

The representativeness of the BNA analyses was evaluated by means of method blank and rinsate blank results. There were no positive detections in any blank samples. As a result, the representativeness of the BNA sample data is considered acceptable.

The completeness for the analytical data is a measure of project data that meets the project DQOs. Completeness is acceptable if 90 percent of the field samples submitted to the laboratory were analyzed and 95 percent of the holding times were met. All BNA samples submitted to the laboratory were originally analyzed within holding times. Since the reanalyzed sample results confirmed the original data having poor surrogate recoveries, the original results are considered acceptable. Therefore, completeness of the BNA analyses is 100 percent and is considered acceptable.

The comparability criterion is evaluated based on the analytical procedures and comparison of concentration units for a sample with respect to other samples. Since the same analytical procedure (Method 8270) was used for all BNA analyses, the comparability of the analytical data for BNA data is considered acceptable.

3.3 PESTICIDE/POLYCHLORINATED BIPHENYLS QC DATA

The analysis of pesticide compounds was not required for project samples. Samples requiring PCB analysis were inadvertently submitted for pesticide/PCB analysis. Since the mistake was noticed after the analyses were performed, the analytical results and QC data for pesticide/PCB analyses have been presented in this report.

Field and laboratory QC samples were prepared and analyzed to review pesticide/PCB data reported in Tables 2-9 through 2-12. Seventeen field samples and seven QC samples were analyzed for pesticide/PCBs for the LACV-30 and ATGAS projects. Fourteen of the field samples and six QC samples were analyzed in support of the LACV-30 project. Due to problems in sample transport, as described in the *QCSR*, the aqueous phase UST sample (TK1505) and its associated duplicate were recollected and analyzed. The results of the original and resampling data are evaluated in this report. If the resampling of TK1505 is not included, there were three field samples and one QC sample (field duplicate) for the ATGAS project. The following sections present a review of pesticide/PCB QC data with respect to precision, accuracy, representativeness, completeness and comparability DQOs.

3.3.1 Precision

MS/MSD and LCS samples were prepared and analyzed to evaluate laboratory precision, whereas field duplicate samples were collected and analyzed to evaluate the combined laboratory and field sampling precision. QC data used to evaluate the precision of pesticide/PCB analyses are discussed below.

3.3.1.1 MS/MSD and LCS Samples. Six analytical batches were analyzed for pesticide/PCBs during this project; four contained solid matrix samples, and two contained aqueous samples. In addition, one analytical batch containing UST product samples was analyzed for PCBs only. MS/MSD, LCS and method blank results for pesticide/PCBs analyses are presented in Appendix C, Table C-3 and QC criteria for pesticide/PCB MS/MSD and LCS samples are presented in Table 3-11.

The MS/MSD and LCS precision data met acceptable precision criteria for this project with the exception of the batch extracted on 1/31/91 and analyzed on 2/6/91. This batch did not meet the project MS/MSD precision criterion for 4,4-DDT. The MS/MSD pair from this batch was reanalyzed and all precision criteria were met for the reanalysis. Therefore, the MS/MSD imprecision corresponding to the initial analysis should have no impact on the reported data quality.

3.3.1.2 Field Duplicates. A definition of field duplicate samples and their analysis are presented in Section 3.1.1.2. A summary of the pesticide/PCB field duplicate results is presented in Table 3-12. Pesticide/PCBs were not detected in field sample/duplicate sample pairs, so observations concerning the combined laboratory and field sampling precision are not possible.

3.3.2 Accuracy

The percent recovery of compounds spiked in MS/MSD, LCS and surrogate samples was compared to QC acceptance criteria in order to assess the accuracy of the reported data for pesticide/PCB analyses. A discussion of this comparison is provided below.

3.3.2.1 MS/MSD and LCS Data. As indicated in Table C-3 in Appendix C, all pesticide/PCB LCS recoveries met the project QC accuracy criteria (Table 3-11). MS/MSD recoveries in two pesticide/PCB batches containing solid matrix samples (both analyzed on 2/6/91) did not meet all of the project accuracy criteria for all analytes.

The MS and MSD recoveries for lindane and the MSD recovery for 4,4-DDT exceeded the QC accuracy criteria for batch compounds extracted on 1/28/91 and analyzed on 2/6/91. However, the LCS criteria for these compounds were met for this batch; therefore, the poor MS/MSD recoveries are probably the result of matrix-related effects.

The MS and MSD recoveries for 4,4-DDT and endrin and the MS recovery for dieldrin exceeded the QC accuracy criteria for compounds extracted on 1/31/91 and analyzed on 2/6/91. The MS/MSD sample from this batch was reanalyzed and all of the reanalyzed MS/MSD recoveries met the project QC accuracy criteria. The LCS recoveries for this batch also met the project QC accuracy criteria for pesticide/PCB LCS samples.

3.3.2.2 Surrogate Spike Results

Surrogate spike analyses were performed in association with all samples analyzed for pesticide/PCB (Method 8080). The surrogate spike recoveries provide an indication of data accuracy, and the results were used during JMM's data review. Surrogate recoveries outside acceptable QC limits provide an indication of possible matrix interference effects.

There was one surrogate reported for each sample analyzed for pesticide/PCBs, dibutyl chlorendate. The surrogate spike recoveries for pesticide/PCB analyses were compared to the limits from SW-846 Method 8080, which are 24 to 150 percent.

The surrogate spike recoveries for all pesticide/PCB samples, including field duplicates and MS/MSD samples, are presented in Table D-3 of Appendix D. The surrogate spike recoveries for all pesticide/PCB analyses were within the QC limits required by the method, with the exception of

TABLE 3-11

**QC ACCEPTANCE CRITERIA FOR PESTICIDE/PCB
MS/MSD AND LCS SAMPLES**

Analyte	QC LIMITS (%) ^(a)					
	Water			Soil/Sediment		
	MS/MSD	LCS	RPD	MS/MSD	LCS	RPD
Aldrin	40-120	21-140	<22	34-132	30-131	<43
Lindane	58-123	31-156	<15	46-127	27-150	<50
4,4-DDT	38-127	21-161	<27	23-134	28-152	<50
Dieldrin	52-125	47-152	<18	31-134	75-126	<38
Endrin	56-121	64-139	<21	42-139	54-138	<45
Heptachlor	40-131	31-150	<20	35-130	32-130	<31
Arochlor 1254	50-150	66-129	<30	40-160	61-135	<40

(a) MS/MSD and LCS QC acceptance criteria are expressed as percent recovery values.

TABLE 3-12
PESTICIDE/PCB FIELD DUPLICATE SUMMARY

Sample Location	Matrix	Field Sample Concentration	Duplicate Sample Concentration	RPD	RPD Acceptable?
SLCVSD1436(C3)	solid	ND	ND	NC	NA
SATGTK1505(AQ)	aqueous	ND	ND	NC	NA
SATGTK1505(AQ) (R)	aqueous	ND	ND	NC	NA

ND = Not detected.

NC = Not calculated. RPD was not calculated when the field and/or duplicate sample concentration was not detected.

NA = Not applicable.

samples SLCVSD1433 (C3) and SLCVSD1434 (C3), which were both higher than the accepted range. Since pesticide/PCB compounds were not detected in these samples, the high surrogates would have affected the quantitation, but not the detection, of target compounds. Therefore, poor surrogate recoveries associated with these samples should not have an impact on reported data quality.

3.3.3 Representativeness

Method blanks were prepared and analyzed with each pesticide/PCB analytical batch to determine if contamination sources introduced from outside the matrix, and not associated with the environmental conditions, had contaminated the sampling and analysis process. Pesticide/PCB compounds were not detected in any of the method blank samples. Rinsate blank samples were not collected for pesticide/PCB analysis during the LACV-30 and ATGAS projects. In conclusion, the representativeness of the analysis is considered acceptable.

3.3.4 Completeness

There were a total of 14 LACV-30 and three ATGAS field samples analyzed for pesticide/PCB or PCB analyses. There were an additional seven QC samples analyzed to support the quality of the field samples. The analyses of pesticide/PCB samples were completed for 100 percent of the samples, thereby exceeding the 90 percent completeness goal for the project.

The number of samples analyzed within the specified holding times for pesticide/PCB (Method 8080) analyses is also considered when evaluating completeness. A summary of the sample holding times for the pesticide/PCB analyses is provided in Appendix E, Table E-3. The analytical holding time for soil, water and product samples is 14, 7 and 7 days, respectively, from the sample collection date to sample extraction date. The sample extract must be analyzed within 40 days. The analysis for all samples, except two product samples, was performed within specified holding times.

The seven day extraction holding time for product samples presented in the *CDAP* is an advisory limit. The U.S. Army Corps of Engineers (USACE) reference for sample handling requirements does not specify holding times for high concentration samples (USACE, 1989). Since a product sample is considered a high concentration sample, holding times for these samples are considered as advisory limits. Since all pesticide/PCB samples were analyzed and considered acceptable, the project goal of 90 percent completeness was exceeded.

3.3.5 Comparability

The comparability criterion is a quality characteristic which is an expression of the confidence with which one data set can be compared to another. The primary comparability issues are concerned with whether field sampling techniques, analytical procedures and concentration units of one data set can be compared with those of another data set. Data comparability was maximized in the laboratory by using standard analytical methods and standard units of measurement, as specified in the methods.

The detection limit for each analysis is defined in terms of the MRL. MRLs for pesticides/PCBs identify the minimum concentration of analyte that can be detected with a known confidence level. The MRLs for Method 8080 for Pesticides/PCBs are presented in Table 3-13. Dilution of pesticide/PCB samples was not required for the LACV-30 and ATGAS projects and therefore a discussion of pesticide/PCB dilution is not necessary.

TABLE 3-13
 METHOD REPORTING LIMIT
 PESTICIDES/PCB
 METHOD 8080

Analyte	Water Matrix μg/L	Soil Matrix mg/kg
Arochlor 1016	0.5	0.1
Arochlor 1221	0.5	0.1
Arochlor 1232	0.5	0.1
Arochlor 1242	0.5	0.1
Arochlor 1248	0.5	0.1
Arochlor 1254	0.5	0.1
Arochlor 1260	0.5	0.1
BHC, alpha-	0.02	0.02
BHC, gamma- (Lindane)	0.02	0.02
BHC, beta-	0.02	0.02
BHC, delta-	0.02	0.02
Chlordane	0.2	0.04
DDD-p.p.-	0.02	0.02
DDE-p.p.-	0.02	0.02
DDT-p.p.-	0.02	0.02
Dieldrin	0.02	0.02
Endosulfan I (alpha)	0.02	0.02
Endosulfan II (beta)	0.02	0.02
Endosulfan sulfate	0.02	0.02
Endrin	0.01	0.01
Endrin Aldehyde	0.02	0.02
Endrin ketone	0.02	0.02
Heptachlor	0.01	0.01
Heptachlor Epoxide	0.01	0.01
Methoxychlor	0.5	0.5
Toxaphene	0.5	0.5

3.3.6 Summary of Pesticide/PCB Analyses

The analytical precision of pesticide/PCB data is assessed by means of duplicate samples. One MS/MSD sample pair was analyzed per analytical batch. If sufficient sample volume was not available to analyze an MS/MSD pair, the laboratory defaulted to analyzing an LCS pair. Analytical precision was evaluated through analysis of MS/MSD or LCS paired samples. In addition, field duplicate samples were collected to evaluate analytical and sample collection precision. Since original QC and duplicate QC samples are subject to the same analytical procedures as the associated field samples, all three types (i.e., LCS, MS/MSD, field duplicate) of duplicate pairs provide a measure of precision. The analytical precision for all pesticide/PCB analyses is considered acceptable.

The accuracy of the pesticide/PCB results is assessed by means of spike recoveries from LCS, MS/MSD and surrogate samples. All QC spike recoveries for pesticide/PCB LCS samples were acceptable. In addition, only 2 out of 13 pesticide/PCB surrogates did not meet acceptable recovery criteria due to matrix interference. There were two analytical batches which did not meet acceptable MS/MSD accuracy. All other MS/MSD compounds met acceptable guidelines. Therefore, the accuracy of the pesticide/PCB data is considered acceptable.

The representativeness of the pesticide/PCB analyses was evaluated by means of method blank results. Pesticide/PCB compounds were not detected in any of the method blank samples. As a result, the representativeness of the pesticide/PCB sample data is considered acceptable.

The completeness for the analytical data is a measure of project data that is considered acceptable. Completeness is acceptable if 90 percent of the field samples submitted to the laboratory were analyzed and 95 percent of the holding times were met. All pesticide/PCB samples submitted to the laboratory were analyzed and these analyses were performed within acceptable holding times, yielding 100 percent completeness for the projects. The completeness of pesticide/PCB data is considered acceptable.

The comparability criterion is evaluated based on the analytical procedures and comparison of concentration units for a sample with respect to other samples. Since the same analytical procedures were used, which provided the analytical results in consistent units of measurement, the comparability of the pesticide/PCB analytical data is considered acceptable.

3.4 METALS QC DATA

Twenty-three field samples and nine QC samples were collected at the LACV-30 Site and analyzed for priority pollutant total metals and total barium. An additional nine field samples and eight QC samples from the LACV-30 Site were analyzed for dissolved metals. Three field samples and one QC sample were collected from UST contents at the ATGAS Site and analyzed for short list metals (arsenic, cadmium, chromium and lead). Due to problems in sample transport, as described in the QCSR, the aqueous phase UST sample (TK1505) and its associated duplicate were recollected and analyzed. The results of the original and resampling data are evaluated in this report.

The analysis of metals included three different analytical procedures: inductively coupled argon plasma (ICAP) emission, graphite furnace atomic absorption (GFAA), and cold vapor atomic absorption. The ICAP method was used to analyze soil and water media samples for the following metals: silver, barium, beryllium, cadmium, chromium, copper, nickel, antimony and zinc. The GFAA method was used to analyze arsenic, lead, thallium and selenium in water media; for solid media, these metals were analyzed using the ICAP method. Mercury was analyzed for all media using the cold vapor atomic absorption method. Field and laboratory QC samples were prepared and analyzed to support metals data reported in Tables 2-13 through 2-18. An evaluation of metals QC data with respect to PARCC is presented in the following sections.

3.4.1 Precision

As discussed in Section 3.1.1, laboratory and field precision may be assessed through evaluating the RPD value calculated from MS/MSD sample pairs, LCS paired samples, and field duplicate samples. Metals QC data generated for the evaluation of precision is discussed in the following sections.

3.4.1.1 MS/MSD and LCS Samples. QC acceptance criteria for metals is given in Table 3-14. MS/MSD, LCS and method blank data for these methods are presented in Appendix C, Tables C-4, C-5 and C-6. Metals analyses were performed using three analytical methods: ICAP, GFAA and cold vapor method.

Thirteen analytical batches (all of which were aqueous) were analyzed using the GFAA method, ten analytical batches (three of which were solid and seven of which were aqueous) were analyzed using the ICAP method and twelve batches (four of which were solid and eight of which were aqueous) were analyzed using the cold vapor method. Precision was evaluated for all metals batches using LCS pairs. The analysis of one MS/MSD pair for each analytical batch is not required for inorganic methods such as metals analyses. MS/MSD samples were performed at a frequency of approximately one in 20 samples. There were one GFAA, two ICAP, and one cold vapor aqueous batches containing an MS/MSD pair. LCS and MS/MSD precision was acceptable for all metals batches in these projects.

3.4.1.2 Field Duplicates. A definition of field duplicate samples was presented earlier in Section 3.1.1.2. A summary of the total metals and dissolved metals field sample/duplicate sample results is presented in Table 3-15.

The field sample/duplicate sample pair for SATGTK1505 (AQ) (R) was outside acceptable criteria for total lead. LCS precision results were within QC criteria for this analyte. Therefore, duplicate imprecision is probably not related to analytical performance.

The field sample/duplicate sample pair for SLCVMW1401 was outside acceptable criteria for total chromium, lead, and zinc; and dissolved arsenic and zinc. The LCS and MS/MSD sample pairs associated with these samples met acceptable QC criteria for precision. Therefore, duplicate imprecision for these field/duplicate sample pairs is probably not related to analytical performance.

3.4.2 Accuracy

Percent recovery of spiked samples including MS/MSD and LCS paired samples was compared to acceptable QC criteria as a means of measuring accuracy.

MS/MSD and LCS recoveries met the project QC accuracy criteria (Table 3-14) for all metals sample batches. The MS/MSD and LCS data for this project are presented in Appendix C, Tables C-4, C-5 and C-6.

3.4.3 Representativeness

Method blanks and rinsate blanks were collected and analyzed to determine if contamination sources not associated with the environmental condition had entered the sampling and analysis process.

3.4.3.1 Method Blanks. Metals were not detected in method blanks for batches performed using the ICAP, GFAA, or cold vapor methods for either the LACV-30 or the ATGAS project.

TABLE 3-14
QC ACCEPTANCE CRITERIA FOR METALS
MS/MSD AND LCS SAMPLES

Analyte	QC LIMITS (%) ^(a)					
	Water			Soil/Sediment		
	MS/MSD	LCS	RPD	MS/MSD	LCS	RPD
Arsenic	70-130	74-105	<30	65-135	75-100	<35
Lead	70-130	79-115	<30	65-135	80-105	<35
Selenium	70-130	74-100	<30	65-135	67-110	<35
Thallium	70-130	83-110	<30	65-135	71-115	<35
Mercury	70-130	75-117	<20	65-135	78-128	<35
Silver	80-120	70-130	<20	65-135	70-100	<35
Barium	80-120	79-110	<20	65-135	78-110	<35
Beryllium	80-120	78-105	<20	65-135	78-105	<35
Cadmium	80-120	80-110	<20	65-135	77-110	<35
Chromium	80-120	81-105	<20	65-135	81-105	<35
Copper	80-120	81-110	<20	65-135	81-110	<35
Nickel	80-120	80-105	<20	65-135	81-105	<35
Zinc	80-120	78-115	<20	65-135	77-110	<35
Antimony	80-120	67-115	<20	65-135	78-105	<35

(a) MS/MSD and LCS QC acceptance criteria are expressed as percent recovery values.

TABLE 3-15
METAL FIELD DUPLICATE SUMMARY

Sample Location	Matrix	Field Sample Concentration	Duplicate Sample Concentration	RPD	RPD Acceptable?
SLCVSD1436(C3)	solid				
chromium (mg/kg)		1.4	< 1.0	NC	NA
zinc (mg/kg)		8	6.1	27	Yes
SATGTK1505(AQ)	aqueous	ND	ND	NC	NA
SATGTK1505(AQ) (R)	aqueous				
cadmium (mg/l)		< 0.005	0.005	NC	NA
lead (mg/l)		0.32	0.49	42	No
SLCVSW1453 TOT	aqueous				
lead (mg/l)		0.015	0.015	0	Yes
zinc (mg/l)		0.10	0.088	13	Yes
SLCVSW1453 DIS	aqueous				
lead (mg/l)		0.006	0.007	15	Yes
zinc (mg/l)		0.10	0.10	0	Yes
SLCVMW1401 TOT	aqueous				
chromium (mg/l)		0.021	0.014	40	No
copper (mg/l)		0.019	< 0.010	NC	NA
lead (mg/l)		0.025	0.015	50	No
zinc (mg/l)		0.19	0.13	38	No
SLCVMW1401 DIS	aqueous				
arsenic (mg/l)		0.006	0.009	40	No
lead (mg/l)		< 0.002	0.009	NC	NA
zinc (mg/l)		0.07	0.14	67	No

ND = Not detected.

NC = Not calculated. RPD was not calculated when the field and/or duplicate sample concentration was not detected.

NA = Not applicable.

3.4.3.2 Rinsate Blanks. Two rinsate blank samples were collected and analyzed for total and dissolved metals. Total copper was detected in SLCVMW1401 RB at a concentration of 0.014 mg/l. In addition, total copper was detected in the associated field sample, SLCVMW1401, at a concentration of 0.019 mg/l. Since the concentration of copper in SLCVMW1401 (0.019 mg/l) is within five times that which was detected in the rinsate blank sample (0.014 mg/l), the reported copper concentration in the field sample is considered suspect. Metals were not detected in the rinsate blank sample SLCVSW1453 RB.

