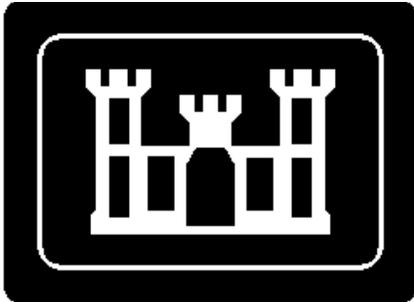


RCRA FACILITY INVESTIGATION REPORT

FOR

**FH-029 (Lake Henry)
FORT HOOD, TEXAS**

PREPARED FOR
**U.S. ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT**



CONTRACT NO. DACA63-96-D-0021

September 1999

**RCRA Facility Investigation Report
For
Site FH-029 (Lake Henry)**

Draft Final

**Prepared for
U.S. Army Corps of Engineers
Fort Worth District
Fort Worth, Texas**

**Under Contract Number
DACA63-96-D-0021**

**Prepared by
Science Applications International Corp.
4900 Blazer Parkway
Columbus, OH 43017**

September 1999

EXECUTIVE SUMMARY

This report describes the collection and analysis of data from FH-029 (Lake Henry), one of 35 Solid Waste Management Units (SWMUs) that are the subject of a Resources Conservation and Recovery Act (RCRA) Facility Investigation (RFI) at Fort Hood, Texas. The purpose of the RFI is to determine if a release of contaminants has occurred, and to characterize the potential source and extent of contamination caused by waste disposal operations at the SWMU.

FH-029 is a surface impoundment that receives wash water from vehicle wash racks and storm water runoff from eleven motor pools along North Avenue on the Main Cantonment. These sources are suspected to contribute contaminants to surface water and sediment in Lake Henry and its system of drainage ditches. The RFI consisted of sampling of surface water and sediment in both the ditches and Lake Henry. The samples were analyzed for eight RCRA metals, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs). A total of 27 surface water and 15 sediment samples were collected for the FH-029 investigation.

The sampling results were subjected to a two-part risk screening process according to guidance in the Texas Natural Resources Conservation Commission (TNRCC) Risk Reduction Standards (30 TAC 335 Subchapter S). The RRS Number 1 screen compares sample results either to facility-wide background criteria or analytical practical quantitation limits (PQLs). The RRS Number 2 screen compares the analytical results that exceed the RRS Number 1 values to health-based standards that are considered protective of human health and the environment.

In pond sediments at FH-029, barium, cadmium and several organics were present in concentrations exceeding the TNRCC RRS Number 2 criteria. Sediment collected at the outlet from Lake Henry had only cadmium at a concentration above the soil background value. The organic compounds identified above risk criteria in pond sediments are known to be common laboratory analytical artifacts, and as such are not contributing to risk at FH-029. Sediments in the ditches north of North Avenue and immediately surrounding Lake Henry exhibited cadmium at concentrations exceeding the risk values. Cadmium in the ditches is evidently contributing to the cadmium occurrences in the sediment at Lake Henry and its outlet drainage.

Sediment collected in the drainage ditches just north of North Avenue showed concentrations of several organics, as well as cadmium, chromium and lead above risk criteria. Results of statistical evaluations indicate that concentrations of chromium in dry sediment at FH-029 are not significantly different from background chromium concentrations. Chromium and lead were only detected above risk criteria in one sample near an oil/water separator that is not in the immediate vicinity of Lake Henry, and concentrations of both chromium and lead reach nondetectable limits in both sediment and surface water prior to reaching the inlet of Lake Henry.

Surface water from the ditches exceeds risk criteria for organics and metals in several locations. However, concentrations of these compounds in surface water diminish to undetectable quantities by the time they reach Lake Henry, and are not present in surface water exiting the pond. Thus, the ditches and the pond constitute a properly functioning treatment unit used to remove contaminants prior to discharge to the receiving stream. There being no release of contaminants from Lake Henry via the surface water pathway, and no current exposure to Lake Henry sediments, no further action is recommended for FH-029 at this time.