3.4.4 Completeness

There were a total of 35 field samples collected for metals analyses during the field activities. There were an additional 18 QC samples analyzed to support the quality of the field samples. The analyses of metals samples were completed for 100 percent of the samples, thereby exceeding the 90 percent completeness goal for the project.

The number of samples analyzed within the specified holding times for metals analyses is also considered when evaluating completeness. With the exception of mercury, the holding time for all metals is six months. The holding time for samples submitted for mercury analysis is 28 days. Summaries of the sample holding times for metals analyses are provided in Appendix E, Tables E-4, E-5 and E-6. All sample holding times were met for project ICAP, GFAA and cold vapor atomic absorption metals samples, thereby exceeding the project goal of 95 percent completeness.

3.4.5 Comparability

The comparability criterion is a quality characteristic which is an expression of the confidence with which one data set can be compared to another. The primary comparability issues are concerned with whether field sampling techniques, analytical procedures and concentration units of one data set can be compared with another. Data comparability was maximized in the laboratory by using standard analytical methods and standard units of measurement, as specified in the methods.

The detection limit for each analysis is defined in terms of the MRL. MRLs for metals identify the minimum concentration of analyte that can be detected with a known confidence level. The MRLs for metals are presented in Table 3-16. Dilution of metals samples was not required for the LACV-30 and ATGAS projects.

3.4.6 Summary of Metal Analyses

The quality of the analytical data from field samples submitted for metals analysis was evaluated based on the results of the supporting QC data. The QC data must meet the PARCC criteria presented in the *CDAP* in order to be considered acceptable.

The analytical precision, using the results of the MS/MSD and LCS samples, was acceptable for total and dissolved metals analyzed by the ICAP, GFAA and cold vapor atomic absorption procedures. Three out of seven field sample/duplicate sample pairs did not meet acceptable QC precision limits for one or more detected metals. This imprecision was most probably not related to the analytical performances but rather the heterogeneous nature of the matrix. The analytical results were accepted since the LCS and MS/MSD precision values associated with the poor duplicate precision samples were within guidelines. As a result, precision of metals data is considered acceptable.

All LCS samples spiked with metals fell within acceptable recovery limits. All metals spiked for MS/MSD analytes fell within acceptable guidelines specified by the method. Therefore, accuracy of metal data is considered acceptable.

TABLE 3-16
METHOD REPORTING LIMITS
METALS

Method Technique	Analyte	Water Matrix μg/L	Soil Matrix mg/kg
ICAP			
6010	Silver	10	1.0
6010	Arsenic	NA	10
6010	Barium	100	10
6010	Beryllium	5	0.5
6010	Cadmium	5	0.5
6010	Chromium	10	1.0
6010	Copper	10	1.0
6010	Lead	NA	10
6010	Nickel	40	4.0
6010	Antimony	50	5.0
6010	Selenium	NA	5.0
6010	Thallium	NA	10
6010	Zinc	20	2.0
Cold Vapor AA			
7470/7471	Mercury	0.2	0.02
Graphite Furnace AA			
7060	Arsenic	5 ^(a)	NA
7421	Lead	2 ^(a)	NA
7740	Selenium	5 ^(a)	NA
7841	Thallium	10 ^(a)	NA

NA = Not Applicable

(a) Represent dissolved reporting limits; total metal limits are five times higher.

The representativeness of the metals analysis was evaluated by means of method blank and rinsate blank results. Metals were not detected in any method blank samples. The reported concentration of copper in groundwater sample SLCVMW1401 was considered suspect due to comparable quantities of copper detected in its associated rinsate blank sample. After proper qualification of metals data, the overall representativeness of metal analyses is considered acceptable.

The completeness for the analytical data is a measure of project data that is considered acceptable. Completeness is acceptable if 90 percent of the field samples submitted to the laboratory were analyzed and 95 percent of the holding times were met. All metal samples submitted for analyses were analyzed for 100 percent completeness. These analyses were completed within acceptable holding time criteria. Therefore, completeness of the metals data is considered acceptable.

The comparability criterion is evaluated based on the analytical procedures and comparison of one data set to another data set. Since the same analytical procedures were used, analytical results are provided in consistent units of measurement and therefore, comparability of the analytical data is considered acceptable.

3.5 TOTAL FUEL HYDROCARBONS - HEAVY FRACTION QC DATA

Field and laboratory QC samples were prepared and analyzed to evaluate total fuel hydrocarbons-heavy (TFH-H) fraction data. Twenty-three field and 13 QC samples were collected and analyzed for TFH-H for the LACV-30 project. The following sections present an evaluation of QC data with respect to precision, accuracy, representativeness, completeness and comparability.

3.5.1 Precision

As discussed in Section 3.1.1, laboratory and field precision may be assessed through evaluating the RPD value calculated from MS/MSD sample pairs, LCS paired samples, and field duplicate samples. TFH-H QC data generated for the evaluation of precision are discussed in the following sections.

3.5.1.1 MS/MSD and LCS Samples. Five analytical batches were analyzed for TFH-H compounds during this project; two contained solid matrix samples and three contained aqueous samples. Table C-7 in Appendix C contains a summary of the QC data generated for the TFH-H analyses performed during this project. Precision for both solid matrix batches and one of the aqueous batches was evaluated using MS/MSD pairs, while LCS pairs were used for the remaining two aqueous batches. Additionally, LCS pairs were analyzed for one of the solid batches and the aqueous batch that contained MS/MSD pairs. The MS/MSD and LCS precision criteria were met for all five batches. A summary of the MS/MSD and LCS QC criteria for TFH-H is presented in Table 3-17.

3.5.1.2 Field Duplicates. A definition of field duplicate samples and associated analyses is presented in Section 3.1.1.2. A summary of TFH-H field duplicate results is presented in Table 3-18. TFH-H compounds were not detected in field sample/duplicate sample pairs, so assessment of combined laboratory and field sampling precision is not possible.

3.5.2 Accuracy

Percent recovery of spiked samples including MS/MSD and LCS samples was compared to acceptable QC criteria as a measure of accuracy. MS/MSD and LCS recoveries met the project QC accuracy criteria (Table 3-17) for all TFH-H sample batches. The MS/MSD and LCS data for this project are presented in Table C-7.

TABLE 3-17

QC ACCEPTANCE CRITERIA FOR TFH-H
MS/MSD AND LCS SAMPLES

Analyte	QC LIMITS (%) ^(a)					
	Water			Soil/Sediment		
	MS/MSD	LCS	RPD	MS/MSD	LCS	RPD
TFH-H	50-150	41-109	<25	50-150	42-122	<25

(a) MS/MSD and LCS QC acceptance criteria are expressed as percent recovery values.

TABLE 3-18
TFH-H FIELD DUPLICATE SUMMARY

Sample Location	Matrix	Field Sample Concentration	Duplicate Sample Concentration	RPD	RPD Acceptable?
SLCVSW1453 (C3)	aqueous	ND	ND	NC	NA
SLCVMW1401 (C3)	aqueous	ND	ND	NC	NA
SLCVSD1436 (C3)	solid	ND	ND	NC	NA

ND = Not detected.

NC = Not calculated. RPD was not calculated when the field and/or duplicate sample concentration was not detected.

NA = Not applicable.

3.5.3 Representativeness

Method blanks and rinsate blanks were used to assess the representativeness of the analytical data generated for the LACV-30 and ATGAS projects. Method blanks were run with each TFH-H analytical batch. TFH-H compounds were not detected in any of these five method blank samples. TFH-H compounds were not detected in either rinsate blank sample SLCVSW1453 RB or SLCVMW1401 RB. Therefore, the TFH-H results are considered representative.

3.5.4 Completeness

There were a total of 23 field samples collected for TFH-H analyses during the field activities. There were an additional 13 QC samples analyzed to support the quality of the field samples. The analyses of TFH-H samples were completed for all of the samples with the exception of one TFH-H sample, SLCVSW1455 RB, that was lost. This resulted in an overall completeness of 97 percent. The lost rinsate sample did not impact reported data since an additional TFH-H rinsate blank sample (i.e., SLCVSW1453 RB) was collected from surface water media. As a result, no corrective action was required. Completeness of TFH-H analyses exceeded the project goal of 90 percent.

The number of samples analyzed within the specified holding times for TFH-H analyses also are considered when evaluating completeness. A summary of the sample holding times for TFH-H analysis is provided in Appendix E, Table E-7. The analytical holding times for soil and water media samples is 14 days from the date of sampling to the date of extraction and the extract must be analyzed within 40 days. All sample holding times were met for project TFH-H samples, thereby exceeding the project goal of 95 percent completeness.

3.5.5 Comparability

The comparability criterion is a quality characteristic which is an expression of the confidence with which one data set can be compared to another. The primary comparability issues are concerned with whether field sampling techniques, analytical procedures and concentration units of one data set can be compared with those of another data set. Data comparability was maximized in the laboratory by using standard analytical methods and standard units of measurements, as specified in the methods.

The detection limit for each analysis is defined in terms of the MRL. MRLs identify the minimum concentration of analyte that can be detected with a known confidence level. The MRLs for Method 8015 for TFH (heavy and light fractions) are presented in Table 3-19. Dilution of TFH-H samples was not required for the LACV-30 and ATGAS projects.

3.5.6 Summary of TFH-H Analyses

The analytical precision of TFH-H data is assessed by means of duplicate samples. Since there were two LCS samples analyzed with each analytical batch, a RPD value is calculated for each pair of LCS samples. In addition to LCS duplicate samples, MS/MSD samples were analyzed for approximately one in 20 samples, and field duplicates were collected and analyzed for approximately one in ten field samples. Since original QC and duplicate QC samples are subject to the same analytical procedures as the associated field samples, all three types (i.e., LCS, MS/MSD, field duplicate) of duplicate pairs provide a measure of precision.

The analytical precision, using the results of the LCS and MS/MSD samples, was acceptable for all five analytical batches. A total of three field duplicate sample pairs were analyzed during the project. The precision of field duplicate samples could not be evaluated because the TFH-H levels were below detection limits. Precision for the TFH-H analyses is considered acceptable.

TABLE 3-19
METHOD REPORTING LIMIT
TOTAL FUEL HYDROCARBONS

Method Technique	Analyte	Water Matrix (mg/l)	Soil Matrix (mg/kg)
Modified 8015	TFH-Heavy	0.050	10
Modified 8015	TFH-Light	0.050	0.20

Therefore, the accuracy of the TFH-H results is assessed by means of spike recoveries from LCS, MS, and MSD samples. All QC spike recoveries for TFH-H samples were within acceptable QC limits. The accuracy of the TFH-H analysis is considered acceptable.

The representativeness of the TFH-H analyses was evaluated by means of method blank and rinsate blank results. There were no positive detections in the method blank or rinsate blank samples. As a result, the representativeness of the sample data is considered acceptable.

The completeness for the analytical data is a measure of project data that is considered acceptable. The analytical data from samples analyzed outside holding times may be considered unacceptable for use in site contamination assessments. Including field and QC related samples, there were 36 TFH-H analyses performed during the project. One rinsate blank sample was lost, resulting in 97 percent of the analyses meeting the completeness criteria. This result exceeds the 95 percent project goal for holding times. Also, a second rinsate blank result was available and the completeness of the TFH-H data is considered acceptable.

The comparability criterion is evaluated based on the analytical procedures and uniformity of concentration units for a sample with respect to other samples. Since the same analytical procedure was used for all TFH-H analyses, the comparability of the analytical data is considered acceptable.

3.6 TOTAL FUEL HYDROCARBONS - LIGHT FRACTION QC DATA

Field and laboratory QC samples were prepared and analyzed to evaluate total fuel hydrocarbons-light (TFH-L) fraction data reported in Table 2-24. One field sample and one QC sample were collected and analyzed for TFH-L for the aqueous phase UST sample at the ATGAS Site. Due to problems in sample transport, as described in the *QCSR*, the aqueous phase UST sample (TK1505) and its associated duplicate were recollected and analyzed. The results of the original and resampling data are evaluated in this report. The following sections present an evaluation of TFH-L QC data with respect to precision, accuracy, representativeness, completeness and comparability.

3.6.1 Precision

As discussed in Section 3.1.1, laboratory and field precision may be assessed through evaluating the RPD value calculated from MS/MSD sample pairs, LCS-paired samples, and field duplicate samples. TFH-L QC data generated for the evaluation of precision are discussed in the following sections.

3.6.1.1 LCS Samples. One analytical sample batch was analyzed for TFH-L during this project; this batch was comprised of aqueous samples. Table C-8, in Appendix C, contains a summary of QC data generated for this TFH-L batch. Acceptable QC criteria is provided in Table 3-20. Precision was evaluated for this batch using an LCS pair. The RPD for this pair fell outside the RPD criterion for TFH-L. Therefore, the LCS imprecision associated with this batch may indicate possible analytical variability.

3.6.1.2 Field Duplicates. A definition of field duplicate samples and their analyses are presented in Section 3.1.1.2. Two field sample/duplicate sample pairs were collected at the ATGAS Site and analyzed for TFH-L. Results are summarized in Table 3-21. Each field sample/duplicate sample pair met acceptable QC criteria for precision.

TABLE 3-20

QC ACCEPTANCE CRITERIA FOR TFH-L
MS/MSD AND LCS SAMPLES

Analyte	QC LIMITS (%) ^(a)					
	Water			Soil/Sediment		
	MS/MSD	LCS	RPD	MS/MSD	LCS	RPD
TFH-L	50-150	70-122	<25	50-150	81-126	<25

(a) MS/MSD and LCS QC acceptance criteria are expressed as percent recovery values.

TABLE 3-21
TFH-L DUPLICATE SUMMARY

Sample Location	Matrix	Field Sample Concentration (mg/l)	Duplicate Sample Concentration (mg/l)	RPD	RPD Acceptable?
SATGTK1505 (AQ)	aqueous	58	62	7	Yes
SATGTK1505 (AQ) (R)	aqueous	50	49	2	Yes

3.6.2 Accuracy

Percent recovery of LCS samples was compared to acceptable QC criteria as a measure of accuracy. LCS data for TFH-L samples in this project are presented in Table C-8. LCS recoveries met the project QC accuracy criteria (Table 3-20).

3.6.3 Representativeness

A method blank sample was used to assess the representativeness of the analytical data. TFH-L compounds were not detected in the method blank sample. No rinsate blank samples were collected for TFH-L analysis during the ATGAS project.

3.6.4 Completeness

One field sample was collected for TFH-L analysis during the field activities. There was an additional QC sample analyzed to support the quality of the field sample. The analyses of TFH-L samples were completed for both of these samples, resulting in a completeness of 100 percent. This completeness exceeds the project goal of 90 percent and the completeness criteria for TFH-L was met.

The number of samples analyzed within the specified holding times for TFH-L analyses is also considered when evaluating completeness. A summary of the sample holding times for TFH-L analyses is provided in Appendix E, Table E-8. The analytical holding time for soil and water media samples is 14 days from the date of sampling to the date of analysis. All sample holding times were met for project TFH-L samples, thereby exceeding the project goal of 95 percent completeness.

3.6.5 Comparability

The comparability criterion is a quality characteristic which is an expression of the confidence with which one data set can be compared to another. The primary comparability issues are concerned with whether field sampling techniques, analytical procedures and concentration units of one data set can be compared with those of another data set. Data comparability was maximized in the laboratory by using standard analytical methods and standard units of measurements, as specified in the methods.

The detection limit for each analysis is defined in terms of the MRL. The MRL for TFH-L identifies the minimum concentration of analyte that can be detected with a known confidence level. The MRL for Method 8015 for TFH-L is presented in Table 3-19. Dilution of TFH-L samples was not required for the ATGAS project.

3.6.6 Summary of TFH-L Analyses

The analytical precision of TFH-L data is assessed by means of duplicate samples associated with the sample batch. Since there were two LCS samples analyzed, a RPD value is calculated for the pair of LCS samples. In addition to LCS duplicate samples, a field duplicate was collected and analyzed from the UST contents.

The analytical precision, using the results of the LCS samples, was outside of acceptable limits for the analytical batch. However, the precision of the two field duplicate samples (original pair and resample pair) was within acceptable QC limits. Therefore, the precision of the method is considered acceptable.

The accuracy of the TFH-L results is assessed by means of spike recoveries from LCS. The LCS spike recoveries associated with the analytical batch were acceptable. The accuracy of the TFH-L analysis is considered acceptable.

The representativeness of the TFH-L analyses was evaluated by means of method blank results. Hydrocarbons were not detected in the method blank sample. As a result, the representativeness of the sample data is considered acceptable.

The completeness for the analytical data is a measure of project data that is considered acceptable. Upon review of QC results and samples analyzed outside holding times, analytical data may be considered unacceptable for use in site contamination assessments. Including field and QC related samples, there were two TFH-L analyses performed during the project. Both samples were analyzed within holding times for 100 percent completeness. Since the project goal for holding times was 95 percent, the completeness of the TFH-L data is considered acceptable.

The comparability criterion is evaluated based on the analytical procedures and uniformity of concentration units for a sample with respect to other samples. Since the same analytical procedure was used for all TFH-L analyses, the comparability of the analytical data is considered acceptable.

3.7 TOTAL ORGANIC HALIDES QC DATA

Field and laboratory QC samples were prepared and analyzed to review total organic halides (TOX) data reported in Table 2-25. Four field and two QC samples were collected and analyzed for TOX for the ATGAS project. A product sample was collected from TK1501 and TK1503. An aqueous phase sample and an associated duplicate sample were collected from TK1505. Due to problems in sample transport, as described in the *QCSR*, the aqueous phase sample and associated duplicate sample from TK1505 were recollected and analyzed. The results of the original and resampling data are evaluated in this report. The following sections present an evaluation of TOX QC data with respect to precision, accuracy, representativeness, completeness and comparability.

3.7.1 Precision

As discussed in Section 3.1.1, laboratory and field precision may be assessed through evaluating the RPD value calculated from MS/MSD sample pairs, LCS-paired samples, and field duplicate samples. TOX QC data generated for the evaluation of precision are discussed in the following sections.

3.7.1.1 LCS Samples. Four analytical batches were analyzed for TOX during this project; three contained aqueous samples and one contained tank product samples. Table C-9, located in Appendix C, contains a summary of the QC data generated for the TOX analyses. TOX acceptable QC criteria is provided in Table 3-22. Precision for all of the TOX analytical batches was evaluated using LCS pairs, and all of the batches met the RPD criterion.

3.7.1.2 Field Duplicates. A definition of field duplicate samples and their analyses are presented in Section 3.1.1.2. A summary of TOX field duplicate results is presented in Table 3-23. One field sample/duplicate sample pair was collected during each of the original and resampling events at TK1505. Duplicate precision was acceptable for both field sample/duplicate sample pairs.

TABLE 3-22
QC ACCEPTANCE CRITERIA FOR TOX
LCS SAMPLES

Analyte	LCS QC Limits	
	LCS	RPD
TOX	80-120	<20

TABLE 3-23
TOX DUPLICATE SUMMARY

Sample Location	Matrix	Field Sample Concentration ($\mu\text{g/l}$)	Duplicate Sample Concentration ($\mu\text{g/l}$)	RPD	RPD Acceptable?
SATGTK1505 (AQ)	aqueous	1,100	1,200	9	Yes
SATGTK1505 (AQ) (R)	aqueous	910	940	3	Yes

3.7.2 Accuracy

Percent recovery of spiked samples including MS/MSD and LCS samples was compared to acceptable QC criteria as a measure of accuracy. MS/MSD and LCS recoveries met the project QC accuracy criteria (Table 3-22) for all TOX sample batches. The MS/MSD and LCS data for this project are presented in Table C-9, Appendix C.

3.7.3 Representativeness

Water blanks and carbon blanks were used to assess the representativeness of the TOX analytical data generated for the ATGAS project. In the TOX analytical procedure, there are continual problems with residual halogens on the carbon material. Carbon blanks were run with each TOX analytical batch to quantify residual halogen content. The water blank is used to detect halogen compounds that may have been introduced in the dilution water. The concentration of halogenated compounds detected in the associated carbon and water blanks are subtracted from the analytical measurement. Although TOX compounds were detected in all four blank samples, appropriate adjustments were made prior to the laboratory reporting the analytical results.

3.7.4 Completeness

There were a total of three field samples collected for TOX analyses during the field activities. There was one additional QC sample analyzed to support the quality of the field samples. The analyses of TOX samples were completed for 100 percent of the samples, thereby exceeding the 90 percent completeness goal for the project.

3.7.5 Comparability

The comparability criterion is a quality characteristic which expresses the confidence that one data set can be compared to another. The primary comparability issues are concerned with whether field sampling techniques, analytical procedures and concentration units of one data set can be compared with those of another data set. Data comparability was achieved in the laboratory by using standard analytical methods and standard units of measurements, as specified in the methods.

The detection limit for each analysis is defined in terms of the MRL. The MRL for TOX identifies the minimum concentration of analyte that can be detected with a known confidence level. The MRL for Method 9020 for TOX analysis is 10 mg/l for aqueous samples and 100 mg/kg for product samples. Dilution of TOX samples was not required for project samples.

3.7.6 Summary of TOX Analyses

The quality of the analytical data from field samples submitted for TOX analysis was evaluated based on the results of the supporting QC data. The QC data must meet the PARCC criteria presented in the *CDAP* in order to be considered acceptable.

The analytical precision of TOX data is assessed by means of duplicate LCS samples. A RPD value is calculated for each pair of LCS samples. In addition to LCS duplicate samples, field duplicates were collected and analyzed for TOX samples. The field duplicate samples provide an additional measure of precision. The precision of the paired LCS were acceptable.

The accuracy of the TOX results is assessed by means of spike recoveries from LCS. All LCS spike recoveries for TOX samples were within acceptable QC limits. The accuracy of the TOX analysis is therefore considered acceptable.

The representativeness of the TOX analyses was evaluated by means of water blank and carbon blank results. There were positive detections in all blanks analyzed, but the reported data have been adjusted to account for the detection of halogen compounds in the blank samples. As a result, the representativeness of the sample data is considered acceptable.

The completeness for the analytical data is a measure of project data that is considered acceptable. Upon review of QC results and samples analyzed outside holding times, analytical data may be considered unacceptable for use in site contamination assessments. Including field and QC related samples, there were a total of four TOX analyses performed during the project. The four samples were analyzed within the method holding time, which resulted in 100 percent of the analyses meeting the holding time. Since the project goal for holding times was 95 percent, the completeness of the TOX data is considered acceptable.

The comparability criterion is evaluated based on the analytical procedures and comparison of concentration units for a sample with respect to other samples. Since the same analytical procedures were used, providing the analytical results in consistent units of measurement, the comparability of the analytical data is considered acceptable.

4.0 SUMMARY OF ANALYTICAL DATA

Analytical data for the LACV-30 and ATGAS projects were evaluated on the basis of precision accuracy, representativeness, completeness, and comparability (PARCC). Precision was evaluated using the results of matrix spike/matrix spike duplicate (MS/MSD) sample pairs, laboratory control sample (LCS) pairs, and field duplicate sample pairs. Accuracy was evaluated using the percent recoveries of spiked analytes for MS/MSD, LCS and surrogate samples. Representativeness was evaluated using the results of method blank, trip blank and rinsate blank analyses. Completeness was determined by the success rate in meeting holding time criteria and the number of analytical results that are considered acceptable after review of QC parameters. Comparability is assessed by utilizing standard analytical methods and reporting analytical results in standard units of measurement. Table 4-1 presents a summary of the QC sample evaluation results with respect to the PARCC criteria. A detailed discussion for each PARCC criterion was presented earlier in Section 3 of this report.

Based on the results of the QC sample analyses, the overall precision and accuracy goal of the project was achieved. Results from the method blank, trip blank, and field duplicate analyses indicate that the data for the LACV-30 and ATGAS projects are representative of the environmental conditions at the project sites. Due to positive detection of chloroform and copper in the rinsate blank associated with sample SLCVMW1401, the reported concentrations of these two compounds in the sample are considered suspect concentrations. The completeness goal for acceptable data, which is based on QC sample results and holding time criteria, was greater than 90 percent, thereby meeting one of the project goals. Standard methods of analysis and units of measure were used throughout the project. Therefore, there is a high degree of confidence that the analytical data within this data set are comparable.

In summary, the data generated during the LACV-30 and ATGAS projects are considered acceptable and can be used with a high degree of confidence to evaluate environmental conditions at the project sites. All of the QC criteria and DQOs outlined in the *CDAP* were met.

TABLE 4-1

SUMMARY OF QC RESULTS WITH RESPECT TO PARCC CRITERIA^(a)

	Total Number of Analyses ^(b)	Precision	Accuracy	Representativeness (Qualitative)	Completeness (Percent of Acceptable Data)	Comparability (Degree of Confidence)
Chemical Analyses						
VOCs	24	Acceptable	Acceptable	Representative	92	High
BNAs	29	Acceptable	Acceptable	Representative	100	High
Pesticides/PCBs	24	Acceptable	Acceptable	Representative	100	High
Total Metals	32	Acceptable	Acceptable	Representative	100	High
Dissolved Metals	17	Acceptable	Acceptable	Representative	100	High
Short List Metals	4	Acceptable	Acceptable	Representative	100	High
TFH-H	36	Acceptable	Acceptable	Representative	97	High
TFH-L	2	Acceptable	Acceptable	Representative	100	High
TOX	4	Acceptable	Acceptable	Representative	100	High
TOTAL	172				98	

(a) Criteria for evaluating the QC results and detailed evaluation of those results were presented in Section 3.

(b) Including QC Samples (i.e., field duplicates, trip blanks, rinsate blanks and MS/MSD samples).

APPENDIX A

REFERENCES

1. American Public Health Association, American Water Works Association and Water Pollution Control Federation, 1989. *Standard Methods for the Evaluation of Water and Wastewater Treatment*. 17th Edition.
2. American Society for Testing and Materials, 1990.
3. James M. Montgomery, Consulting Engineers, Inc. (JMM), December 1990. *Architect-Engineer Final Chemical Data Acquisition Plan, Preliminary Assessment/Site Investigation for LACV-30 Maintenance Facility Wetlands Area, Site Investigation/Decision Plans and Specifications for Underground Storage Tank Removal at Atlantic Street Gas Station Site, Fort Story, Virginia*.
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5. State of California, 1989. *Leaking Underground Fuel Tank Manual -- Guidelines for Site Assessment, Cleanup, and Underground Storage Tank Closure*. LUFT Task Force.
6. U.S. Army Corps of Engineers (USACE), 1989. *Sample Handling Protocol for High Concentration Samples*.
7. U.S. Environmental Protection Agency (EPA), 1986. *Test Methods for Evaluating Solid Waste (SW-846): Physical/Chemical Methods*. Third Edition. Office of Solid Waste.

APPENDIX B
CHAIN OF CUSTODY RECORDS
AND
COOLER RECEIPT FORMS

Fed Ex # 9867147463

Cooler # 121

JMM James M Montgomery
Consulting Engineers Inc

CHAIN OF CUSTODY RECORD

DESTINATION: MONTGOMERY LABORATORIES
OTHER:

Fort Story



PROJECT NAME		PROJECT JOB #		ANALYSES REQUIRED																			
LACV		1868.0536		<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Metals PP + PAH PAH</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BNA</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Pb+ / PCB</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TFM-L</div> </div>																			
SAMPLER(S): PRINTED NAME AND SIGNATURE																QA/QC	GRAB	COMP	NUMBER/SIZE OF CONTAINERS				
Edward J. Dandy Nancy A. McNelly / Nancy A. McNelly / Eddie Dandy																							
TIME	DATE	LOCATION	IDENTIFIER	QA/QC	GRAB	COMP	NUMBER/SIZE OF CONTAINERS															REMARKS	
1400	1/23/91	LACV	SLCVSD1431 (C3) 0123			X	1-8oz jar	✓	✓	✓													
1440	1/23/91	LACV	SLCVSD1432 (C3) 0123			X	1-8oz jar	✓	✓	✓													
1530	1/23/91	LACV	SLCVSD1433 (C3) 0123			X	1-8oz jar	✓	✓	✓													
1400	1/23/91	LACV	SLCVSD1431 (C3) 0123			X	1-4oz jar																all TPA L
1440	1/23/91	LACV	SLCVSD1432 (C3) 0123			X	1-4oz jar																being held until
1530	1/23/91	LACV	SLCVSD1433 (C3) 0123			X	1-4oz jar																verification of
																							W/L fraction

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY: <i>Nancy A. McNelly</i>	Nancy A. McNelly	James M. Montgomery / Associate Engineer	1/23/91	1715
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY (LAB): <i>Helen Brown</i>	Helen Brown	James Montgomery / Log in	1/24/91	11:00

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: LACY (Byndon VA) Date Received: 1/24/91
Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 1/24/91
by (print) Helen Brown (signature) Helen Brown

1. Did cooler come with shipping slip (air bill, etc.)? Yes No
If YES, attach & enter carrier and air bill # here: 986714TAL3

2. Were custody seals on outside of cooler? Yes No
If YES, how many & where: 2 - opposite ends
If Yes, enter the following: seal date: 1/23, seal name: NAM

3. Were custody seals unbroken & intact at delivery? Yes No

4. Were custody papers sealed in bag & taped to lid? Yes No

5. Were custody papers filled out properly (ink, etc.) Yes No

6. Did you sign custody papers in appropriate place? Yes No

7. Was project identifiable from custody papers? Yes No

8. Have designated person(s) initial to acknowledge receipt: JBO (date) 1/24/91

B. LOG-IN PHRASE: Date samples were logged-in: 1/24 by:
(print) Helen Brown (signature) Helen Brown

9. Describe packing:

10. If required, was enough ice used? Yes No

11. Were all bottles sealed in separate plastic bags? Yes No

12. Did all bottles arrive unbroken/in good condition? Yes No

13. Were all bottle labels complete (ID, date, sign, pres)? Yes No

14. Did all bottle labels agree with custody papers?
If NO, indicate discrepancies on back. Yes No

15. Were correct containers used for the analytes? Yes No

16. Were correct preservatives used when required? Yes No

17. Was sufficient amount of sample sent for tests? Yes No

18. Bubbles absent in VOA vials? NA Yes No
If NO, list by sample id on back.

19. Was Client Services informed of problems? NA Yes No

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: LACV - Fort Strong Date Received: 1/25/91
Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 1/25/91
By (print) Helen Brown (sign) Helen Brown

1. Did cooler come with shipping slip (air bill, etc.)? Yes No
If YES, attach & enter carrier and air bill # here: 986747474

2. Were custody seals on outside of cooler? Yes No
If YES, how many & where: opposite ends.
If Yes, enter the following: seal date: 1/24/91, seal name: EJD

3. Were custody seals unbroken & intact at delivery? Yes No

4. Were custody papers sealed in bag & taped to lid? Yes No

5. Were custody papers filled out properly (ink, etc.) Yes No

6. Did you sign custody papers in appropriate place? Yes No

7. Was project identifiable from custody papers? Yes No

8. Have designated person(s) initial to acknowledge receipt: JAO (date) 1/25/91

B. LOG-IN PHASE: Date samples were logged-in: 1/25 by:
(print) Helen Brown (sign) Helen Brown

9. Describe packing:

10. If required, was enough ice used? Yes No

11. Were all bottles sealed in separate plastic bags? Yes No

12. Did all bottles arrive unbroken/in good condition? Yes No

13. Were all bottle labels complete (ID, date, sign, pres)? Yes No

14. Did all bottle labels agree with custody papers?
If NO, indicate discrepancies on back. Yes No

15. Were correct containers used for the analytes? Yes No

16. Were correct preservatives used when required? Yes No

17. Was sufficient amount of sample sent for tests? Yes No

18. Bubbles absent in VOA vials?
If NO, list by sample lid on back. Yes No

19. Was Client Services informed of problems? NI Yes No

James M. Montgomery
Consulting Engineers Inc.

CHAIN OF CUSTODY RECORD
Fort Story

Fed Ex # _____
Cooler # _____
DESTINATION: MONTGOMERY LABORATORIES
OTHER: _____

PROJECT NAME: LACV
PROJECT JOB #: 1868.0531
SAMPLER(S): PRINTED NAME AND SIGNATURE: M. Pijnenburg
N. McNelly, N. McNelly, M. Pijnenburg

TIME	DATE	LOCATION	IDENTIFIER	QA/QC	GRAB	COMP	NUMBER/SIZE OF CONTAINERS	ANALYSES REQUIRED							REMARKS		
								TFH-L	MET PP+BA/DSV	MET PP+BA/TOTR	MET PP+BA/DIS	MET PP+BA/TOTR	BNA	JOC			
0945	1/24/91	LACV	SLCV DI 0124			X	1-40ml	(VV)*									* Will
0945	1/24/91	LACV	SLCV DI 0124			X	1-LITER		✓	✓	✓	✓	✓				resample
0830	1/24/91	LACV	SLCV IW 0124			X	1-40ml	(VV)*									TFH-L for
0830	1/24/91	LACV	SLCV IW 0124			X	1-LITER		✓	✓	✓	✓	✓				HighBpHC
1600	1/24/91	LACV	SLCV DI TB 0124	X			1-40ml										

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
<i>Nancy A. McNelly</i>	Nancy A. McNelly	James M. Montgomery	1/24/91	1749
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY (LAB): <i>[Signature]</i>	Pruce Hawk	Montgomery Lab	1/25/91	1:31

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: Army Staff Date Received: 1/25
Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 1/25
By (print) Helen Brown (sign) Helen Brown

1. Did cooler come with shipping slip (air bill, etc.)? Yes No
If YES, attach & enter carrier and air bill # here: 9967147A96

2. Were custody seals on outside of cooler? Yes No
If YES, how many & where: diagonally covering side
If Yes, enter the following: seal date: 1/24, seal name: N/A (?)

3. Were custody seals unbroken & intact at delivery? Yes No

4. Were custody papers sealed in bag & taped to lid? Yes No

5. Were custody papers filled out properly (ink, etc.)? Yes No

6. Did you sign custody papers in appropriate place? Yes No

7. Was project identifiable from custody papers? Yes No

8. Have designated person(s) initial to acknowledge receipt: JAO (date) 1/25/91

B. LOG-IN PHASE: Data samples were logged in: 1/25/91
(print) Crue Hall (sign) [Signature]

9. Describe packing:

10. If required, was enough ice used? Yes No

11. Were all bottles sealed in separate plastic bags? Yes No

12. Did all bottles arrive unbroken/in good condition? Yes No

13. Were all bottle labels complete (ID, date, sign, gram)? Yes No

14. Did all bottle labels agree with custody papers?
If NO, indicate discrepancies on back. Yes No

15. Were correct containers used for the analysis? Yes No

16. Were correct preservatives used when required? Yes No

17. Was sufficient amount of sample sent for tests? Yes No

18. Bubbles absent in VOA vials?
If NO, list by sample id on back. Yes No

19. Was Client Services informed of problems? Yes No

Fed Ex # 86 714748

Cooler # 02

JMM James M Montgomery
Consulting Engineers Inc.

CHAIN OF CUSTODY RECORD

DESTINATION: MONTGOMERY LABORATORIES

Fort Story

OTHER:



PROJECT NAME: LACV
PROJECT JOB #: 1868-0531
SAMPLER(S): PRINTED NAME AND SIGNATURE: M. Pijnenburg
N. McNelly, N. Miley, N. Pijnenburg

TIME	DATE	LOCATION	IDENTIFIER	QA/QC	GRAB	COMP	NUMBER/SIZE OF CONTAINERS	ANALYSES REQUIRED								REMARKS		
								TFH-L	MET PP + BA	MET PP + BA (Total)	BVA	VOC	MET PP + BA (DIS)	MET PP + BA (Total)	OTHER		OTHER	
1641	1/24/91	LACV	SLCVSW1453 0124			X	1-40ml	✓	✓									needs to be resampled for High BP.
1541	1/24/91	LACV	SLCVSW1453 0124			X	1-LITER	✓	✓									
1600	1/24/91	LACV	SLCVSW1454 0124			X	1-40ml	✓	✓									needs to be resampled for High BP.
1600	1/24/91	LACV	SLCVSW1454 0124			X	1-LITER	✓	✓									
1445	1/24/91	LACV	SLCVSN1452 0124			X	1-40ml	✓	✓									needs to be resampled for High BP.
1445	1/24/91	LACV	SLCVSW1452 0124			X	1-LITER	✓	✓									
1425	1/24/91	LACV	SLCVSW1451 0124			X	1-40ml	✓	✓									needs to be resampled for High BP.
1425	1/24/91	LACV	SLCVSW1451 0124			X	1-LITER	✓	✓									

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY: <u>James M. Montgomery</u>	<u>James M. Montgomery</u>	<u>James M. Montgomery</u>	<u>1/24/91</u>	<u>1749</u>
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY (LAB): <u>Allen Brown</u>	<u>Allen Brown</u>	<u>JMM Log-in</u>	<u>1/24/91</u>	

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: LACV & CoE Pot Stm Date Received: 1/25/91
Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cool: 1/25/91
By (print) Heidi Brown (sign)

- 1. Did cooler come w/ ship? Yes No
If YES, etc: 747485
- 2. Were used? Yes No
- 3. Were checked? Yes No
- 4. Were used? Yes No
- 5. Were used? Yes No
- 6. Did...? Yes No
- 7. Was...? Yes No
- 8. H?

mc: NA

(date) 1/25/91

- 9. Describe...
- 10. If req... ice used? Yes No
- 11. Were... in separate plas? Yes No
- 12. Did all... unbroken/in goo? Yes No
- 13. Were... complete (ID, date, sign, etc)? Yes No
- 14. Did all... agree with custody papers?
If NO, list discrepancies on back. Yes No
- 15. Were correct containers used for the analysis? Yes No
- 16. Were correct preservatives used when required? Yes No
- 17. Was sufficient amount of sample sent for tests? Yes No
- 18. Bobbing about in VOA vial?
If NO, list by sample ID on back. Yes No
- 19. Was Client Services informed of problems? NA Yes No

Fed Ex # 9867147500
Cooler # 45

JMM James M Montgomery
Consulting Engineers Inc.