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ACRONYMS

AA	Atomic Absorption
BEGM	Bureau of Economic Geology
CQAR	Chemical Quality Assessment Report
DOT	Department of Transportation
DPW	Directorate of Public Works
DQO	Data Quality Objective
ft	feet or foot
GC/MS	Gas Chromatography/Mass Spectrometry
ICP	Inductively Coupled Plasma
IDW	Investigation Derived Waste
LCS	Laboratory Control Samples
msl	mean sea level
MS/MSDs	Matrix Spike/Matrix Spike Duplicate
NPDES	National Pollutant Discharge Elimination System
PAH	Polynuclear Aromatic Hydrocarbons
ppb	parts per billion
ppm	parts per million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RRS	Risk Reduction Standards
SAIC	Science Applications International Corporation
SVOC	Semivolatile Organic Compound
SWMU	Solid Waste Management Unit
TNRCC	Texas Natural Resources Conservation Commission
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
UTL	Upper Tolerance Limit
VOC	Volatile Organic Compound

1.0 INTRODUCTION

Fort Hood is an active U.S. Army installation occupying 217,551 acres (339 square miles) in southern Coryell and Bell Counties in central Texas. It is situated 60 miles north of Austin, and about 50 miles south of Waco. The installation is located north of and adjacent to the city of Killeen, east of and adjacent to the city of Copperas Cove, and four miles south of the city of Gatesville. A vicinity map is shown in Figure 1.1.

Fort Hood began operations in 1942. Robert Gray Air Field, originally operated by the Air Force as Robert Gray Air Force Base, was established in 1947 (U. S. Army 1996a). Fort Hood's mission is training, testing, and deployment of military personnel and equipment. The post is commanded by the III Corps Commander. Currently, the post supports two full armored divisions (the 1st Cavalry and 4th Infantry Divisions). Forty-three thousand military personnel are stationed there; and an additional 30,000 family members, civilians, volunteers, and private-sector employees also live or work at Fort Hood (U.S. Army 1996b). Among the military assets of Fort Hood are approximately 2,500 tracked vehicles, over 11,000 wheeled vehicles, six fixed wing aircraft, and 230 rotary-wing aircraft. The post has 67 active firing and demolition ranges.

The Fort Hood military reservation is regulated under the Resource Conservation and Recovery Act (RCRA) as a hazardous waste management facility. Fort Hood has a RCRA permit to operate three hazardous waste storage units. The RCRA permit requires that Fort Hood perform a RCRA Facility Investigation (RFI) for 40 solid waste management units (SWMUs) listed in the permit. These SWMUs are distributed across the military reservation, in the main cantonment, West Fort Hood, and North Fort Hood. They include former solid waste landfills and burial sites, former and inactive underground storage tank locations, active wash rack/sewer systems, effluent ponds, and a sanitary sewer network. An installation map is shown in Figure 1.2.

This report describes the collection and analysis of data from SWMU FH-029, Lake Henry, one of 35 SWMUs investigated during the RFI conducted November 1996 through March 1998. FH-029 is located east of Clear Creek Road and north of Turkey Run Road.

1.1 BACKGROUND

FH-029 has a surface area of approximately 4.4 acres in size. The wash rack and storm water systems discharging to Lake Henry have been in operation since the 1960's. Eleven of the forty-five wash racks on the main cantonment discharge effluent to Lake Henry through drainage ditches. Water that is discharged into Lake Henry is a combination of wash-water generated during the cleaning of military vehicles and storm water runoff from pavement in the motor pools. Lake Henry drains a watershed area of 1,100 acres during storm events. Wash-water from the vehicle wash racks passes through oil/water separators and into lined and unlined ditches that flow into Lake Henry. There are no lined ditches north of North Avenue.

Lake Henry is a temporary equalization pond for Lake C (FH-061). Lake Henry discharges into a drainage ditch that flows into Lake C. Lake C discharges into House Creek, House Creek discharges into Cowhouse Creek, which in turn discharges into Belton Lake, east of Fort Hood. Lake Henry

discharges in all months except the driest, June, July, and August. Lake Henry is surrounded by small scrub brush and trees and recreational use is prohibited.