CHAIN OF CUSTODY RECORD
FORT STORY

DESTINATION: MONTGOMERY LABORATORIES
OTHER:



PROJECT NAME		PROJECT JOB #		ANALYSES REQUIRED AS												REMARKS
LACV		1868.0536		TFH-L METPP + BA (D3) GL METPP + BA (Tot) GL BVA VOC METPP + BA (D3) PLA METPP + BA (Tot) PLA												
SAMPLER(S): PRINTED NAME AND SIGNATURE																
M. DAMIAN SANDOVAL																
TIME	DATE	LOCATION	IDENTIFIER	QA/QC	GRAB	COMP	NUMBER/SIZE OF CONTAINERS	TFH-L	METPP + BA (D3) GL	METPP + BA (Tot) GL	BVA	VOC	METPP + BA (D3) PLA	METPP + BA (Tot) PLA	REMARKS	
0800	1/25/9	LACV	SLCVSW14550125			✓	1-40ml	✓								
0800	"	"	"			✓	1-Liter		✓	✓			✓	✓		
0800	"	"	SLCVSW14550125(D)	✓		✓	1-40ml	✓								
0800	"	"	"			✓	1-Liter		✓	✓			✓	✓		
0800	"	"	SLCVSW14550125(R)	✓		✓	1-40ml	✓								
0800	"	"	"				1-Liter		✓	✓			✓	✓		
0800	"	"	"				1-40ml									
0800	"	"	"				1-Liter									
0800	"	"	SLCVSW14550125(TB)	✓		✓	1-40ml					✓				

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
<i>M. Sandoval</i>	M. DAMIAN SANDOVAL	JMM/SCIENTIST	1/25/9	1700
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY (LAB): <i>H. E. J.</i>	Hector ESPARZA	Junior LAB	1/22/9	1800

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

COC 1031

PROJECT: Ft Story Date Received: 1/26/91
Use other side of this form to show further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 1/26/91
by (print) Scuse Huslik (sign) [Signature]

1. Did cooler come with shipping slip (air bill, etc.)? Yes No
If YES, attach & enter carrier and air bill # here: 9867177500

2. Were custody seals on outside of cooler? Yes No
If YES, how many & where: 2/ends
If Yes, enter the following: seal date: 1/25/91, seal name: MAM

3. Were custody seals unbroken & intact at delivery? Yes No

4. Were custody papers sealed in bag & taped to lid? Yes No

5. Were custody papers filled out properly (lab, etc.)? Yes No

6. Did you sign custody papers in appropriate place? Yes No

7. Was project identifiable from custody papers? Yes No

8. Have designated person(s) initial to acknowledge receipt: JAO (date) 1/28/91

8. LOG-IN PHRASE: Date samples were logged-in: _____ by: _____
(print) _____ (sign) _____

9. Describe packing:

10. If required, was enough ice used? Yes No

11. Were all bottles sealed in separate plastic bags? Yes No

12. Did all bottles arrive unbroken/in good condition? Yes No

13. Were all bottle labels complete (ID, date, sign, pres)? Yes No

14. Did all bottle labels agree with custody papers?
If NO, indicate discrepancies on back. Yes No

13. Were correct containers used for the analytes? Yes No

16. Were correct preservatives used when required? Yes No

17. Was sufficient amount of sample sent for tests? Yes No

18. Bottles shown in VOA visit?
If NO, list by sample ID on back. Yes No

19. Was Client Services informed of problems? Yes No

000 1033

COC 1033

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: Army Story Date Received: 1/26/91

Use other side of this form to note further details concerning catch-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 1/26/91
By (print) Bruce H. K. (signature)

1. Did cooler come with shipping slip (air bill, etc.)? Yes No
If YES, attach & enter carrier and air bill # here: 986714 X 11

2. Were custody seals on outside of cooler? Yes No
If YES, how many & where: 2/ends
If Yes, enter the following: seal date: 1/25/91, seal name: MDS

3. Were custody seals unbroken & intact at delivery? Yes No

4. Were custody papers sealed in bag & taped to lid? Yes No

5. Were custody papers filled out properly (ink, etc.) Yes No

6. Did you sign custody papers in appropriate place? Yes No

7. Was project identifiable from custody papers? Yes No

8. Have designated person(s) initial to acknowledge receipt: JAO (date) 1/25/91

B. LOG-IN PHASE: Date samples were logged-in: 1/25/91 by:
(print) Hector Estrada (signature) H.E.

9. Describe packing:

10. If required, was enough ice used? Yes No

11. Were all bottles sealed in separate plastic bags? Yes No

12. Did all bottles arrive unbroken/in good condition? Yes No

13. Were all bottle labels complete (ID, date, sign, pres)? Yes No

14. Did all bottle labels agree with custody papers?
If NO, indicate discrepancies on back. Yes No

15. Were correct containers used for the analysis? Yes No

16. Were correct preservatives used when required? Yes No

17. Was sufficient amount of sample sent for tests? Yes No

18. Bottles absent in VOA vial?
If NO, list by sample ID on back. Yes No

19. Was Client Services informed of problems? Yes No

Fed Ex # 98611+7546
 Cooler # 1057
 DESTINATION: MONTGOMERY LABORATORIES
 OTHER:

JMM James M Montgomery
 Consulting Engineers Inc.

CHAIN OF CUSTODY RECORD

FT. STORY - LACV

PROJECT NAME LACV	PROJECT JOB # 1868053 (6)	ANALYSES REQUIRED <i>(Diagonal lines)</i>
SAMPLER(S): PRINTED NAME AND SIGNATURE M. DAMIAN SANDOVAL <i>(Signature)</i>		

TIME	DATE	LOCATION	IDENTIFIER	QAVC	GRAB	COMP	NUMBER/SIZE OF CONTAINERS	BVA	REST/PCB	MET/PP/TRA	TFH-H	VOC	REMARKS
0800	1/26	LACV	SLCVSD1436(C3)0126			✓	one 8 OZ JAR	✓	✓	✓			
0800	1/26	"	" " "			✓	one 4 OZ JAR			✓			
0800	1/26	LACV	SLCVSD1436(C3)0126(D)	✓		✓	one 8 OZ JAR	✓	✓	✓			
0800	1/26	"	" " "				one 4 OZ JAR			✓			
1020	1/26	LACV	SLCVSB1408(C3) 0126			✓	one 8 OZ JARS	✓	✓	✓			
1020	1/26	"	SLCVSB1408(5) 0126		✓		two 4 OZ JARS				✓		
1020	1/26	LACV	SLCVSB1408(5) 0126		✓		one 4 OZ JAR			✓			
1115	1/26	LACV	SLCVSB1405(C3)0126			✓	two 4 OZ JARS	✓	✓	✓			
1115	1/26	"	" " (0)0126		✓		one 4 OZ JAR			✓			
1115	1/26	"	" " (0)0126		✓		two 4 OZ JAR				✓		
0912	1/26	LACV	SLCVSB1403(D)0126		✓		one 4 OZ JAR			✓			
0912	1/26	"	" " (C3)0126				two 4 OZ JARS	✓	✓	✓			
0912	1/26	"	" " (U)0126				two 4 OZ JAR				✓		

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
<i>(Signature)</i>	M. DAMIAN SANDOVAL	JMM/SCIENTIST	1/26/91	1438
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY (LAB): <i>(Signature)</i>	Hector Estrada	Jmm/LAB	1/28/91	11AM

CHAIN OF CUSTODY RECORD

DESTINATION: MONTGOMERY LABORATORIES
OTHER:

Fed E: 186 475
Cooler #: 1057

FORT STORY - LACV



PROJECT NAME		PROJECT JOB #		ANALYSES REQUIRED												REMARKS		
LACV		1868 0530		VOC	TAH-H	MET/PP/BA	REST/AB	BVA										
TIME	DATE	LOCATION	IDENTIFIER	QA/QC	GRAB	COMP	NUMBER/SIZE OF CONTAINERS											
1402	1/26	LACV	SLCVSB1402(10)0126		✓		TWO 4OZ JARS	✓										
"	"	"	SLCVSB1402(10)0126		✓		ONE 4OZ JARS		✓									* Botte ID:
"	"	"	" " "			✓	ONE 8OZ JAR			✓	✓	✓						SLCVSB1402(c)0126

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
<i>M. Damian Sandoval</i>	M. DAMIAN SANDOVAL	JMM/SCIENTIST	1/26/01	1438
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY (LAB): <i>H.R.</i>	<i>H.R. (LAB)</i>	<i>JMM / LAB</i>	1/28/01	11AM

1035
1036

COC 1035
COC 1036

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: ft story Date Received: 1-28-91
Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 1-28-91
By (print) Hector Estrada (sign) H.E.

1. Did cooler come with shipping slip (air bill, etc.)? Yes No
If YES, attach & enter carrier and air bill # here: 9867191522

2. Were custody seals on outside of cooler? Yes No
If YES, how many & where: 2 / front-back
If Yes, enter the following: seal date: 1/26/91, seal name: MDS

3. Were custody seals unbroken & intact at delivery? Yes No

4. Were custody papers sealed in bag & taped to lid? Yes No

5. Were custody papers filled out properly (ink, etc.)? Yes No

6. Did you sign custody papers in appropriate place? Yes No

7. Was project identifiable from custody papers? Yes No

8. Have designated person(s) initial to acknowledge receipt: JAO (date) 1/28/91

B. LOG-IN PHASE: Date samples were logged-in: H.E. by:
(print) Hector Estrada (sign) H.E.

9. Describe packing:

10. If required, was enough ice used? Yes No

11. Were all bottles sealed in separate plastic bags? Yes No

12. Did all bottles arrive unbroken/in good condition? Yes No

13. Were all bottle labels complete (ID, date, sign, pres)? Yes No

14. Did all bottle labels agree with custody papers?
If NO, indicate discrepancies on back. Yes No Front jag

15. Were correct containers used for the analysis? Yes No bottle: SLCVSRWZ(C3) (FOR METHPH, IS) P&S:RCB.

16. Were correct preservatives used when required? Yes No

17. Was sufficient amount of sample sent for tests? Yes No

18. Bobbles absent in VOA vial?
If NO, list by sample id on back. Yes No

19. Was Client Services informed of problems? Yes No

6-4C - Ft. Story

James M. Montgomery

CHAIN OF CUSTODY RECORD

DESTINATION: MONTGOMERY LABORATORIES

Consulting Engineers Inc. # 1868.0536

Ref: 686 8159513



PROJECT NAME		PROJECT JOB #		ANALYSES REQUIRED						
USACE - LACV		1868.05		TFH-H						
SAMPLER(S): PRINTED NAME AND SIGNATURE		Nancy A. McNeilly Nancy A. McNeilly								
TIME	DATE	LOCATION	IDENTIFIER	DEPTH	QA/QC	GRAB	COMP	NOTES	NUMBER/SIZE OF CONTAINERS	REMARKS
0935	1/28/91	LACV	SLCVSW 14510128				X		2- 1L Amber Glass	
0950	1/28/91	LACV	SLCVSW 14520128				X		"	
1020	1/28/91	LACV	SLCVSW 14530128				X		"	
1020	1/28/91	LACV	SLCVSW 14530128(D)		QC		X		"	
1110	1/28/91	LACV	SLCVSW 14540128				X		"	
1140	1/28/91	LACV	SLCVSW 14550128				X		"	
1206	1/28/91	LACV	SLCVSW 14560128				X		"	
1020	1/28/91	LACV	SLCVSW 14530128(RB)		QC		X		"	

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY: Nancy A. McNeilly	Nancy A. McNeilly	James M. Montgomery / Assoc. Engineer	01/28/91	1625
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY (LAB): Bruce Hault	Bruce Hault	Montgomery Lab	1/29/91	

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: Ft. Story Date Received: 1/29/91
Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 1/29/91
By (print) Helen Brown (sign) Helen Brown

1. Did cooler come with shipping slip (air bill, etc.) Yes No
If YES, attach & enter carrier and air bill # here: 6868/159513

2. Were custody seals on outside of cooler? Yes No
If YES, how many & where: Opposite ends - 2
If Yes, enter the following: seal date: 1/28/91, seal name: NAM

3. Were custody seals unbroken & intact at delivery? Yes No

4. Were custody papers sealed in bag & taped to lid? Yes No

5. Were custody papers filled out properly (ink, etc.) Yes No

6. Did you sign custody papers in appropriate place? Yes No

7. Was project identifiable from custody papers? Yes No

8. Have designated person(s) initial to acknowledge receipt: JAO (date) 1/29/91

B. LOG-IN PHASE: Date samples were logged-in: 1/29/91 by:
(print) Kruec Paul (sign) [Signature]

9. Describe packing:

10. If required, was enough ice used? Yes No

11. Were all bottles sealed in separate plastic bags? Yes No

12. Did all bottles arrive unbroken/in good condition? No Yes SLC VSW 14538125

13. Were all bottle labels complete (ID, date, sign, pres)? Yes No Back bot broken in transit

14. Did all bottle labels agree with custody papers? Yes No
If NO, indicate discrepancies on back.

15. Were correct containers used for the analytes? Yes No

16. Were correct preservatives used when required? Yes No

17. Was sufficient amount of sample sent for tests? Yes No

18. Bubbles absent in VOA vials? Yes No
If NO, list by sample ID on back.

19. Was Client Services informed of problems? Yes No

CHAIN OF CUSTODY RECORD

Fed Ex # 3203387751
Cooler # 12
DESTINATION: MONTGOMERY LABORATORIES
OTHER: Rabb's Moody



PROJECT NAME		PROJECT JOB #		ANALYSES REQUIRED										REMARKS										
AT-GAS		1868.0541		<div style="display: flex; justify-content: space-between;"> TOX BEU/LE Moisture Flashpoint PCB Total Metals </div>																				
SAMPLER(S): PRINTED NAME AND SIGNATURE																								
M. Damian Sardoval																								
TIME	DATE	LOCATION	IDENTIFIER	QA/QC	GRAB	COMP	NUMBER/SIZE OF CONTAINERS																	
1710	1/28/91	AT-GAS	SATGTK1503(PS)0128			X	Two-125ml Glass	✓																
"	"	"	"			"	One-8oz Jar		✓	✓	✓	✓	✓											
1613	1/28/91	AT-GAS	SATGTK1501(PS)0128			X	Two-125ml Glass	✓																
"	"	"	"			"	One-8oz Jar		✓	✓	✓	✓	✓											

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY:	M. Damian Sardoval	JMM - Virginia / Scientist	1/29/91	0900
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY (LAB):				

1039

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: Army Story Date Received: 2/5/91
Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 2/5/91
By (print) Grace Hanks (sign) [Signature]

1. Did cooler come with shipping slip (air bill, etc.)? Yes No
If YES, attach & enter carrier and air bill # here: 9066895546

2. Were custody seals on outside of cooler? Received from Yes No
If YES, how many & where: another lab, not directly from field
If Yes, enter the following: seal date: _____, seal name: _____

3. Were custody seals unbroken & intact at delivery? Yes No

4. Were custody papers sealed in bag & taped to lid? Yes No

5. Were custody papers filled out properly (lab, etc.) Yes No

6. Did you sign custody papers in appropriate place? Yes No

7. Was project identifiable from custody papers? Yes No

8. Have designated person(s) initial to acknowledge receipt: JAC (date) 2/4/91

B. LOG-IN PHASE: Date samples were logged-in: 2/5/91 by: [Signature]
(print) Grace Hanks (sign) [Signature]

9. Describe packing:

10. If required, was enough ice used? Yes No

11. Were all bottles sealed in separate plastic bags? Yes No

12. Did all bottles arrive unbroken/in good condition? Yes No

13. Were all bottle labels complete (ID, date, sign, pres)? Yes No

14. Did all bottle labels agree with custody papers?
If NO, indicate discrepancies on back. Yes No

15. Were correct containers used for the analytes? Yes No

16. Were correct preservatives used when required? Yes No

17. Was sufficient amount of sample sent for tests? Yes No

18. Bubbles absent in VOA vials?
If NO, list by sample ID on back. Yes No

19. Was Client Services informed of problems? Yes No

KSAT Yes No
BAH Yes No
[Signature] Yes No
No Custody Papers Received

USACE
CHAIN OF CUSTODY RECORD

Ft. Story

Fed Ex # 9867147566

Cooler # 18

DESTINATION: MONTGOMERY LABORATORIES

OTHER:



PROJECT NAME		PROJECT JOB #		ANALYSES REQUIRED									
AT-GAS		1868-0541		TEH-L AS-CAL-G-2b TOX Pest/PCB									
SAMPLER(S): PRINTED NAME AND SIGNATURE										NUMBER/SIZE OF CONTAINERS		REMARKS	
TIME	DATE	LOCATION	IDENTIFIER	QA/QC	GRAB	COMP							
1800	1/26/91	AT-GAS	SATGTK1505(AQ)0128			X	Two - 40ml	✓					
"	"	"	"			"	One - 250ml Plastic		✓				
"	"	"	"			"	Two - 125ml Glass			✓			
"	"	"	"			"	One - 2L Amber Glass				✓	broken - got a new jar 1/30	
1800	1/26/91	AT-GAS	SATGTK1505(AQ)0128(D)	QC		X	Two - 40ml	✓					
"	"	"	"			"	One - 250ml Plastic		✓				
"	"	"	"			"	Two - 125ml Glass			✓			
"	"	"	"			"	One - 2L Amber Glass				✓	broken, sample lost 1/30	

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
<i>M. Damian Sandoval</i>	M. Damian Sandoval	JMM - Virginia / Scientist	01/29/91	09:30
<i>Mark Williams</i>	Mark Williams	Commonwealth Lab/manager	1-30-91	10:00
<i>Mark Williams</i>	Mark Williams	Commonwealth Lab/manager	1-30-91	4:00
<i>J. P. Sullivan</i>	J. P. Sullivan	Montgomery Lab	1/31/91	2:00

COC 1040

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: Army Ft Stry Date Received: 1/31/91
Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Dam cooler opened: 1/31/91
by (print) Sruce Halk (sign) [Signature]

1. Did cooler come with shipping slip (air bill, etc.)? Yes No
If YES, attach & enter carrier and air bill # here: 9066753990

2. Were custody seals on outside of cooler? Yes No
If YES, how many & where: 2/Ends
If Yes, enter the following: seal date: 1/29/91, seal name: NAH

3. Were custody seals unbroken & intact at delivery? Yes No

4. Were custody papers sealed in bag & taped to lid? Yes No

5. Were custody papers filled out properly (lab, etc.)? Yes No

6. Did you sign custody papers in appropriate place? Yes No

7. Was project identifiable from custody papers? Yes No

8. Have designated person(s) initial to acknowledge receipt: JAO (date) 1/31/91

B. LOG-IN PHRASE: Date samples were logged-in: 1/31/91 by:
(print) Sruce Halk (sign) [Signature]

9. Describe packing:

10. If required, was enough ice used? Yes No

11. Were all bottles sealed in separate plastic bags? Yes No

12. Did all bottles arrive unbroken/in good condition? Yes No

13. Were all bottle labels complete (ID, date, sign, pres)? Yes No

14. Did all bottle labels agree with custody papers?
If NO, indicate discrepancies on back. Yes No

15. Were correct containers used for the analysis? Yes No

16. Were correct preservatives used when required? Yes No

17. Was sufficient amount of sample sent for tests? Yes No

18. Bubbles absent in VOA vials?
If NO, list by sample ID on back. Yes No

19. Was Client Services informed of problems? Yes No

USACE

CHAIN OF CUSTODY RECORD

Ft. Story

Fed Ex # 9867147555

Cooler # 1057

JMM James M Montgomery
Consulting Engineers Inc

DESTINATION: MONTGOMERY LABORATORIES

OTHER:



PROJECT NAME LACV	PROJECT JOB # 1868.0536	ANALYSES REQUIRED
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SAMPLER(S): PRINTED NAME AND SIGNATURE
M. DAMIAN SANDOVAL *M. Damian Sandoval*

TIME	DATE	LOCATION	IDENTIFIER	QA/QC	GRAB	COMP	NUMBER/SIZE OF CONTAINERS	VCAPP (6L)	DB METAL (6L)	TOT METAL	BVA	HIGH BPHC	REMARKS
1448	1/29	LACV	SLCVMW14010129			✓	2 1L LTR MDS						broken in transit
↓	↓	"	"			✓	ONE LITER PIAS	✓	✓				
↓	↓	"	"			✓	ONE LITER GLASS	✓	✓				
↓	↓	"	"			✓	ONE TWO LITER			✓			
↓	↓	"	"			✓	TWO ONE LITER				✓		
1448	1/29/91	LACV	SLCVMW14010129(D)			✓	2 1L LTR MDS						
↓	↓	"	"				ONE LITER PIAS	✓	✓				
↓	↓	"	"				ONE LITER GL	✓	✓				
↓	↓	"	"				ONE TWO LITER (6L)			✓			
↓	↓	"	"				TWO ONE LITER (6L)				✓		

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY: <i>M. DAMIAN SANDOVAL</i>	<i>M DAMIAN SANDOVAL</i>	<i>JMM / SCIENTIST</i>	<i>1/29/91</i>	<i>1748</i>
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY (LAB): <i>W. B.</i>	<i>HECTOR ESTRADA</i>	<i>JMM - LAB</i>	<i>1/31/91</i>	<i>1000</i>

COC 1053

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: 4COE Fort Stuy Kir-1 Date Received: Thurs. 1/31/91
Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 1/31/91
By (print) Helen Brooks (sign) Helen Brooks

1. Did cooler come with shipping slip (air bill, etc.)
If YES, attach & enter carrier and air bill # here: 986747555 Yes No

2. Were custody seals on outside of cooler?
If YES, how many & where: 2 Yes No
If Yes, enter the following: seal date: 1/29, seal name: NANA

3. Were custody seals unbroken & intact at delivery? Yes No

4. Were custody papers sealed in bag & taped to lid? Yes No

5. Were custody papers filled out properly (ink, etc.) Yes No

6. Did you sign custody papers in appropriate place? Yes No

7. Was project identifiable from custody papers? Yes No

8. Have designated person(s) initial to acknowledge receipt: JAO (date) 1/31/91

B. LOG-IN PHASE: Date samples were logged-in: 1-31-91 by:
(print) RECTOR ESTRADA (sign) RE-E

9. Describe packing:

10. If required, was enough ice used? Yes No

11. Were all bottles sealed in separate plastic bags? Yes No

12. Did all bottles arrive unbroken/in good condition? Yes No

13. Were all bottle labels complete (ID, date, sign, pres)? Yes No

14. Did all bottle labels agree with custody papers?
If NO, indicate discrepancies on back. Yes No

15. Were correct containers used for the analytes? Yes No

16. Were correct preservatives used when required? Yes No

17. Was sufficient amount of sample sent for tests? Yes No

18. Bubbles absent in VOA vials?
If NO, list by sample id on back. Yes No

19. Was Client Services informed of problems?

NOTE
in
front
page

JMM James M. Montgomery
Consulting Engineers Inc.