1.2 SCOPE AND OBJECTIVES

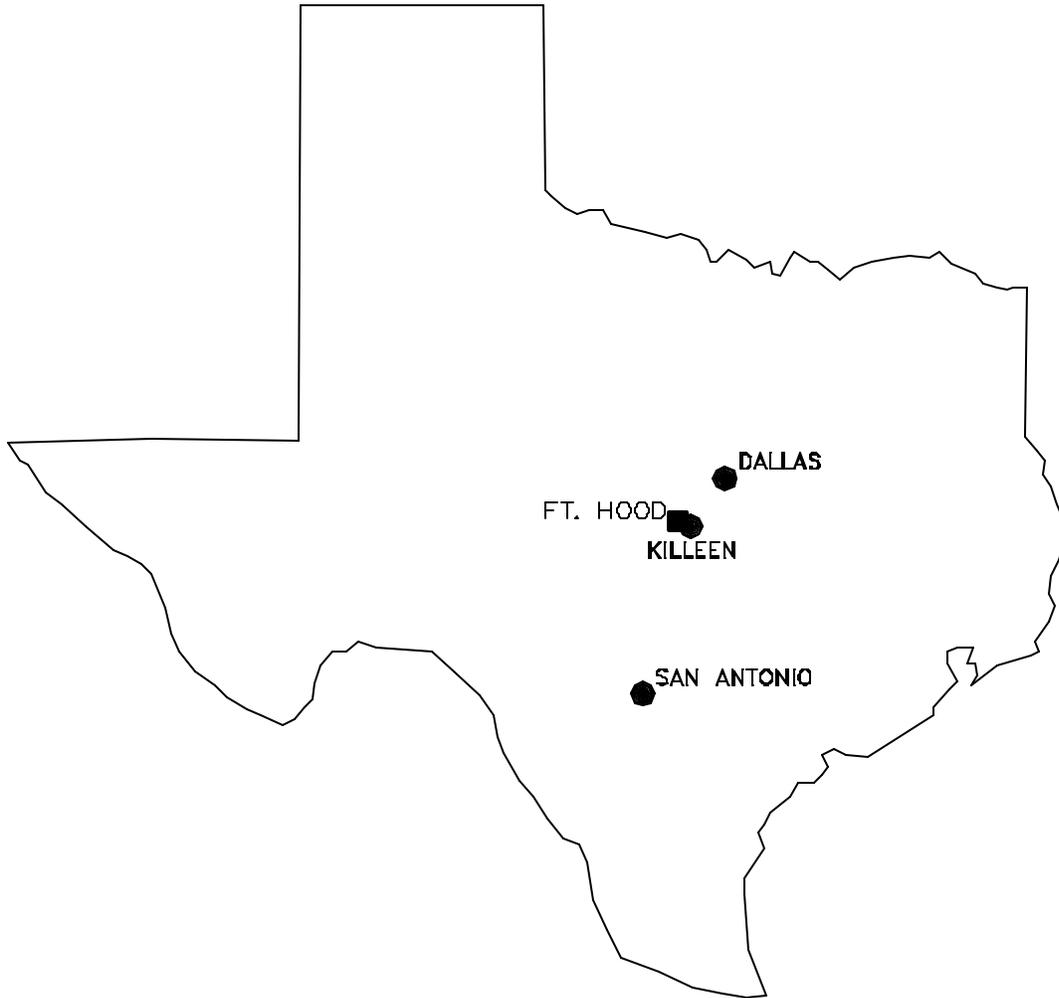
The objective of the RFI at FH-029 was to determine if a release of hazardous constituents has occurred and to characterize the potential source and extent of contamination. This report assesses the nature of surface water and sediment contamination at Lake Henry and its drainage ditches and evaluates what, if any, corrective measures are needed.

The specific objectives of the investigation of FH-029 were as follows:

- determine the presence or absence of contaminants in the surface water and sediments along the drainage system upstream of and within Lake Henry;
- characterize the migration potential of the contaminants identified in the surface water and sediments along the drainage system and within Lake Henry;
- evaluate the potential human health risks associated with contaminants detected in surface water and sediments; and,
- determine what, if any, corrective measures are needed to address contamination associated with SWMU FH-029.

The approach to the RFI included field sampling and laboratory analysis of surface water and sediment. The sampling and analysis program was conducted in accordance with the Final RCRA Facility Investigation Work Plan for Fort Hood Site FH-029 (U.S. Army Corps of Engineers [USACE] 1995) and the RCRA Facility Investigation Chemical Data Acquisition Plan and Addendum (USACE 1996).