USACE
CHAIN OF CUSTODY RECORD
Ft Story

Fed Ex # 9867147570
Cooler # 47
DESTINATION: MONTGOMERY LABORATORIES
OTHER:



PROJECT NAME LACV	PROJECT JOB # 1868.0536	ANALYSES REQUIRED
SAMPLER(S): PRINTED NAME AND SIGNATURE M. DAMIAN SANDOVAL <i>M. Sandoval</i>		<div style="display: flex; justify-content: space-around; font-size: small;"> VOAPP DIS METAL (GL) Tot METAL (DL) BWA HIGH BPHC VOAPP (TS) </div>

TIME	DATE	LOCATION	IDENTIFIER	QA/QC	GRAB	COMP	NUMBER/SIZE OF CONTAINERS	VOAPP	DIS METAL (GL)	Tot METAL (DL)	BWA	HIGH BPHC	VOAPP (TS)	REMARKS
1448	1/29/91	LACV	SLCVMW14010129(M)	✓		✓	3-- 40ml GL	✓						
↓	↓	↓	↓	✓		✓	one LITER PLAS	✓	✓					
↓	↓	↓	↓	✓		✓	one LITER GLAS	✓	✓					
↓	↓	↓	↓	✓		✓	one (Ambi) TWO Liter			✓				
↓	↓	↓	↓	✓		✓	TWO 1-Liter Amb			✓				
1448	1/29/91	LACV	SLCVMW 14010129(MSD)	✓		✓	Three 40 ml GL	✓						
↓	↓	↓	↓	✓		✓	one Liter PLAS		✓	✓				
↓	↓	↓	↓	✓		✓	one Liter GLAS		✓	✓				
↓	↓	↓	↓	✓		✓	one Two Liter (Am)			✓				
↓	↓	↓	↓	✓		✓	TWO 1-Liter Ambi			✓				
1448	1/29/91	LACV	SLCVMW14010129(TB)	✓		✓	one 40ml GL						✓	
1448	1/29/91	LACV	SLCVMW 14010129(D)			✓	Three 40ml GL	✓						
1448	1/29/91	LACV	SLCVMW 14010129			✓	Three 40ml GL	✓						

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
<i>M. Sandoval</i>	M. DAMIAN SANDOVAL	Jmm/SCIENTIST	1/29/91	1744
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY (LAB): <i>H. Estrada</i>	HECTOR ESTRADA	Jmm / LAB	1-31-91	10am

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

COC 1056

PROJECT: FT STORY Date Received: 1-31-91
Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 1-31-91
by (print) HECTOR RESTRADA (sign) H.R.

1. Did cooler come with shipping slip (air bill, etc.)? Yes No
If YES, attach & enter carrier and air bill # here: 9867147570

2. Were custody seals on outside of cooler? Yes No
If YES, how many & where: 2/Back-front
If Yes, enter the following: seal date: 1-31-91, seal name: NAM

3. Were custody seals unbroken & intact at delivery? Yes No

4. Were custody papers sealed in bag & taped to lid? Yes No

5. Were custody papers filled out properly (ink, etc.)? Yes No

6. Did you sign custody papers in appropriate place? Yes No

7. Was project identifiable from custody papers? Yes No

8. Have designated person(s) initial to acknowledge receipt: JAO (date) 1/31/91

B. LOG-IN PHRASE: Date samples were logged-in: 1-31-91 by:
(print) HECTOR RESTRADA (sign) H.R.

9. Describe packing:

10. If required, was enough ice used? Yes No

11. Were all bottles sealed in separate plastic bags? Yes No

12. Did all bottles arrive unbroken/in good condition? Yes No

13. Were all bottle labels complete (ID, date, sign, pres)? Yes No

14. Did all bottle labels agree with custody papers?
If NO, indicate discrepancies on back. Yes No

15. Were correct containers used for the analysis? Yes No

16. Were correct preservatives used when required? Yes No

17. Was sufficient amount of sample sent for tests? Yes No

18. Bubbles absent in VOA vials?
If NO, list by sample id on back. Yes No

19. Was Client Services informed of problems? Yes No

Fed Ex # 9867147581

Cooler # 76

JMM James M Montgomery
Consulting Engineers Inc

CHAIN OF CUSTODY RECORD

DESTINATION: MONTGOMERY LABORATORIES
OTHER:

PROJECT NAME		PROJECT JOB #		ANALYSES REQUIRED															
LACV		1868-0536		VOAPP TOTAL Met (METAP 1A) DIS Met (METAP 1B) BWA HIGH BPHC TRIP BLANK															
SAMPLER(S): PRINTED NAME AND SIGNATURE														QA/QC	GRAB	COMP	NUMBER/SIZE OF CONTAINERS	REMARKS	
M. Damian Sandoval M. Montgomery Sandoval																			
TIME	DATE	LOCATION	IDENTIFIER	QA/QC	GRAB	COMP	NUMBER/SIZE OF CONTAINERS												
1448	1/29/91	LACV	SLCVMW14010129(RB)	✓		✓	THREE 40ml VIALS	✓											
				✓		✓	ONE 1-LITER AM		✓	✓									
				✓		✓	ONE 1-LITER PLUS		✓	✓									
				✓		✓	TWO 1-LITER AM			✓									
				✓		✓	TWO 1-LITER AM			✓									
1448	1/29/91	LACV	SLCVMW14010129(RB)	✓		✓	ONE 40ml VIALS												

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
<i>M. Damian Sandoval</i>	M. DAMIAN SANDOVAL	JMM/SCIENTIST	1/29/91	1808
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY (LAB): <i>H. E.</i>	HECTOR ESTEADA	JMM/LAB	1-31-91	1000-

JMM James M Montgomery
Consulting Engineers Inc.

USACE
CHAIN OF CUSTODY RECORD

Ft. Story

DESTINATION: MONTGOMERY LABORATORIES

Fed Ex # 9867147603
Cooler # 13

OTHER:



PROJECT NAME		PROJECT JOB #		ANALYSES REQUIRED															
LACV		186B.0536		<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">MCP/PP/PA (Tox)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">MCP/PP/PA (Dissolved)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">PNA</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">High BPHC</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">VOAPP</div> </div>															
SAMPLER(S): PRINTED NAME AND SIGNATURE																			
M. Dominican Sandoval <i>M. Dominican Sandoval</i>																			
TIME	DATE	LOCATION	IDENTIFIER	QA/QC	GRAB	COMP	NUMBER/SIZE OF CONTAINERS												REMARKS
0740	1/30/91	LACV	SLCVMW14020130			X	Four - 1L Glass	✓	✓										
"	"	"	"			X	One - 1L Plastic	✓	✓										
"	"	"	"			X	Two - 1L Amber Glass			✓	✓								
"	"	"	"			X	Three - 40ml Glass					✓							
0700	1/30/91	LACV	SLCVMW14030130			X	One - 1L Glass	✓	✓										
"	"	"	"			X	One - 1L Plastic	✓	✓										
"	"	"	"			X	Two - 1L Amber Glass				✓								
"	"	"	"			X	Three - 40ml Glass					✓							
"	"	"	"			X	One - 2L Amber Glass				✓								
0700	1/30/91	LACV	SLCVMW14030130(TB)				One - 40ml Glass					✓							

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
<i>M. Dominican Sandoval</i>	M. Dominican Sandoval	JMM - Virginia / Scientist	1/30/91	0940
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY (LAB): <i>J. Estrella</i>	Hector E.	JMM / LAB	1/31/91	1010

ore. 1042

COC1042

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: FT STREY Date Received: 1-31-91

Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 1-31-91
by (print) HECTOR ESTRADA (sign) HE

1. Did cooler come with shipping slip (air bill, etc.)? Yes No
If YES, attach & enter carrier and air bill # here: 986-7147693

2. Were custody seals on outside of cooler? Yes No
If YES, how many & where: 2 / FRONT-BACK
If Yes, enter the following: seal date: 1-30-91, seal name: MOS

3. Were custody seals unbroken & intact at delivery? Yes No

4. Were custody papers sealed in bag & taped to lid? Yes No

5. Were custody papers filled out properly (ink, etc.) Yes No

6. Did you sign custody papers in appropriate place? Yes No

7. Was project identifiable from custody papers? Yes No

8. Have designated person(s) initial to acknowledge receipt: JAO (date) 1/31/91

B. LOG-IN PHASE: Date samples were logged-in: 1-31-91 by:
(print) HECTOR ESTRADA (sign) HE

9. Describe packing:

10. If required, was enough ice used? Yes No

11. Were all bottles sealed in separate plastic bags? Yes No

12. Did all bottles arrive unbroken/in good condition? Yes No

13. Were all bottle labels complete (ID, date, sign, pres)? Yes No

14. Did all bottle labels agree with custody papers?
If NO, indicate discrepancies on back. Yes No

15. Were correct containers used for the analytes? Yes No

16. Were correct preservatives used when required? Yes No

17. Was sufficient amount of sample sent for tests? Yes No

18. Bubbles absent in VOA vials?
If NO, list by sample ID on back. Yes No

19. Was Client Services informed of problems? Yes No

USMC
CHAIN OF CUSTODY RECORD
Ft. Story

DESTINATION: MONTGOMERY LABORATORIES

OTHER: _____



PROJECT NAME LACV	PROJECT JOB # 1868.0534	ANALYSES REQUIRED
SAMPLER(S): PRINTED NAME AND SIGNATURE M. Damian Sandoval <i>M. Damian Sandoval</i>		<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">High BPC</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BNA</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">MePP + Pb (Total)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">MePP + Pb (Dist)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">VOAPP</div> </div>

TIME	DATE	LOCATION	IDENTIFIER	QA/QC	GRAB	COMP	NUMBER/SIZE OF CONTAINERS	ANALYSES REQUIRED	REMARKS
0830	1/30/91	LACV	SLCVMW14040130			X	Two - 1L Amber Glass	✓	
"	"	"	"			X	One - 1L Amber Glass		
"	"	"	"			X	One - 1L Plastic		
"	"	"	"			X	Three - 40ml Glass		
0830	1/30/91	LACV	SLCVMW14040130(TB)				One - 40ml Glass		

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
<i>M. Damian Sandoval</i>	M. Damian Sandoval	JMM - Virginia / Scientist	1/30/91	0950
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY (LAB): <i>H. E.</i>	<i>Heather E. Hester</i>	Jmm / Lab	1-31-91	10am

COC 1043

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: Pt Story Date Received: 1-31-91
Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 1-31-91
By (print) Hector Estrada (sign) H-E

1. Did cooler come with shipping slip (air bill, etc.)? 5867147592 Yes No
If YES, attach & enter carrier and air bill # here: _____

2. Were custody seals on outside of cooler? Yes No
If YES, how many & where: N/A
If Yes, enter the following: seal date: N/A, seal name: N/A

3. Were custody seals unbroken & intact at delivery? Yes No

4. Were custody papers sealed in bag & taped to lid? Yes No

5. Were custody papers filled out properly (ink, etc.) Yes No

6. Did you sign custody papers in appropriate place? Yes No

7. Was project identifiable from custody papers? Yes No

8. Have designated person(s) initial to acknowledge receipt: JAO (date) 1/31/91

B. LOG-IN PHASE: Date samples were logged-in: 1-31-91 by:
(print) Hector Estrada (sign) H-E

9. Describe packing:

10. If required, was enough ice used? Yes No

11. Were all bottles sealed in separate plastic bags? Yes No

12. Did all bottles arrive unbroken/in good condition? Yes No

13. Were all bottle labels complete (ID, date, sign, pres)? Yes No

14. Did all bottle labels agree with custody papers?
If NO, indicate discrepancies on back. Yes No

15. Were correct containers used for the analytes? Yes No

16. Were correct preservatives used when required? Yes No

17. Was sufficient amount of sample sent for tests? Yes No

18. Bubbles absent in VOA vials?
If NO, list by sample ID on back. Yes No

COC 1044
COC 1050

COC 1044
COC 1050

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: Army Story Date Received: 1/31/91
Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 1/31/91
by (print) Arne Hauk (sign) [Signature]

1. Did cooler come with shipping slip (air bill, etc.)? Yes No
If YES, attach & enter carrier and air bill # here: 9867148406

2. Were custody seals on outside of cooler? Yes No
If YES, how many & where: _____
If Yes, enter the following: seal date: _____, seal name: _____

3. Were custody seals unbroken & intact at delivery? Yes No

4. Were custody papers sealed in bag & taped to lid? Yes No

5. Were custody papers filled out properly (ink, etc.)? Yes No

6. Did you sign custody papers in appropriate place? Yes No

7. Was project identifiable from custody papers? Yes No

8. Have designated person(s) initial to acknowledge receipt: JAO (date) 1/31/91

B. LOG-IN PHASE: Date samples were logged-in: 1/31/91 by: _____
(print) Arne Hauk (sign) [Signature]

9. Describe packing: _____

10. If required, was enough ice used? Yes No

11. Were all bottles sealed in separate plastic bags? Yes No

12. Did all bottles arrive unbroken/in good condition? Yes No

13. Were all bottle labels complete (ID, date, sign, pres)? Yes No

14. Did all bottle labels agree with custody papers?
If NO, indicate discrepancies on back. Yes No

15. Were correct containers used for the analytes? Yes No

16. Were correct preservatives used when required? Yes No

17. Was sufficient amount of sample sent for tests? Yes No

18. Bubbles absent in VOA vials?
If NO, list by sample lid on back. Yes No

19. Was Client Services informed of problems? Yes No

COC 764

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: Army Ft Story Date Received: 2/23/91

Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 2/23/91
by (print) C. H. Hault (sign) [Signature]

1. Did cooler come with shipping slip (air bill, etc.)? Yes No
If YES, attach & enter carrier and air bill # here: 877449854

2. Were custody seals on outside of cooler? Yes No
If YES, how many & where: 3/ends
If Yes, enter the following: seal date: 2/23/91 seal name: ETA

3. Were custody seals unbroken & intact at delivery? Yes No

4. Were custody papers sealed in bag & taped to lid? Yes No

5. Were custody papers filled out properly (ink, etc.)? Yes No

6. Did you sign custody papers in appropriate place? Yes No

7. Was project identifiable from custody papers? Yes No

8. Have designated person(s) initial to acknowledge receipt: AO (date) 2/25/91

B. LOG-IN PHASE: Date samples were logged-in: 2-25-91 by:
(print) H. Estrella (sign) HE

9. Describe packing:

10. If required, was enough ice used? Yes No

11. Were all bottles sealed in separate plastic bags? Yes No

12. Did all bottles arrive unbroken/in good condition? Yes No

13. Were all bottle labels complete (ID, date, sign, pres)? Yes No

14. Did all bottle labels agree with custody papers?
If NO, indicate discrepancies on back. Yes No

15. Were correct containers used for the analytes? Yes No

16. Were correct preservatives used when required? Yes No

17. Was sufficient amount of sample sent for tests? Yes No

18. Bubbles absent in VOA vials?
If NO, list by sample ID on back. Yes No

19. Was Client Services informed of problems? Yes No

APPENDIX C
MS/MSD, LCS AND METHOD BLANK DATA

**TABLE C - 1
MS/MSD, LCS AND METHOD BLANK DATA FOR
VOC ANALYTICAL BATCHES**

Lab ID	Sample ID	Date Analyzed	Compound	Percent Recovery				Measure of Precision	
				LCS 1	LCS 2	MS	MSD		RPD
L10597	SLCVDI	2/7/91	1,1-Dichloroethene	93		74	74	MS/MSD	0
L10598	SLCVIW	2/7/91	Trichloroethene	110		90	89	MS/MSD	1
L11512	MS	2/7/91	Benzene	111		91	90	MS/MSD	1
L11513	MSD	2/7/91	Toluene	119		98	95	MS/MSD	3
	Method Blank	ND	Chlorobenzene	136		112	111	MS/MSD	1
L11068	SLCVSB1406(0)	2/7/91	1,1-Dichloroethene	99		84	89	MS/MSD	6
L11069	SLCVSB1401(0)	2/7/91	Trichloroethene	123		98	104	MS/MSD	6
L11082	SLCVSB1408(5)	2/7/91	Benzene	119		101	107	MS/MSD	6
L11083	SLCVSB1405(0)	2/7/91	Toluene	125		107	113	MS/MSD	5
L11084	SLCVSB1403(0)	2/7/91	Chlorobenzene	144		125	131	MS/MSD	5
L11085	SLCVSB1402(10)	2/7/91							
L10586	SLCVSB1404(C3)	2/7/91							
L10587	SLCVSB1407(C3)	2/7/91							
L10587	SLCVSB1407(C3) MS	2/7/91							
L10587	SLCVSB1407(C3) MSD	2/7/91							
	Method Blank	ND							
L11574	SLCVMW1401	2/9/91	1,1-Dichloroethene	78		70	80	MS/MSD	13
L11575	SLCVMW1401 D	2/9/91	Trichloroethene	85		85	88	MS/MSD	3
L11576	SLCVMW1401 TB	2/9/91	Benzene	93		90	93	MS/MSD	3
L11566	SLCVMW1401 RB	2/9/91	Toluene	90		88	90	MS/MSD	2
L11581	SLCVMW1404	2/9/91	Chlorobenzene	100		95	100	MS/MSD	5
L11582	SLCVMW1404 TB	2/9/91							
L11585	SLCVMW1402	2/9/91							
L11587	SLCVMW1403 TB	2/9/91							
L11572	SLCVMW1401 MS	2/9/91							
L11573	SLCVMW1401 MSD	2/9/91							
	Method Blank	ND							
L11586	SLCVMW1403	2/11/91	1,1-Dichloroethene	72	71			LCS	1
			Trichloroethene	82	72			LCS	13
			Benzene	85	74			LCS	14
			Toluene	86	72			LCS	18
	Method Blank	ND	Chlorobenzene	91	79			LCS	14