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U.S. ARMY
FORT HOOD, TEXAS



RCRA FACILITY INVESTIGATION

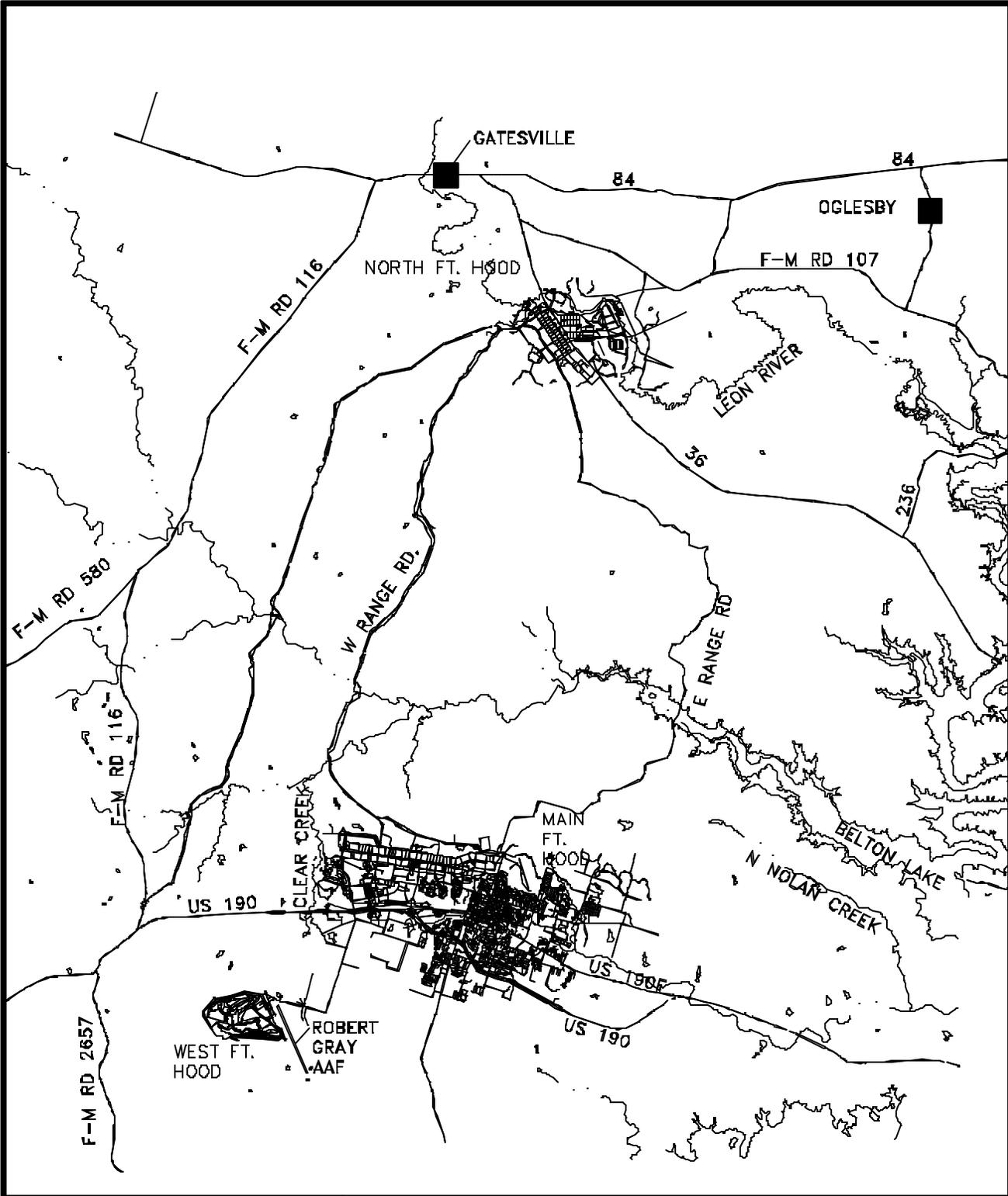
**FORT HOOD
VICINITY MAP**



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International Corporation* Columbus, Ohio

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LEGEND

-  MAJOR ROADS
-  RIVERS/STREAMS
-  WATER BODIES

U.S. ARMY
FORT HOOD, TEXAS

RCRA FACILITY INVESTIGATION

FT. HOOD INSTALLATION MAP



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2.0 ENVIRONMENTAL SETTING

The material presented in this section describes the physical characteristics of FH-029 and its surroundings. The geology, physiography, and climate are presented using regional and site-specific data (where available).

2.1 PHYSIOGRAPHIC SETTING

Fort Hood is located within the eastern edge of the Lampasas Cut Plains region of the North-Central Plains physiographic province. The topography of Fort Hood consists of small stream valleys separated by ridge-forming mesas. Relief is as great as 340 feet (ft). The Black and Blackwell Mountains are prominent features north of the main cantonment, as are Seven Mile Mountain at West Fort Hood, and the Dalton Mountains southwest of North Fort Hood. A topographic map of the main cantonment of Fort Hood is provided in Figure 2.1.

Local relief on the main cantonment and at West Fort Hood is generally less than 100 ft, with flat to gently rolling topography. Elevations on the main cantonment range from 860 to 940 ft above mean sea level (msl). Lake Henry (SWMU FH-029) elevation is approximately 866 ft above msl.

The rivers, streams, and creeks that constitute the main surface water pathways at Fort Hood are shown on Figure 2.1. The main cantonment lies along a watershed divide between Belton Lake and the Leon River, downstream from the lake. The western and north-central parts of the main cantonment are drained by Clear Creek, which discharges to House Creek. House Creek is a tributary to the eastward-flowing Cowhouse Creek, which discharges to Belton Lake, a man-made reservoir. South Nolan Creek and North Nolan Creek both originate on Fort Hood and flow eastward to the Leon River, downstream of Belton Lake.

2.2 GEOLOGIC CONDITIONS

A summary of the geology of the Fort Hood area relevant to this RFI is adapted from the Final RCRA Facility Investigation Work Plan, 35 Solid Waste Management Units, Fort Hood, Texas (USACE 1995). Relevant information on the occurrences of soils and bedrock has been incorporated to further characterize the geology of FH-029 and its surroundings.

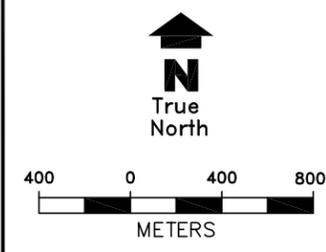
2.2.1 Bedrock

Lower Cretaceous marine sedimentary rocks make up the stratigraphy underlying Fort Hood. The Fredericksburg Group consists of several stratigraphic units. The Walnut Formation is the lowermost unit of the Fredericksburg Group and is the dominant stratigraphic unit in the main cantonment. It consists of shales with interbedded limestone, chalky nodular limestone, and shell aggregates. The fossiliferous Walnut Formation is exposed in many locations at Fort Hood. It varies in thickness from 100 to 150 ft (Bureau of Economic Geology [BEGM] 1979). The Comanche Peak Formation and an undifferentiated unit overlie the Walnut Formation, but are present at the surface

only north of the main cantonment in the Black and Blackwell Mountains, and on West Fort Hood on Seven Mile Mountain.

Bedrock dips gently to the southeast throughout the area. Inactive faults are present in the subsurface to the east of Fort Hood along the Balcones Fault Zone, which runs through Bell, McLennan, and Hill Counties.

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- LEGEND
- TOPOGRAPHIC CONTOUR (FT.)
 - - - - DRAINAGE
 - > SURFACE DRAINAGE FLOW
 - FH-029

U.S. ARMY
FORT HOOD, TEXAS

RCRA FACILITY INVESTIGATION

TOPOGRAPHY AND DRAINAGE
OF MAIN FT. HOOD

SAIC Science Applications International Corporation Columbus, Ohio

DRAWN BW	CHECKED	DATE	SCALE AS SHOWN	PROJECT NO.	FIGURE NO. 2.1
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2.2.2 Unconsolidated Materials

Alluvial deposits of Quaternary age are present along stream valleys on the main cantonment, specifically along South Nolan Creek on the southern edge of the cantonment (USACE 1995). It is suspected that much alluvium and other natural surface deposits have been reworked throughout the active life of Fort Hood during construction projects.

2.3 CHARACTERIZATION OF SOILS

In many areas of the main cantonment, silty or sandy clay soils overlie bedrock. In upland areas, these soils contain abundant rock fragments. In general, these soils have low permeabilities (U.S. Department of Agriculture [USDA] 1985a,b). They range in thickness from 15 to 20 ft. Because soils have been extensively reworked for construction and landfilling in the SWMUs that were investigated, it is difficult to apply the USDA classification to the soils encountered on the main cantonment.

2.4 CHARACTERIZATION OF CLIMATE

The climate of the Fort Hood-Killeen area can be characterized as semi-arid continental. Winters (December-March) are mild, with the average daily maximum temperature in January (the coldest month) reaching 60° F. Below-freezing temperatures occur on an average of 23 days per year. The normal daily winter temperature range is 42 to 62° F. At times, strong northerly winds accompanied by sharp drops in temperature occur during the winter months. Summers (June-September) are hot and dry. The average daily maximum temperature in August, the hottest month, reaches 95.9° F. The normal daily temperature range for summer is 75 to 95° F. The average daily temperature in Killeen is 68.1° F.

Average annual rainfall in the Killeen area is 30.4 inches, and is most concentrated from September to May (U.S. Army 1996). Snowfall is rare. The average annual humidity in the region is 55 percent. Total rainfall for 1996 at Fort Hood was 26.7 inches. Severe weather in the form of heavy rain, hail storms, and ice storms is common in the winter months.