TABLE C - 2
MS/MSD, LCS AND METHOD BLANK DATA FOR
BNA ANALYTICAL BATCHES

Lab ID	Sample ID	Date Extracted	Date Analyzed	Compound	Percent Recovery			Measure of Precision	RPD
					LCS 1	LCS 2	MS MSD		
L10312	SLCVSD1431(C3)	1/29/91	2/18/91	Acenaphthene	73		75 73	MS/MSD	3
L10313	SLCVSD1432(C3)	1/29/91	2/18/91	1,4-Dichlorobenzene	66		70 63	MS/MSD	11
L10314	SLCVSD1433(C3)	1/29/91	2/18/91	2,4-Dinitrotoluene	91		91 89	MS/MSD	2
L10586	SLCVSB1404(C3)	1/29/91	2/18/91	n-Nitrosodi-n-propylamine	74		82 79	MS/MSD	4
L10587	SLCVSB1407(C3)	1/29/91	2/18/91	Pyrene	87		92 91	MS/MSD	1
L10588	SLCVSD1434(C3)	1/29/91	2/18/91	1,2,4-Trichlorobenzene	87		92 84	MS/MSD	9
L10589	SLCVSD1435(C3)	1/29/91	2/18/91	2-Chlorophenol	60		66 61	MS/MSD	8
L11066	SLCVSB1406(C3)	1/29/91	2/18/91	2-Nitrophenol	71		73 67	MS/MSD	9
L11067	SLCVSB1401(C3)	1/29/91	2/18/91	Pentachlorophenol	128		121 116	MS/MSD	4
L11076	SLCVSD1436(C3)	1/29/91	2/18/91	Phenol	54		57 55	MS/MSD	4
L10586	SLCVSB1404(C3) MS	1/29/91	2/18/91	4-Chloro-3-methylphenol	70		74 74	MS/MSD	0
L10586	SLCVSB1404(C3) MSD	1/29/91	2/18/91						
	Method Blank	ND							
L11078	SLCVSB1405(C3)	1/30/91	2/20/91	Acenaphthene	62		60 56	MS/MSD	7
L11079	SLCVSB1408(C3)	1/30/91	2/20/91	1,4-Dichlorobenzene	58		54 50	MS/MSD	8
L11080	SLCVSB1403(C3)	1/30/91	2/20/91	2,4-Dinitrotoluene	84		75 71	MS/MSD	5
L11081	SLCVSB1403(C3)	1/30/91	2/20/91	n-Nitrosodi-n-propylamine	66		67 61	MS/MSD	9
L11077	SLCVSD1436 D MS	1/30/91	2/20/91	Pyrene	81		78 73	MS/MSD	7
L11077	SLCVSD1436 D MSD	1/30/91	2/20/91	1,2,4-Trichlorobenzene	73		70 65	MS/MSD	7
				2-Chlorophenol	56		52 49	MS/MSD	6
				2-Nitrophenol	68		64 60	MS/MSD	6
				Pentachlorophenol	114		110 102	MS/MSD	8
				Phenol	45		42 42	MS/MSD	0
	Method Blank	ND		4-Chloro-3-methylphenol	62		62 58	MS/MSD	7
L11566	SLCVMW1401 RB	2/5/91	2/22/91	Acenaphthene	72		71 89	MS/MSD	23
L11572	SLCVMW1401 MS	2/5/91	2/22/91	1,4-Dichlorobenzene	68		66 84	MS/MSD	24
L11573	SLCVMW1401 MSD	2/5/91	2/22/91	2,4-Dinitrotoluene	87		81 87	MS/MSD	7
L11598	SLCVMW1401	2/5/91	2/22/91	n-Nitrosodi-n-propylamine	68		68 90	MS/MSD	28
L11599	SLCVMW1401 D	2/5/91	2/22/91	Pyrene	90		95 104	MS/MSD	9
L11581	SLCVMW1404	2/5/91	2/22/91	1,2,4-Trichlorobenzene	84		72 94	MS/MSD	27
L11585	SLCVMW1402	2/5/91	2/22/91	2-Chlorophenol	64		63 73	MS/MSD	15
L11586	SLCVMW1403	2/5/91	2/22/91	2-Nitrophenol	66		63 76	MS/MSD	19
				Pentachlorophenol	105		85 91	MS/MSD	7
				Phenol	66		67 74	MS/MSD	10
	Method Blank	ND		4-Chloro-3-methylphenol	83		96 101	MS/MSD	5
L10598	SLCVIW	1/28/91	2/23/91	Acenaphthene	70			None	
				1,4-Dichlorobenzene	64			None	
				2,4-Dinitrotoluene	67			None	
				n-Nitrosodi-n-propylamine	70			None	
				Pyrene	77			None	
				1,2,4-Trichlorobenzene	75			None	
				2-Chlorophenol	70			None	
				2-Nitrophenol	62			None	
				Pentachlorophenol	120			None	
				Phenol	57			None	
	Method Blank	ND		4-Chloro-3-methylphenol	67			None	

TABLE C - 2
MS/MSD, LCS AND METHOD BLANK DATA FOR
BNA ANALYTICAL BATCHES

Lab ID	Sample ID	Date Extracted	Date Analyzed	Compound	Percent Recovery				Measure of	
					LCS 1	LCS 2	MS	MSD	Precision	RPD
L24758	SLCVDI	2/25/91	2/28/91	Acenaphthene	56	66			LCS	16
				1,4-Dichlorobenzene	48	55			LCS	14
				2,4-Dinitrotoluene	76	70			LCS	8
				n-Nitrosodi-n-propylamine	56	60			LCS	7
				Pyrene	92	78			LCS	16
				1,2,4-Trichlorobenzene	54	64			LCS	17
				2-Chlorophenol	63	58			LCS	8
				2-Nitrophenol	74	52			LCS	35
				Pentachlorophenol	101	70			LCS	36
				Phenol	49	44			LCS	11
				4-Chloro-3-methylphenol	69	60			LCS	14
	Method Blank	ND								
L35577	SLCVIW	3/4/91	3/20/91	Acenaphthene	59	65			LCS	10
L35931	SLCVMW1401	3/4/91	3/20/91	1,4-Dichlorobenzene	56	53			LCS	6
L35932	SLCVMW1401D	3/4/91	3/20/91	2,4-Dinitrotoluene	59	69			LCS	16
				n-Nitrosodi-n-propylamine	58	53			LCS	9
				Pyrene	108	67			LCS	47
				1,2,4-Trichlorobenzene	59	46			LCS	25
				2-Chlorophenol	53	62			LCS	16
				2-Nitrophenol	49	58			LCS	17
				Pentachlorophenol	78	72			LCS	8
				Phenol	46	58			LCS	23
				4-Chloro-3-methylphenol	76	74			LCS	3
	Method Blank	ND								
L35930	SLCVMW1401 RB	3/11/91	3/21/91	Acenaphthene	60				None	
L35933	SLCVMW1403	3/11/91	3/21/91	1,4-Dichlorobenzene	53				None	
L35934	SLCVMW1404	3/11/91	3/21/91	2,4-Dinitrotoluene	66				None	
				n-Nitrosodi-n-propylamine	63				None	
				Pyrene	58				None	
				1,2,4-Trichlorobenzene	50				None	
				2-Chlorophenol	42				None	
				4-Nitrophenol	39				None	
				Pentachlorophenol	51				None	
				Phenol	35				None	
				4-Chloro-3-methylphenol	50				None	

TABLE C - 3
MS/MSD, LCS AND METHOD BLANK DATA FOR
PESTICIDE/PCB ANALYTICAL BATCHES

Lab ID	Sample ID	Date Extracted	Date Analyzed	Method Blank	Compound	Percent Recovery				Measure of Precision	RPD
						LCS 1	LCS 2	MS	MSD		
L10312	SLCVSD1431(C3)	1/28/91	2/6/91	ND	Aldrin	88		115	114	MS/MSD	1
L10313	SLCVSD1432(C3)	1/28/91	2/6/91		Lindane	103		131	128	MS/MSD	2
L10314	SLCVSD1433(C3)	1/28/91	2/6/91		4,4-DDT	95		122	135	MS/MSD	10
L10586	SLCVSB1404(C3)	1/28/91	2/6/91		Dieldrin	105		100	104	MS/MSD	4
L10587	SLCVSD1407(C3)	1/28/91	2/6/91		Endrin	124		115	121	MS/MSD	5
L10588	SLCVSD1434(C3)	1/28/91	2/6/91		Heptachlor	108		104	108	MS/MSD	4
L10589	SLCVSD1435(C3)	1/28/91	2/6/91		Arochlor 1254	94					
L11066	SLCVSB1406(C3)	1/28/91	2/6/91								
L11067	SLCVSB1401(C3)	1/28/91	2/6/91								
L11076	SLCVSD1436(C3)	1/28/91	2/6/91								
L10312	SLCVSD1431(C3) MS	1/28/91	2/6/91								
L10312	SLCVSD1431(C3) MSD	1/28/91	2/6/91								
L11077	SLCVSD1436(C3) D	1/31/91	2/6/91	ND	Aldrin	101		110	100	MS/MSD	10
L11078	SLCVSB1405(C3)	1/31/91	2/6/91		Lindane	113		123	112	MS/MSD	9
L11079	SLCVSB1408(C3)	1/31/91	2/6/91		4,4-DDT	111		296	157	MS/MSD	61
L11080	SLCVSB1403(C3)	1/31/91	2/6/91		Dieldrin	114		140	130	MS/MSD	7
L11081	SLCVSB1402(10)	1/31/91	2/6/91		Endrin	135		150	141	MS/MSD	6
L11077	SLCVSD1436(C3) D MS	1/31/91	2/6/91		Heptachlor	109		128	118	MS/MSD	8
L11077	SLCVSD1436(C3) D MSD	1/31/91	2/6/91		Arochlor 1254	114					
L11079 (1)	SLCVSB1408(C3)	1/31/91	2/6/91	ND	Aldrin	101		69	76	MS/MSD	10
L11080 (1)	SLCVSB1403(C3)	1/31/91	2/6/91		Lindane	113		69	79	MS/MSD	14
L11077 (1)	SLCVSD1436(C3) D MSD	1/31/91	2/6/91		4,4-DDT	111		108	83	MS/MSD	26
L11077 (1)	SLCVSD1436(C3) D MS	1/31/91	2/6/91		Dieldrin	114		77	78	MS/MSD	1
					Endrin	135		77	82	MS/MSD	6
					Heptachlor	109		67	79	MS/MSD	16
					Arochlor 1254	114					
L22320	SATGTK1501(PS)	2/6/91	2/7/91	ND	Arochlor 1254	103.5	118.2			LCS	13
L22321	SATGTK1503(PS)	2/6/91	2/7/91								
L10587 (1)	SLCVSB1407(C3)	1/28/91	2/13/91	ND	Aldrin	88		115	114	MS/MSD	1
L10589 (1)	SLCVSD1435(C3)	1/28/91	2/13/91		Lindane	103		131	128	MS/MSD	2
					4,4-DDT	95		122	135	MS/MSD	10
					Dieldrin	105		100	104	MS/MSD	4
					Endrin	124		115	121	MS/MSD	5
					Heptachlor	108		104	108	MS/MSD	4
					Arochlor 1254	94					
L11570	SATGTK1505(AQ)	2/1/91	2/13/91	ND	Aldrin	67	69			LCS	3
L11571	SATGTK1505(AQ) D	2/1/91	2/13/91		Lindane	73	75			LCS	3
L11563	SATGTK1505(AQ) R	2/1/91	2/13/91		4,4-DDT	85	81			LCS	5
L11564	SATGTK1505(AQ) D R	2/1/91	2/13/91		Dieldrin	76	82			LCS	8
					Endrin	76	81			LCS	6
					Heptachlor	77	70			LCS	10
					Arochlor 1254	75					
L24758	SLCVDI	2/26/91	2/28/91	ND	Aldrin	96	102			LCS	6
					Lindane	101	106			LCS	5
					4,4-DDT	99	109			LCS	10
					Dieldrin	110	122			LCS	10
					Endrin	108	120			LCS	11
					Heptachlor	81	107			LCS	28
					Arochlor 1254	95					

(1) Reanalyzed because initial runs failed internal QC standards.

TABLE C - 4
MS/MSD, LCS AND METHOD BLANK DATA FOR
ICAP METALS ANALYTICAL BATCHES

Lab No.	Sample ID	Date Analyzed	QC Data	Ag	Ba	Be	Cd	Cr	Cu	Ni	Zn	Sb	As	Se	Pb	Tl	
L10312	SLCVSD1431(C3)	1/29/91	Method Blank	ND	ND	ND	ND										
L10313	SLCVSD1432(C3)		LCS 1	101	105	101	103	102	108	105	107	83	101	100	103	100	
L10314	SLCVSD1433(C3)		LCS 2	94	100	94	94	96	102	98	97	95	92	90	94	96	
			RPD	7	5	7	9	6	6	7	10	13	9	11	9	4	
L10586	SLCVSB1404(C3)	1/29/91	Method Blank	ND	ND	ND	ND										
L10587	SLCVSB1407(C3)		LCS 1	100	104	99	101	100	105	103	104	91	97	96	101	99	
L10588	SLCVSD1434(C3)		LCS 2	96	102	95	96	96	109	98	98	92	91	92	98	101	
L10589	SLCVSD1435(C3)		RPD	4	2	4	5	4	4	5	6	1	6	4	3	2	
L10600	SLCVDI TOT	1/30/91	Method Blank	ND	ANALYZED BY GFAA METHOD												
L10602	SLCVIW TOT		LCS 1	100	102	97	89	100	102	99	101	100					
L10613	SLCVSW1451 TOT		LCS 2	100	103	97	89	99	103	99	101	100					
L10615	SLCVSW1452 TOT		RPD	0	1	0	0	1	1	0	0	0					
L11096	SLCVSW1453 TOT																
L11098	SLCVSW1453 D TOT																
L11100	SLCVSW1453 RB TOT																
L10619	SLCVSW1454 TOT																
L10617	SLCVSW1455 TOT																
L10601	SLCVDI DIS	1/30/91	Method Blank	ND	ANALYZED BY GFAA METHOD												
L10603	SLCVIW DIS		LCS 1	100	100	94	97	96	99	97	96	97					
L10614	SLCVSW1451 DIS		LCS 2	97	101	96	97	97	100	99	97	98					
L10616	SLCVSW1452 DIS		LCS3	99	101	96	100	97	99	98	97	98					
L11097	SLCVSW1453 DIS		RPD	2	0	0	3	0	1	1	0	0					
L11099	SLCVSW1453 D DIS																
L11101	SLCVSW1453 RB DIS																
L10620	SLCVSW1454 DIS																
L10618	SLCVSW1455 DIS																

**TABLE C - 4
MS/MSD, LCS AND METHOD BLANK DATA FOR
ICAP METALS ANALYTICAL BATCHES**

Lab No.	Sample ID	Date Analyzed	QC Data	Ag	Ba	Be	Cd	Cr	Cu	Ni	Zn	Sb	As	Se	Pb	Tl	
L11583	SLCVMW1404 TOT	2/5/91	Method Blank	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
L11588	SLCVMW1402 TOT		LCS 1	97	101	96	100	99	102	100	101	94	MW SAMPLES ANALYZED BY GFAA METHOD, SEE BELOW FOR TANK SAMPLES				
L11590	SLCVMW1403 TOT		LCS 2	96	100	95	101	97	101	100	100	93					
L11594	SLCVMW1401 TOT		RPD	1	1	1	1	2	1	0	1	1					
L11596	SLCVMW1401 D TOT																
L11563	SATGTK1505(AQ) R																
L11564	SATGTK1505(AQ) D R																
L11570	SATGTK1505(AQ)																
L11571	SATGTK1505(AQ) D																
L11563	SATGTK1505(AQ) R	2/5/91	Method Blank	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.10	NA	<0.10	NA	
L11564	SATGTK1505(AQ) D R		LCS 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	99	NA	100	NA	
L11570	SATGTK1505(AQ)		LCS 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	100	NA	95	NA	
L11571	SATGTK1505(AQ) D		RPD	NA	NA	NA	NA	NA	NA	NA	NA	NA	1	NA	5	NA	
L11584	SLCVMW1404 DIS	2/5/91	Method Blank	ND	ND	ND	ND	ND	ND	ND	ND	ND	ANALYZED BY GFAA METHOD				
L11589	SLCVMW1402 DIS		LCS 1	96	103	97	98	99	102	100	100	99					
L11591	SLCVMW1403 DIS		LCS 2	97	104	98	99	99	103	101	100	100					
L11595	SLCVMW1401 DIS		RPD	1	1	1	1	0	1	1	0	1					
L11597	SLCVMW1401 D DIS																
L11066	SLCVSB1406(C3)	2/1/91	Method Blank	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
L11067	SLCVSB1401(C3)		LCS 1	91	99	96	92	95	98	94	94	94	89	89	91	90	
L11076	SLCVSD1436(C3)		LCS 2	89	100	96	92	94	96	94	95	92	86	90	91	84	
L11077	SLCVSD1436(C3) D		RPD	2	1	0	0	1	2	0	1	2	3	1	0	7	
L11078	SLCVSB1405(C3)																
L11079	SLCVSB1408(C3)																
L11080	SLCVSB1403(C3)																
L11081	SLCVSB1402(10)																

**TABLE C - 4
MS/MSD, LCS AND METHOD BLANK DATA FOR
ICAP METALS ANALYTICAL BATCHES**

Lab No.	Sample ID	Date Analyzed	QC Data	Ag	Ba	Be	Cd	Cr	Cu	Ni	Zn	Sb	As	Se	Pb	Tl
L11568	SLCVMW1401 RB TOT	2/1/91	Method Blank	ND												
L11577	SLCVMW1401 MS TOT		LCS 1	101	102	96	99	98	104	98	103	101				
L11579	SLCVMW1401 MSD TOT		LCS 2	99	101	96	100	98	102	100	100	100				
L11594	SLCVMW1401 TOT		RPD	2	1	0	1	0	2	2	3	1				
			MS	96	107	97	97	94	101	99	93	84				
			MSD	97	104	96	97	93	102	99	97	81				
			RPD	1	3	1	0	1	1	0	4	4				
L11569	SLCVMW1401 RB DIS	2/1/91	Method Blank	ND												
L11578	SLCVMW1401 MS DIS		LCS 1	97	100	95	98	97	101	98	98	99				
L11580	SLCVMW1401 MSD DIS		LCS 2	97	101	96	98	98	102	100	98	97				
L11595	SLCVMW1401 DIS		RPD	0	1	1	0	1	1	2	0	2				
			LCS 2	97	101	96	98	98	102	100	98	97				
			LCS 3	97	100	95	96	97	101	98	98	97				
			RPD	0	1	1	2	1	1	2	0	0				
			MS	98	106	102	105	101	106	103	106	103				
			MSD	102	110	105	109	104	110	106	109	107				
			RPD	4	4	3	4	3	4	3	3	4				

TABLE C - 5
MS/MSD, LCS AND METHOD BLANK DATA FOR
MERCURY ANALYTICAL BATCHES

Lab ID	Sample ID	Date Analyzed	Method Blank	Percent Recovery			MS	MSD	RPD
				LCS 1	LCS 2	RPD			
L10600	SLCVDI TOT	1/29/91	ND	90	90	0			
L10601	SLCVDI DIS	1/29/91							
L10602	SLCVIW TOT	1/29/91							
L10603	SLCVIW DIS	1/29/91							
L10613	SLCVSW1451 TOT	2/4/91	ND	92	95	3			
L10614	SLCVSW1451 DIS	2/4/91							
L10615	SLCVSW1452 TOT	2/4/91							
L10616	SLCVSW1452 DIS	2/4/91							
L10617	SLCVSW1455 TOT	2/4/91							
L11096	SLCVSW1453 TOT	2/4/91	ND	95	92	3			
L11097	SLCVSW1453 DIS	2/4/91							
L11098	SLCVSW1453 D TOT	2/4/91							
L11099	SLCVSW1453 D DIS	2/4/91							
L11100	SLCVSW1453 RB TOT	2/4/91							
L10619	SLCVSW1454 TOT	2/4/91							
L10620	SLCVSW1454 DIS	2/4/91							
L10618	SLCVSW1455 DIS	2/4/91							
L11101	SLCVSW1453 RB DIS	2/4/91	ND	92	88	4			
L11577	SLVCMW1401 MS TOT	2/6/91	ND	88	89	1	95 (TOT)	98 (TOT)	3
L11578	SLVCMW1401 MS DIS	2/6/91					84 (DIS)	83 (DIS)	1
L11579	SLVCMW1401 MSD TOT	2/6/91							
L11580	SLVCMW1401 MSD DIS	2/6/91							
L11594	SLVCMW1401 TOT	2/6/91	ND	89	87	2			
L11595	SLVCMW1401 DIS	2/6/91							
L10312	SLCVSD1431(C3)	2/8/91	ND	112	118	5			
L10313	SLCVSD1432(C3)	2/8/91	ND	118	107	10			
L10314	SLCVSD1433(C3)	2/8/91							
L10586	SLCVSB1404(C3)	2/8/91	ND	107	104	3			
L10587	SLCVSB1407(C3)	2/8/91							
L10588	SLCVSD1434(C3)	2/8/91							
L10589	SLCVSD1435(C3)	2/8/91							