3.0 UNIT CHARACTERIZATION

Lake Henry is a surface impoundment that receives wash-water from the vehicle wash racks and storm water runoff from North Avenue and from eleven motor pools along North Avenue. Lake Henry has provided a means for the collection and settling out of oils and solids that may have passed through the oil/water separators at the motor pools. The oil/water separators discharge to a series of lined and unlined ditches along North Avenue. Over 1,000 acres of the main cantonment are drained by these ditches. Eleven vehicle wash racks are contained in this watershed and drain to Lake Henry.

Flow into Lake Henry is very irregular as a consequence of periods of inactivity at some motor pools and long intervals without rainfall. Therefore, it is characteristic for there to be no flow out of the motor pools for days or weeks, followed by days of significant flow. In the driest months, low flow to Lake Henry may not exceed its holding capacity and no water is discharged from the lake. Lake Henry is a temporary equalization pond for Lake C and is not specifically covered in the National Pollutant Discharge Elimination System (NPDES) permit. An NPDES discharge point is located near the outlet of Lake C.

Lake Henry, as well as all other surface water SWMUs on the main cantonment, discharges ultimately to Belton Lake, which is used as a source of the region's public drinking water supply. A photograph of Lake Henry is shown in Figure 3.1.

Little was known about the exact composition of the effluent from wash racks and of storm water runoff from the motor pools, roads, and driveways prior to this RFI. However, washing of the tanks and other military vehicles clearly removes residues of fuels (such as JP-8, used as tank fuel), fuel by-products, oils and greases, metal shavings, paint, and soil particles. Oils, hydraulic fluids, and other petroleum-based products are frequently spilled or dripped on motor pool pavement in small quantities. These components are suspected to be present in surface water and sediments in drainage ditches and Lake Henry. Operation and maintenance of the oil/water separators includes routine/scheduled removal of oils and/or sediments from the units. As required under the NPDES permit for the main cantonment, water from the oil/water separators are regularly sampled and analyzed for indicator parameters such as chemical oxygen demand, biochemical oxygen demand, total suspended solids, oils and greases, and pH. No exceedances of the permit limits of these parameters have been noted at the vehicle wash racks that ultimately discharge to Lake Henry.



Figure 3.1 Photograph of FH-029

4.0 CHARACTERIZATION OF UNIT CONTAMINATION

The following sections describe the results of field activities and analytical procedures performed to achieve site specific objectives defined in Section 1.2 of this report.

4.1 TECHNICAL APPROACH

Twenty-seven surface water and fifteen sediment samples were collected in the locations specified in the Final RCRA Facility Investigation Work Plan for 35 SWMUs (USACE 1995). The sampling effort was conducted in November 1996. A site map and sampling locations are shown in Figure 4.1. Fifteen sample locations are downstream of oil/water separator outfalls. Ten locations are in unlined ditches not co-located with oil/water separators. Three sample locations are within the limits of Lake Henry.

All samples were analyzed for volatile organic compounds (VOCs), semi-volatile organics (SVOCs), and metals. All sediment samples were also tested for moisture content to ensure that all analyses are reported on a dry weight basis.

Contaminant concentrations will vary based on sample depth or location due to the chemical nature of the contaminant and the method by which the contaminant is deposited in the sediment (i.e., spills, leaks, and atmospheric deposition). Concentrations in the surface water may differ greatly from sediment or underlying soil levels. These factors were considered in selecting the sample locations.

Surface water constituents evaluated in drainage ditches for this RFI are likely to be representative of transient conditions in any given motor pool or wash rack area for a given day. Residence time for surface water in ditches is almost zero, and the composition of the effluent water may change depending on what cleaning activities are being performed in the wash rack areas. Sediments in drainage ditches may also possess chemical constituents only from the recent past, since residence time for sediments in the ditches is likely to be short. Analyses of Lake Henry's water and sediment, however, may provide information on chemical constituents that have accumulated over a much longer time interval.

4.1.1 Surface Water Sampling

Three surface water samples were collected at Lake Henry. One surface water sample (SW121) was collected at the inlet of the lake, one (SW122) was collected in the middle of the lake, and one (SW125) was collected in the ditch that drains the lake. The remaining 24 surface water samples were collected in the outfalls of the oil/water separators and from each of the unlined ditches where water was present, all located north of North Avenue. The locations of the sampling points are shown in Figure 4.1. All samples were collected according to procedures discussed in Section 3.1 of the Final RCRA Facility Investigation Work Plan for 35 SWMUs (USACE 1995).

Lake and ditch water samples were collected at a depth of at least six inches below the water surface. All water samples from the ditches were collected by submersion of the sample containers below the water surface when possible, then taking off the cap and allowing the bottle to fill. When water depth was not sufficient to allow the container to be submerged, then the water was dammed to concentrate the flow to a central collection point. The sample container was then submerged or the flow of the water was directed into the bottle. The samples were analyzed for VOCs, SVOCs, and metals.

4.1.2 Sediment Sampling

Two lake sediment samples (SD121 and SD122) and thirteen ditch sediment samples were collected in November 1996. Sediment samples were collected following collection of the surface water samples, to prevent suspension of sediment particles that could potentially be included in the water sample. Sampling began at the sampling point furthest downstream, and progressed upstream. This prevented cross-contamination between upstream and downstream sediment. One discrete sample was collected from each location. Sediment samples were collected from below the sediment-water interface to a maximum depth of 12 inches.

In Lake Henry, a hand core sediment sampler was used to collect sediment sample SD121. All other sediment samples were collected either using a stainless steel hand auger, or stainless steel bowls and spoons. Sediment collected downstream of each oil/water separator came from the unlined portions of the ditches to which they discharge.

No native soil samples were collected beneath lake sediments at FH-029, however, soil sampling of native soil conducted at FH-027 and FH-028 indicated no release to soil from these units. Since the operation of these units is similar to that of FH-029, results of native soil sampling at FH-027 and FH-028 provide a representative determination that a release of contaminants to native soil at FH-029 has not occurred. Results of native soil sampling is presented in the RFI reports for FH-027 and FH-028.

4.2 UNIT INVESTIGATION AND ANALYTICAL RESULTS

Analytical results for surface water and sediments at SWMU FH-029 are provided in their entirety in Appendix A (including lab sheets and validated data tables). Tables 4.1 and 4.2 summarize those constituents detected above practical quantitation limits (PQLs) in sediment and surface water, respectively. Constituents detected above PQLs were screened against background and risk-based screening criteria as described in Section 4.3 and Section 5.0.

4.2.1 Sediment Analytical Results

The following inorganic constituents were detected in sediment at concentrations above PQLs: arsenic, barium, cadmium, chromium, lead and selenium. Selenium was detected above the PQL in only one sample (SD120). The other metals were present at concentrations above the PQL in every sample. Concentrations ranged from 0.19 parts per million (ppm) cadmium in SD120 to 93.1 ppm barium in SD128. Silver and mercury were not detected.

VOCs were detected above PQLs at six sediment sampling locations including the two samples from Lake Henry. There were six occurrences of 2-butanone, in concentrations ranging from 7 parts per billion (ppb) (SD101 and SD120) to 61 ppb (SD121). Acetone was also present at five locations (four of which coincide with the 2-butanone detections) in concentrations ranging from 65 ppb at SD122 to 180 ppb at SD121. There was one occurrence of methylene chloride above the PQL at SW121 (22 ppb). In SD111, seven VOCs were identified above the PQL including 1,2,4- and 1,3,5-trimethylbenzene, naphthalene, and xylenes.

SVOCs were detected at the following locations at concentrations above the PQLs: SD107, SD111, SD118, SD121, and SD122. Bis(2-ethylhexyl)phthalate was detected in five of these locations at concentrations ranging from 930 ppb at SD122 to 12,000 ppb at SD111. Di-n-octyl phthalate was detected twice, at SD107 at 490 ppb and at SD111 at 2600 ppb. Pyrene was present at 510 ppb in SD118, and benzo(b)fluoranthene was present at SD111 at 3300 ppb. No other SVOCs were present above PQLs.

4.2.2 Surface Water Analytical Results

Arsenic, barium, cadmium, chromium, lead, mercury, and selenium were detected in surface water above PQLs. Barium was present above the PQL in nearly every sample. Concentrations ranged from 23.7 ppb at SW103 to 360 ppb at SW112. Chromium was detected in 18 samples at concentrations ranging from 0.94 to 18.4 ppb. Arsenic was detected in seven samples, at concentrations from 2.7 to 11.4 ppb. Cadmium was present above the PQL in 17 samples at concentrations ranging from 0.74 to 40.3 ppb. Mercury was present above the PQL in three samples at concentrations of 0.11, 0.15, and 0.21 ppb. Selenium was detected in four samples at concentrations ranging from 3.2 to 6.7 ppb. SW128, which is located near a wash rack north of North Avenue, was the locus of the largest number of maximum values for metals above the PQLs.