**TABLE C - 5
MS/MSD, LCS AND METHOD BLANK DATA FOR
MERCURY ANALYTICAL BATCHES**

Lab ID	Sample ID	Date Analyzed	Method Blank	Percent Recovery			MS	MSD	RPD
				LCS 1	LCS 2	RPD			
L11583	SLCVMW1404 TOT	2/11/91	ND	91	90	1			
L11584	SLCVMW1404 DIS	2/11/91							
L11588	SLCVMW1402 TOT	2/11/91							
L11589	SLCVMW1402 DIS	2/11/91							
L11590	SLCVMW1403 TOT	2/11/91							
L11591	SLCVMW1403 DIS	2/11/91							
L11066	SLCVSB1406(C3)	2/12/91	ND	122	107	13			
L11067	SLCVSB1401(C3)	2/12/91							
L11076	SLCVSD1436(C3)	2/12/91							
L11077	SLCVSD1436(C3) D	2/12/91							
L11078	SLCVSD1405(C3)								
L11079	SLCVSB1408(C3)								
L11080	SLCVSB1403(C3)								
L11081	SLCVSB1402(10)								
L11568	SLCVMW1401 RB TOT	2/15/91	ND	92	93	1			
L11569	SLCVMW1401 RB DIS	2/15/91							
L11577	SLCVMW1401 MS TOT	2/15/91							
L11578	SLCVMW1401 MS DIS	2/15/91							
L11579	SLCVMW1401 MSD TOT	2/15/91							
L11580	SLCVMW1401 MSD DIS	2/15/91							
L11594	SLCVMW1401 TOT	2/15/91							
L11595	SLCVMW1401 DIS	2/15/91							
L11596	SLCVMW1401 D TOT	2/15/91							
L11597	SLCVMW1401 D DIS	2/15/91							

**TABLE C - 6
MS/MSD, LCS AND METHOD BLANK DATA FOR
GFAA METALS ANALYTICAL BATCHES**

Date Analyzed	LABNO	SAMPLE ID	QC Type	Arsenic	Lead	Selenium	Thallium
2/4/91	L10613	SLCVSW1451 TOT	Method Blank (mg/l)	<0.005	<0.002	<0.005	<0.010
2/4/91	L10614	SLCVSW1451 DIS	LCS 1	100	100	93	100
2/4/91	L10615	SLCVSW1452 TOT	LCS 2	98	100	98	110
2/4/91	L10616	SLCVSW1452 DIS	RPD	2	0	5	10
2/4/91	L10617	SLCVSW1455 TOT					
2/4/91	L10618	SLCVSW1455 DIS	Dig LCS 3	93	95	78	90
2/4/91	L10619	SLCVSW1454 TOT					
2/4/91	L10620	SLCVSW1454 DIS					
2/5/91	L10600	SLCVDI TOT	Method Blank (mg/l)	<0.005		<0.005	
2/5/91	L10601	SLCVDI DIS	LCS 1	100		103	
2/5/91	L10602	SLCVTW TOT	LCS 2	90		103	
2/5/91	L10603	SLCVTW DIS	RPD	11		0	
			Dig LCS 3	90		100	
2/6/91	L10600	SLCVDI TOT	Method Blank (mg/l)		<0.002		<0.010
2/6/91	L10601	SLCVDI DIS	LCS 1		98		93
2/6/91	L10602	SLCVTW TOT	LCS 3		98		95
2/6/91	L10603	SLCVTW DIS	RPD		0		2
2/6/91	L11096	SLCVSW1453 TOT					
2/6/91	L11097	SLCVSW1453 DIS	Dig LCS 2		100		108
2/6/91	L11098	SLCVSW1453 D TOT					
2/6/91	L11099	SLCVSW1453 D DIS					
2/6/91	L11100	SLCVSW1453 RB TOT					
2/6/91	L11101	SLCVSW1453 RB DIS					
2/7/91	L11096	SLCVSW1453 TOT	Method Blank (mg/l)			<0.005	
2/7/91	L11097	SLCVSW1453 DIS	LCS 2			95	
2/7/91	L11098	SLCVSW1453 D TOT	LCS 3			95	
2/7/91	L11099	SLCVSW1453 D DIS	RPD			0	
2/7/91	L11100	SLCVSW1453 RB TOT					
2/7/91	L11101	SLCVSW1453 RB DIS	Dig LCS 1			103	

**TABLE C - 6
MS/MSD, LCS AND METHOD BLANK DATA FOR
GFAA METALS ANALYTICAL BATCHES**

Date Analyzed	LABNO	SAMPLE ID	QC Type	Arsenic	Lead	Selenium	Thallium
2/7/91	L11096	SLCVSW1453 TOT	Method Blank (mg/l)	<0.005			
2/7/91	L11097	SLCVSW1453 DIS	LCS 2	100			
			LCS 3	98			
			RPD	2			
2/7/91	L11098	SLCVSW1453 D TOT	Method Blank (mg/l)	<0.005			
2/7/91	L11099	SLCVSW1453 D DIS	LCS 3	98			
2/7/91	L11100	SLCVSW1453 RB TOT	LCS 4	95			
2/7/91	L11101	SLCVSW1453 RB DIS	RPD	3			
2/11/91	L11568	SLCVMW1401 RB TOT	Method Blank (mg/l)			<0.005	
2/11/91	L11569	SLCVMW1401 RB DIS	LCS 3			100	
			LCS 4			95	
			RPD			5	
2/11/91	L11100	SLCVSW1453 RB TOT	Method Blank (mg/l)		<0.002		
			LCS 1		105		
			LCS 2		103		
			RPD		2		
2/12/91	L11568	SLCVMW1401 RB TOT	Method Blank (mg/l)				<0.010
2/12/91	L11569	SLCVMW1401 RB DIS	LCS 1				98
			LCS 2				100
			RPD				2
2/12/91	L11594	SLCVMW1401 TOT	Method Blank (mg/l)	<0.005	<0.002	<0.005	<0.010
2/12/91	L11577	SLCVMW1401 MS TOT	LCS 2	103	100	88	103
2/12/91	L11578	SLCVMW1401 MS DIS	LCS 3	98	93	98	93
2/12/91	L11579	SLCVMW1401 MSD TOT	RPD	5	7	11	10
2/12/91	L11580	SLCVMW1401 MSD DIS					
2/12/91	L11595	SLCVMW1401 DIS	MS TOT	90	100	90	95
2/12/91	L11583	SLCVMW1404 TOT	MSD TOT	93	103	88	95
2/12/91	L11584	SLCVMW1404 DIS	RPD	3	3	2	0
2/12/91	L11588	SLCVMW1402 TOT					
2/12/91	L11589	SLCVMW1402 DIS	MS DIS	93	98	88	80
2/12/91	L11590	SLCVMW1403 TOT	MSD DIS	95	100	85	83
2/12/91	L11591	SLCVMW1403 DIS	RPD	2	2	3	4
2/12/91	L11596	SLCVMW1401 D TOT					
			Dig LCS 1	95	103	93	100

**TABLE C - 6
MS/MSD, LCS AND METHOD BLANK DATA FOR
GFAA METALS ANALYTICAL BATCHES**

Date Analyzed	LABNO	SAMPLE ID	QC Type	Arsenic	Lead	Selenium	Thallium
2/12/91	L11597	SLCVMW1401 D DIS	Method Blank (mg/l)	<0.005	<0.002	<0.005	<0.010
			LCS 3	98	93	98	93
			LCS 4	90	103	100	103
			RPD	9	10	2	10
2/13/91	L11568	SLCVMW1401 RB TOT	Method Blank (mg/l)	<0.005			
2/13/91	L11569	SLCVMW1401 RB DIS	LCS 3	90			
			LCS 4	90			
			RPD	0			
2/14/91	L11568	SLCVMW1401 RB TOT	Method Blank (mg/l)		<0.002		
2/14/91	L11569	SLCVMW1401 RB DIS	LCS 1		98		
			LCS 2		98		
			RPD		0		

**TABLE C - 7
MS/MSD, LCS AND METHOD BLANK DATA FOR
TFH-H ANALYTICAL BATCHES**

Lab ID	Sample ID	Date Extracted	Date Analyzed	Method Blank	Percent Recovery			MS	MSD	RPD							
					LCS 1	LCS 2	RPD										
L10788	SLCVSD1431(C3)	1/29/91	1/30/91	<10mg/kg	64		NA	61	59	3							
L10789	SLCVSD1432(C3)	1/29/91	1/30/91														
L10790	SLCVSD1433(C3)	1/29/91	1/30/91														
L10793	SLCVSB1404(4)	1/29/91	1/30/91														
L10794	SLCVSB1407(0)	1/29/91	1/30/91														
L10795	SLCVSD1434(C3)	1/29/91	1/30/91														
L10796	SLCVSD1435(C3)	1/29/91	1/30/91														
L11068	SLCVSB1406(0)	1/29/91	1/30/91														
L11069	SLCVSB1401(0)	1/29/91	1/30/91														
L11070	SLCVSD1436(C3)	1/29/91	1/30/91														
L11073	SLCVSB1403(0) MS	1/29/91	1/30/91														
L11073	SLCVSB1403(0) MSD	1/29/91	1/30/91														
L11070	SLCVSD1436(C3)	1/30/91	1/31/91	<10mg/kg	65	63	2	73	75	3							
L11071	SLCVSD1436(C3) D	1/30/91	1/31/91														
L11072	SLCVSB1408(5)	1/30/91	1/31/91														
L11073	SLCVSB1403(0)	1/30/91	1/31/91														
L11074	SLCVSB1405(0)	1/30/91	1/31/91														
L11075	SLCVSB1402(10)	1/30/91	1/31/91														
L11071	SLCVSD1436(C3) D MS	1/30/91	1/31/91														
L11071	SLCVSD1436(C3) D MSD	1/30/91	1/31/91														
L11181	SLCVSW1451	1/30/91	2/7/91								<0.05mg/l	67	58	14			
L11182	SLCVSW1452	1/30/91	2/7/91														
L11183	SLCVSW1453	1/30/91	2/7/91														
L11184	SLCVSW1453 D	1/30/91	2/7/91														
L11185	SLCVSW1454	1/30/91	2/7/91														
L11186	SLCVSW1455	1/30/91	2/8/91														
L11187	SLCVIW	1/30/91	2/8/91														
L11188	SLCVSW1453 RB	1/30/91	2/8/91														
L11566	SLCVMW1401 RB	2/1/91	2/12/91	<0.05mg/l	67	58	14	52	63	19							
L11572	SLCVMW1401 MS	2/1/91	2/12/91														
L11573	SLCVMW1401 MSD	2/1/91	2/12/91														
L11581	SLCVMW1404	2/1/91	2/12/91														
L11585	SLCVMW1402	2/1/91	2/12/91														
L11586	SLCVMW1403	2/1/91	2/12/91														
L11598	SLCVMW1401	2/1/91	2/12/91														
L11599	SLCVMW1401 D	2/1/91	2/12/91														
L24758	SLCVDI	2/27/91	2/28/91								<0.05mg/l	82	75	9			

**TABLE C - 8
LCS AND METHOD BLANK DATA FOR
TFH-L ANALYTICAL BATCHES**

Lab ID	Sample ID	Date Analyzed	Method Blank	Percent Recovery		
				LCS 1	LCS 2	RPD
L11563	SATGTK1505(AQ) (R)	2/11/91	<0.05 mg/L	127	94	30
L11564	SATGTK1505(AQ) D (R)	2/11/91				
L11570	SATGTK1505(AQ)	2/11/91				
L11571	SATGTK1505(AQ) D	2/11/91				

TABLE C - 9
LCS AND METHOD BLANK DATA FOR
TOX ANALYTICAL BATCHES

Lab ID	Sample ID	Date Analyzed	Water Blank	Carbon Blank	Percent Recovery		RPD
					LCS 1	LCS 2	
L11563	SATGTK1505(AQ) (R)	2/8/91	0.89 mg/l	0.61 mg/l	102	93.2	9
L11564	SATGTK1505(AQ) D (R)	2/8/91					
L11570	SATGTK1505(AQ)	2/12/91	0.49 mg/l	0.47 mg/l	99.4	93.4	6
L11571	SATGTK1505(AQ) D	2/12/91	1 mg/l	0.56 mg/l	109	115	5
L22320	SATGTK1501(PS)	2/13/91	17 mg/kg	NA	105	104	1
L22321	SATGTK1503(PS)	2/13/91					

NA = Not Analyzed

APPENDIX D
SURROGATE SPIKE DATA

**TABLE D-1
SURROGATE SPIKE RESULTS FOR VOC ANALYSES**

Sample ID	Lab No.	4-Bromofluorobenzene		1,2-Dichloroethane-d4		Toluene-d8	
		Recovery (%)	QC Limits (%)	Recovery (%)	QC Limits (%)	Recovery (%)	QC Limits (%)
SLCVSB1401(0)	L11069	102	74-121	112	70-121	116	81-117
SLCVSB1402(10)	L11085	98	74-121	111	70-121	116	81-117
SLCVSB1403(0)	L11084	96	74-121	113	70-121	113	81-117
SLCVSB1404(C3)	L10586	97	74-121	114	70-121	115	81-117
SLCVSB1405(0)	L11083	95	74-121	108	70-121	112	81-117
SLCVSB1406(0)	L11068	100	74-121	110	70-121	116	81-117
SLCVSB1407(C3)	L10587	98	74-121	111	70-121	115	81-117
SLCVSB1407(C3) MS	L10587	118	74-121	106	70-121	100	81-117
SLCVSB1407(C3) MSD	L10587	120	74-121	110	70-121	102	81-117
SLCVSB1408(5)	L11082	97	74-121	110	70-121	113	81-117
SLCVMW1401	L11574	100	86-115	95	76-114	100	88-110
SLCVMW1401 D	L11575	100	86-115	95	76-114	100	88-110
SLCVMW1401 RB	L11566	100	86-115	91	76-114	98	88-110
SLCVMW1401 TB	L11576	99	86-115	93	76-114	99	88-110
SLCVMW1401 MS	L11572	104	86-115	91	76-114	98	88-110
SLCVMW1401 MSD	L11573	101	86-115	92	76-114	99	88-110
SLCVMW1402	L11585	98	86-115	92	76-114	97	88-110
SLCVMW1403	L11586	103	86-115	95	76-114	100	88-110
SLCVMW1403 TB	L11587	101	86-115	84	76-114	95	88-110
SLCVMW1404	L11581	99	86-115	90	76-114	98	88-110
SLCVMW1404 TB	L11582	104	86-115	84	76-114	96	88-110
SLCVDI	L10597	98	86-115	97	76-114	98	88-110
SLCVIW	L10598	97	86-115	93	76-114	97	88-110

TABLE D-2
SURROGATE SPIKE RESULTS FOR BNA ANALYSES

Sample ID	Lab No.	Nitrobenzene-d5		2-Fluorobiphenyl		Terphenyl-d14		2-Fluorophenol		Phenol-d5		2,4,6-Tribromophenol	
		Recovery (%)	QC Limits (%)	Recovery (%)	QC Limits (%)	Recovery (%)	QC Limits (%)	Recovery (%)	QC Limits (%)	Recovery (%)	QC Limits (%)	Recovery (%)	QC Limits (%)
SLCVSB1401(C3)	L11067	101	23-120	91	30-115	94	18-137	89	25-121	89	24-113	69	19-122
SLCVSB1402(10)	L11081	64	23-120	66	30-115	88	18-137	70	25-121	62	24-113	63	19-122
SLCVSB1403(C3)	L11080	71	23-120	64	30-115	95	18-137	74	25-121	67	24-113	61	19-122
SLCVSB1404(C3)	L10586	82	23-120	77	30-115	100	18-137	72	25-121	69	24-113	68	19-122
SLCVSB1404(C3) MS	L10586	110	23-120	92	30-115	91	18-137	79	25-121	78	24-113	79	19-122
SLCVSB1404(C3) MSD	L10586	99	23-120	87	30-115	88	18-137	77	25-121	75	24-113	76	19-122
SLCVSB1405(C3)	L11078	58	23-120	59	30-115	79	18-137	62	25-121	60	24-113	63	19-122
SLCVSB1406(C3)	L11066	93	23-120	87	30-115	79	18-137	90	25-121	83	24-113	69	19-122
SLCVSB1407(C3)	L10587	78	23-120	74	30-115	91	18-137	68	25-121	68	24-113	70	19-122
SLCVSB1408(C3)	L11079	82	23-120	71	30-115	93	18-137	87	25-121	81	24-113	60	19-122
SLCVSD1431(C3)	L10312	79	23-120	79	30-115	84	18-137	76	25-121	71	24-113	76	19-122
SLCVSD1432(C3)	L10313	98	23-120	85	30-115	91	18-137	86	25-121	86	24-113	86	19-122
SLCVSD1433(C3)	L10314	75	23-120	73	30-115	81	18-137	69	25-121	65	24-113	66	19-122
SDCVSD1434(C3)	L10588	87	23-120	81	30-115	87	18-137	77	25-121	77	24-113	66	19-122
SDCVSD1435(C3)	L10589	88	23-120	82	30-115	85	18-137	77	25-121	76	24-113	65	19-122
SLCVSD1436(C3)	L11076	94	23-120	84	30-115	87	18-137	80	25-121	80	24-113	72	19-122
SLCVSD1436(C3) D	L11077	93	23-120	76	30-115	95	18-137	90	25-121	85	24-113	74	19-122
SLCVSD1436(C3) D MS	L11077	84	23-120	75	30-115	78	18-137	71	25-121	70	24-113	63	19-122
SLCVSD1436(C3) D MSD	L11077	77	23-120	71	30-115	73	18-137	69	25-121	64	24-113	60	19-122
SLCVMW1401	L11598	92	35-114	86	43-116	19	33-141	99	21-100	93	10-94	61	10-123
SLCVMW1401	L35931	71	35-114	57	43-116	14	33-141	80	21-100	74	10-94	61	10-123
SLCVMW1401D	L11599	104	35-114	102	43-116	30	33-141	114	21-100	107	10-94	74	10-123
SLCVMW1401D	L35932	78	35-114	64	43-116	16	33-141	86	21-100	85	10-94	62	10-123
SLCVMW1401 RB	L11566	71	35-114	73	43-116	96	33-141	115	21-100	106	10-94	86	10-123
SLCVMW1401 RB	L35930	88	35-114	92	43-116	66	33-141	43	21-100	39	10-94	70	10-123
SLCVMW1401 MS	L11572	79	35-114	79	43-116	48	33-141	83	21-100	82	10-94	48	10-123
SLCVMW1401 MSD	L11573	111	35-114	105	43-116	59	33-141	103	21-100	96	10-94	78	10-123
SLCVMW1402	L11585	80	35-114	81	43-116	60	33-141	100	21-100	93	10-94	78	10-123
SLCVMW1403	L11586	62	35-114	67	43-116	35	33-141	99	21-100	98	10-94	65	10-123
SLCVMW1403	L35934	67	35-114	69	43-116	18	33-141	1.8	21-100	3.9	10-94	0	10-123
SLCVMW1404	L11581	94	35-114	89	43-116	38	33-141	103	21-100	101	10-94	69	10-123
SLCVMW1404	L35933	80	35-114	17	43-116	17	33-141	74	21-100	69	10-94	76	10-123
SLCVTW	L10598	126	35-114	108	43-116	102	33-141	102	21-100	96	10-94	85	10-123
SLCVTW	L35577	88	35-114	76	43-116	74	33-141	102	21-100	102	10-94	72	10-123
SLCVDI	L24758	38	35-114	54	43-116	72	33-141	53	21-100	72	10-94	30	10-123

**TABLE D-3
SURROGATE SPIKE RESULTS FOR PESTICIDE/PCB ANALYSES**

Sample ID	Lab No.	Dibutyl Chlorendate	
		Recovery (%)	QC Limits (%)
SLCVSB1401(C3)	L11067	104	24-150
SLCVSB1402(10)	L11081	127	24-150
SLCVSB1403(C3)	L11080	77	24-150
SLCVSB1404(C3)	L10586	94	24-150
SLCVSB1405(C3)	L11078	114	24-150
SLCVSB1406(C3)	L11066	110	24-150
SLCVSB1407(C3)	L10587	73	24-150
SLCVSB1408(C3)	L11079	77	24-150
SLCVSD1431(C3)	L10312	128	24-150
SLCVSD1432(C3)	L10313	80	24-150
SLCVSD1433(C3)	L10314	155	24-150
SDCVSD1434(C3)	L10588	160	24-150
SDCVSD1435(C3)	L10589	69	24-150
SLCVSD1436(C3)	L11076	146	24-150
SLCVSD1436(C3) D	L11077	108	24-150
SLCVSD1436(C3) D MS	L11077	156	24-150
SLCVSD1436(C3) D MSD	L11077	159	24-150
SLCVSD1436(C3) D MS (a)	L11077	68	24-150
SLCVSD1436(C3) D MSD (a)	L11077	78	24-150
SATGTK1505 AQ	L11563	31	24-150
SATGTK1505 AQ	L11570	92	24-150
SATGTK1505 AQ D	L11564	41	24-150
SATGTK1505 AQ D	L11571	78	24-150
SLCVDI	L24758	146	24-150

(a) Reanalyzed because initial runs failed internal QC standards.

APPENDIX E
HOLDING TIME SUMMARIES

TABLE E-1
SUMMARY OF VOC HOLDING TIMES

Sample ID	Lab ID	COC No.	Date Sampled	Date Analyzed	Days to Analysis
SLCVSB1401(0)	L11069	1033	1/25/91	2/7/91	13
SLCVSB1402(10)	L11085	1035	1/26/91	2/7/91	12
SLCVSB1403(0)	L11084	1035	1/26/91	2/7/91	12
SLCVSB1404(C3)	L10586	1027	1/24/91	2/7/91	14
SLCVSB1405(0)	L11083	1035	1/26/91	2/7/91	12
SLCVSB1406(0)	L11068	1033	1/25/91	2/7/91	13
SLCVSB1407(C3)	L10587	1027	1/24/91	2/7/91	14
SLCVSB1407(C3) MS	L10587	1027	1/24/91	2/7/91	14
SLCVSB1407(C3) MSD	L10587	1027	1/24/91	2/7/91	14
SLCVSB1408(5)	L11082	1035	1/26/91	2/7/91	12
SLCVSW1453TB	L11095	1031	1/25/91	2/6/91	12
SLCVMW1401	L11574	1056	1/29/91	2/9/91	11
SLCVMW1401 D	L11575	1056	1/29/91	2/9/91	11
SLCVMW1401 RB	L11566	1058	1/29/91	2/9/91	11
SLCVMW1401 TB	L11576	1056	1/29/91	2/9/91	11
SLCVMW1401 MS	L11572	1056	1/29/91	2/9/91	11
SLCVMW1401 MSD	L11573	1056	1/29/91	2/9/91	11
SLCVMW1402	L11585	1042	1/30/91	2/9/91	10
SLCVMW1403	L11586	1042	1/30/91	2/11/91	12
SLCVMW1403 TB	L11587	1042	1/30/91	2/9/91	10
SLCVMW1404	L11581	1043	1/30/91	2/9/91	10
SLCVMW1404 TB	L11582	1043	1/30/91	2/9/91	10
SLCVDI	L10597	1028	1/24/91	2/7/91	14
SLCVIW	L10598	1028	1/24/91	2/7/91	14

TABLE E-2
SUMMARY OF BNA HOLDING TIMES

Sample ID	Lab ID	COC No.	Date Sampled	Date Extracted	Days to Extraction	Date Analyzed	Days to Analysis
SLCVSB1401(C3)	L11067	1033	1/25/91	1/29/91	4	2/18/91	20
SLCVSB1402(10)	L11081	1036	1/26/91	1/30/91	4	2/20/91	21
SLCVSB1403(C3)	L11080	1035	1/26/91	1/30/91	4	2/20/91	21
SLCVSB1404(C3)	L10586	1027	1/24/91	1/29/91	5	2/18/91	20
MS	L10586	1027	1/24/91	1/29/91	5	2/18/91	20
MSD	L10587	1027	1/24/91	1/29/91	5	2/18/91	20
SLCVSB1405(C3)	L11078	1035	1/26/91	1/30/91	4	2/20/91	21
SLCVSB1406(C3)	L11066	1033	1/25/91	1/29/91	4	2/18/91	20
SLCVSB1407(C3)	L10587	1027	1/24/91	1/29/91	5	2/18/91	20
SLCVSB1408(C3)	L11079	1035	1/26/91	1/30/91	4	2/20/91	21
SLCVSD1431(C3)	L10312	1026	1/23/91	1/29/91	6	2/18/91	20
SLCVSD1432(C3)	L10313	1026	1/23/91	1/29/91	6	2/18/91	20
SLCVSD1433(C3)	L10314	1026	1/23/91	1/29/91	6	2/18/91	20
SDCVSD1434(C3)	L10588	1027	1/24/91	1/29/91	5	2/18/91	20
SDCVSD1435(C3)	L10589	1027	1/24/91	1/29/91	5	2/18/91	20
SLCVSD1436(C3)	L11076	1035	1/26/91	1/29/91	3	2/18/91	20
SLCVSD1436(C3) D	L11077	1035	1/26/91	1/30/91	4	2/20/91	21
MS	L11077	1035	1/26/91	1/30/91	4	2/20/91	21
MSD	L11078	1035	1/26/91	1/30/91	4	2/20/91	21
SLCVMW1401	L11598	1053	1/29/91	2/5/91	7	2/22/91	17
SLCVMW1401 (a)	L35931	1053	1/29/91	3/4/91	34	3/20/91	16
SLCVMW1401 D	L11599	1053	1/29/91	2/5/91	7	2/22/91	17
SLCVMW1401 D (a)	L35932	1053	1/29/91	3/4/91	34	3/20/91	16
SLCVMW1401 RB	L11566	1058	1/29/91	2/5/91	7	2/22/91	17
SLCVMW1401 RB (a)	L35930	1058	1/29/91	3/11/91	41	3/21/91	10
SLCVMW1401 MS	L11572	1056	1/29/91	2/5/91	7	2/22/91	17
SLCVMW1401 MSD	L11573	1056	1/29/91	2/5/91	7	2/22/91	17
SLCVMW1402	L11585	1042	1/30/91	2/5/91	6	2/22/91	17
SLCVMW1403	L11586	1042	1/30/91	2/5/91	6	2/22/91	17
SLCVMW1403 (a)	L35934	1042	1/30/91	3/11/91	40	3/22/91	11
SLCVMW1404	L11581	1043	1/30/91	2/5/91	6	2/22/91	17
SLCVMW1404 (a)	L35933	1043	1/30/91	3/11/91	40	3/21/91	10
SLCVIW	L10598	1028	1/24/91	1/28/91	4	2/23/91	26
SLCVIW (a)	L35577	1028	1/24/91	3/4/91	39	3/20/91	16
SLCVDI	L24758	764	2/21/91	2/25/91	4	2/28/91	3

(a) Samples reextracted and analyzed due to poor surrogate spike recoveries.

TABLE E-3
SUMMARY OF PESTICIDE/PCB HOLDING TIMES

Sample ID	Lab ID	COC No.	Date Sampled	Date Extracted	Days to Extraction	Date Analyzed	Days to Analysis
SLCVSB1401(C3)	L11067	1033	1/25/91	1/28/91	3	2/6/91	9
SLCVSB1402(10)	L11081	1036	1/26/91	1/31/91	5	2/6/91	6
SLCVSB1402(10) (a)	L11081	1036	1/26/91	1/31/91	5	2/6/91	6
SLCVSB1403(C3)	L11080	1035	1/26/91	1/31/91	5	2/6/91	6
SLCVSB1403(C3) (a)	L11080	1035	1/26/91	1/31/91	5	2/6/91	6
SLCVSB1404(C3)	L10586	1027	1/24/91	1/28/91	4	2/6/91	9
SLCVSB1405(C3)	L11078	1035	1/26/91	1/31/91	5	2/6/91	6
SLCVSB1406(C3)	L11066	1033	1/25/91	1/28/91	3	2/6/91	9
SLCVSB1407(C3)	L10587	1027	1/24/91	1/28/91	4	2/6/91	9
SLCVSB1408(C3)	L11079	1035	1/26/91	1/31/91	5	2/6/91	6
SLCVSD1431(C3)	L10312	1026	1/23/91	1/28/91	5	2/6/91	9
SLCVSD1431(C3) MS	L10312	1026	1/23/91	1/28/91	5	2/6/91	9
SLCVSD1431(C3) MSD	L10312	1026	1/23/91	1/28/91	5	2/6/91	9
SLCVSD1432(C3)	L10313	1026	1/23/91	1/28/91	5	2/6/91	9
SLCVSD1433(C3)	L10314	1026	1/23/91	1/28/91	5	2/6/91	9
SDCVSD1434(C3)	L10588	1027	1/24/91	1/28/91	4	2/6/91	9
SDCVSD1435(C3)	L10589	1027	1/24/91	1/28/91	4	2/6/91	9
SLCVSD1436(C3)	L11076	1035	1/26/91	1/28/91	2	2/6/91	9
SLCVSD1436(C3) D	L11077	1035	1/26/91	1/31/91	5	2/6/91	6
SLCVSD1436(C3) D MS	L11077	1035	1/26/91	1/31/91	5	2/6/91	6
SLCVSD1436(C3) D MSD	L11077	1035	1/26/91	1/31/91	5	2/6/91	6
??SLCVSD1436(C3) MSD	L11077	1035	1/26/91	1/31/91	5	2/6/91	6
SATGTK1501(PS) (a)	L22320	(b)	1/28/91	2/6/91	9	2/7/91	1
SATGTK1503(PS) (a)	L22321	(b)	1/28/91	2/6/91	9	2/7/91	1
SATGTK1505 AQ	L11570	1040	1/28/91	2/1/91	4	2/13/91	12
SATGTK1505 AQ R	L11563	1044	1/30/91	2/1/91	2	2/13/91	12
SATGTK1505 AQ D	L11571	1040	1/28/91	2/1/91	4	2/13/91	12
SATGTK1505 AQ D R	L11564	1044	1/30/91	2/1/91	2	2/13/91	12
SLCVDI	L24758	764	2/21/91	2/26/91	5	2/28/91	2

(a) Sample analyzed for PCBs.

(b) COC was not received by the laboratory.

TABLE E-4
SUMMARY OF TOTAL METAL HOLDING TIMES

Sample ID	Lab ID	COC No.	Date Sampled	Date Analyzed	Days to Analysis
SLCVSB1401(C3)	L11067	1033	1/25/91	2/7/91	13
SLCVSB1402(10)	L11081	1036	1/26/91	2/7/91	12
SLCVSB1403(C3)	L11080	1035	1/26/91	2/7/91	12
SLCVSB1404(C3)	L10586	1027	1/24/91	1/29/91	5
SLCVSB1405(C3)	L11078	1035	1/26/91	2/7/91	12
SLCVSB1406(C3)	L11066	1033	1/25/91	2/7/91	13
SLCVSB1407(C3)	L10587	1027	1/24/91	1/29/91	5
SLCVSB1408(C3)	L11079	1035	1/26/91	2/7/91	12
SLCVSD1431(C3)	L10312	1026	1/23/91	1/29/91	6
SLCVSD1432(C3)	L10313	1026	1/23/91	1/29/91	6
SLCVSD1433(C3)	L10314	1026	1/23/91	1/29/91	6
SDCVSD1434(C3)	L10588	1027	1/24/91	1/29/91	5
SDCVSD1435(C3)	L10589	1027	1/24/91	1/29/91	5
SLCVSD1436(C3)	L11076	1035	1/26/91	2/7/91	12
SLCVSD1436(C3) D	L11077	1035	1/26/91	2/7/91	12
SLCVSW1451	L10613	1032	1/24/91	1/30/91	6
SLCVSW1452	L10615	1032	1/24/91	1/30/91	6
SLCVSW1453	L11096	1031	1/25/91	1/30/91	5
SLCVSW1453 D	L11098	1031	1/25/91	1/30/91	5
SLCVSW1453 RB	L11100	1031	1/25/91	1/30/91	5
SLCVSW1454	L10619	1032	1/24/91	1/30/91	6
SLCVSW1455	L10617	1032	1/24/91	1/30/91	6
SLCVMW1401	L11594	1053	1/29/91	2/5/91	7
SLCVMW1401 D	L11596	1053	1/29/91	2/5/91	7
SLCVMW1401 RB	L11568	1058	1/29/91	2/7/91	9
SLCVMW1401 MS	L11577	1056	1/29/91	2/15/91	17
SLCVMW1401 MSD	L11579	1056	1/29/91	2/15/91	17
SLCVMW1402	L11588	1042	1/30/91	2/5/91	6
SLCVMW1403	L11590	1042	1/30/91	2/5/91	6
SLCVMW1404	L11583	1043	1/30/91	2/5/91	6
SLCVDI	L10600	1028	1/24/91	1/30/91	6
SLCVIW	L10602	1028	1/24/91	1/30/91	6

(a) Date represents final date for ICAP, GFAA, and cold vapor method analyses.

**TABLE E-5
SUMMARY OF DISSOLVED METAL HOLDING TIMES**

Sample ID	Lab ID	COC No.	Date Sampled	Date Analyzed (a)	Days to Analysis
SLCVSW1451	L10614	1032	1/24/91	1/30/91	6
SLCVSW1452	L10616	1032	1/24/91	1/30/91	6
SLCVSW1453	L11097	1031	1/25/91	1/30/91	5
SLCVSW1453 D	L11099	1031	1/25/91	1/30/91	5
SLCVSW1453 RB	L11101	1031	1/25/91	1/30/91	5
SLCVSW1454	L10620	1032	1/24/91	1/30/91	6
SLCVSW1455	L10618	1032	1/24/91	1/30/91	6
SLCVMW1401	L11595	1053	1/29/91	2/5/91	7
SLCVMW1401 D	L11597	1053	1/29/91	2/5/91	7
SLCVMW1401 RB	L11569	1058	1/29/91	2/7/91	9
SLCVMW1401 MS	L11578	1056	1/29/91	2/15/91	17
SLCVMW1401 MSD	L11580	1056	1/29/91	2/15/91	17
SLCVMW1402	L11589	1042	1/30/91	2/5/91	6
SLCVMW1403	L11591	1042	1/30/91	2/5/91	6
SLCVMW1404	L11584	1043	1/30/91	2/5/91	6
SLCVDI	L10601	1028	1/24/91	1/30/91	6
SLCVIW	L10603	1028	1/24/91	1/30/91	6

(a) Date represents final date for ICAP, GFAA, and cold vapor method analyses.

TABLE E-6
SUMMARY OF SHORT LIST METAL HOLDING TIMES (a)

Sample ID	Lab ID	COC No.	Date Sampled	Date Analyzed	Days to Analysis
SATGTK1501(PS)	L22863	RM1	1/28/91	2/27/91	30
SATGTK1503(PS)	L22864	RM1	1/28/91	2/27/91	30
SATGTK1505 AQ	L11570	1040	1/28/91	2/5/91	8
SATGTK1505 AQ (R)	L11563	1044	1/30/91	2/5/91	6
SATGTK1505 AQ D	L11571	1040	1/28/91	2/5/91	8
SATGTK1505 AQ D (R)	L11564	1044	1/30/91	2/5/91	6

(a) Short list metals include arsenic, cadmium, chromium, and lead.

TABLE E-7
SUMMARY OF TFH-H HOLDING TIMES

Sample ID	Lab ID	COC No.	Date Sampled	Date Extracted	Days to Extraction	Date Analyzed	Days to Analysis
SLCVSB1401(C3)	L11069	1033	1/25/91	1/29/91	4	1/30/91	1
SLCVSB1402(C3)	L11075	1036	1/26/91	1/30/91	4	1/31/91	1
SLCVSB1403(C3)	L11073	1035	1/26/91	1/30/91	4	1/31/91	1
SLCVSB1403(C3) MS	L11073	1035	1/26/91	1/29/91	3	1/30/91	1
SLCVSB1403(C3) MSD	L11073	1035	1/26/91	1/29/91	3	1/30/91	1
SLCVSB1404(C3)	L10793	1027	1/24/91	1/29/91	5	1/30/91	1
SLCVSB1405(C3)	L11074	1035	1/26/91	1/30/91	4	1/31/91	1
SLCVSB1406(C3)	L11068	1033	1/25/91	1/29/91	4	1/30/91	1
SBCVSB1407(C3)	L10794	1027	1/24/91	1/29/91	5	1/30/91	1
SLCVSB1408(C3)	L11072	1035	1/26/91	1/30/91	4	1/31/91	1
SLCVSD1431(C3)	L10788	1026	1/23/91	1/29/91	6	1/30/91	1
SLCVSD1432(C3)	L10789	1026	1/23/91	1/29/91	6	1/30/91	1
SLCVSD1433(C3)	L10790	1026	1/23/91	1/29/91	6	1/30/91	1
SLCVSD1434(C3)	L10795	1027	1/24/91	1/29/91	5	1/30/91	1
SLCVSD1435(C3)	L10796	1027	1/24/91	1/29/91	5	1/30/91	1
SLCVSD1436(C3)	L11070	1035	1/26/91	1/29/91	3	1/30/91	1
SLCVSD1436(C3) D	L11071	1035	1/26/91	1/30/91	4	1/31/91	1
SLCVSD1436(C3) D MS	L11071	1035	1/26/91	1/30/91	4	1/31/91	1
SLCVSD1436(C3) D MSD	L11071	1035	1/26/91	1/30/91	4	1/31/91	1
SLCVSW1451	L11181	636	1/28/91	1/30/91	2	2/7/91	8
SLCVSW1452	L11182	636	1/28/91	1/30/91	2	2/7/91	8
SLCVSW1453	L11183	636	1/28/91	1/30/91	2	2/7/91	8
SLCVSW1453 D	L11184	636	1/28/91	1/30/91	2	2/7/91	8
SLCVSW1453 RB	L11188	636	1/28/91	1/30/91	2	2/8/91	9
SLCVSW1454	L11185	636	1/28/91	1/30/91	2	2/7/91	8
SLCVSW1455	L11186	636	1/28/91	1/30/91	2	2/8/91	9
SLCVMW1401	L11598	1053	1/29/91	2/1/91	3	2/12/91	11
SLCVMW1401 D	L11599	1053	1/29/91	2/1/91	3	2/12/91	11
SLCVMW1401 RB	L11566	1058	1/29/91	2/1/91	3	2/12/91	11
SLCVMW1401 MS	L11572	1056	1/29/91	2/1/91	3	2/12/91	11
SLCVMW1401 MSD	L11573	1056	1/29/91	2/1/91	3	2/12/91	11
SLCVMW1402	L11585	1042	1/30/91	2/1/91	2	2/12/91	11
SLCVMW1403	L11586	1042	1/30/91	2/1/91	2	2/12/91	11
SLCVMW1404	L11581	1043	1/30/91	2/1/91	2	2/12/91	11
SLCVDI	L24758	764	2/21/91	2/27/91	6	2/28/91	1
SLCVIW	L11187	636	1/28/91	1/30/91	2	2/8/91	9

**TABLE E-8
SUMMARY OF TFH-L HOLDING TIMES**

Sample ID	Lab ID	COC No.	Date Sampled	Date Analyzed	Days to Analysis
SATGTK1505 AQ	L11570	1040	1/28/91	2/11/91	14
SATGTK1505 AQ (R)	L11563	1044	1/30/91	2/11/91	12
SATGTK1505 AQ D	L11571	1040	1/28/91	2/11/91	14
SATGTK1505 AQ D (R)	L11564	1044	1/30/91	2/11/91	12

TABLE E-9
SUMMARY OF TOX HOLDING TIMES

Sample ID	Lab ID	COC No.	Date Sampled	Date Analyzed	Days to Analysis
SATGTK1501(PS)	L22320	(a)	1/28/91	2/13/91	16
SATGTK1503(PS)	L22321	(a)	1/28/91	2/13/91	16
SATGTK1505 AQ	L11570	1040	1/28/91	2/12/91	15
SATGTK1505 AQ (R)	L11563	1044	1/30/91	2/8/91	9
SATGTK1505 AQ D	L11571	1040	1/28/91	2/12/91	15
SATGTK1505 AQ D (R)	L11564	1044	1/30/91	2/8/91	9

(a) COC was not received by the laboratory.