Fifteen VOCs were detected above the PQLs at 18 locations. Concentrations ranged from 6 ppb naphthalene at SW128 to 360 ppb acetone at SW112. No VOCs were detected at SW103, SW104, SW111, SW114, SW116, SW121, SW122, SW123, or SW125. Samples in which more than one VOC was detected included SW102, SW106, SW108, SW109, SW110, SW112, SW113, SW115, SW117, SW118, SW120, SW126, SW127, and SW128. Most of these samples were collected at the outfalls of oil-water separators outside the motor pools along North Avenue. No VOCs or SVOCs were detected in surface water samples from Lake Henry or its outlet ditch.

Six SVOCs were detected above the PQLs at six locations (SW102, SW106, SW112, SW113, SW118, and SW127). Bis(2-ethylhexyl)phthalate and 4-methylphenol were each detected twice. Naphthalene, 2-methylnaphthalene, phenol, and benzyl alcohol were each detected once. Concentrations of SVOCs ranged from 11 ppb bis(2-ethylhexyl)phthalate at SW102 to 23 ppb 4-methylphenol at SW127.

Table 4.1 FH-029 Analytes Detected in Sediment Above Practical Quantitation Limits (PQLs)

Location	Sample ID	Depth	Analysis Type	Parameter	Result	PQL	Units
SW101	29SD101	--	Metals	Arsenic	4.1	0.28	mg/kg
				Barium	30.9	0.03	mg/kg
				Cadmium	0.37 B	0.06	mg/kg
				Chromium	6.3	0.09	mg/kg
				Lead	4.8	0.19	mg/kg
			Volatile Organics	2-Butanone	7	6	ug/kg
SW105	29SD105	--	Metals	Arsenic	3.7	0.45	mg/kg
				Barium	38.6	0.11	mg/kg
				Cadmium	0.83	0.05	mg/kg
				Chromium	6.3	0.11	mg/kg
				Lead	10.3	0.19	mg/kg
SW107	29SD107	--	Metals	Arsenic	2.2	0.44	mg/kg
				Barium	26.3	0.11	mg/kg
				Cadmium	2.9	0.05	mg/kg
				Chromium	6.5	0.11	mg/kg
				Lead	9.6	0.19	mg/kg
			Semi-Volatile Organics	Bis(2-ethylhexyl)phthalate	1400	440	ug/kg
	Di-n-octyl Phthalate	490	440	ug/kg			
SW110	29SD110	--	Metals	Arsenic	3.2	0.39	mg/kg
				Barium	19.1	0.09	mg/kg

Table 4.1 FH-029 Analytes Detected in Sediment Above Practical Quantitation Limits (PQLs)

Location	Sample ID	Depth	Analysis Type	Parameter	Result	PQL	Units
SW110	29SD110	--	Metals	Cadmium	0.2 B	0.05	mg/kg
				Chromium	4.6	0.09	mg/kg
				Lead	3.4	0.17	mg/kg
SW111	29SD111	--	Metals	Arsenic	4.4	0.63	mg/kg
				Barium	72	0.15	mg/kg
				Cadmium	41.7	0.08	mg/kg
				Chromium	29.5	0.15	mg/kg
				Lead	118	0.27	mg/kg
			Semi-Volatile Organics	Benzo(b)fluoranthene	3300	620	ug/kg
				Bis(2-ethylhexyl)phthalate	12000	1200	ug/kg
				Di-n-octyl Phthalate	2600	620	ug/kg
			Volatile Organics	1,2,4-trimethylbenzene	24	9	ug/kg
				1,3,5-trimethylbenzene	15	9	ug/kg
				2-Butanone	48	9	ug/kg
				Acetone	260	9	ug/kg
				m,p-Xylene	25	9	ug/kg
Naphthalene	21	9		ug/kg			
o-Xylene	10	9	ug/kg				
SW116	29SD116	--	Metals	Arsenic	2.4 J	0.38	mg/kg
				Barium	12.1 J	0.09	mg/kg
				Cadmium	0.45	0.05	mg/kg
				Chromium	2.9 J	0.09	mg/kg
				Lead	2.8 J	0.16	mg/kg

Table 4.1 FH-029 Analytes Detected in Sediment Above Practical Quantitation Limits (PQLs)

Location	Sample ID	Depth	Analysis Type	Parameter	Result	PQL	Units
SW118	29SD118	--	Metals	Arsenic	5 J	0.48	mg/kg
				Barium	84.3 J	0.12	mg/kg
				Cadmium	2.9	0.06	mg/kg
				Chromium	15.5 J	0.12	mg/kg
				Lead	18.6 J	0.20	mg/kg
			Semi-Volatile Organics	Bis(2-ethylhexyl)phthalate	1100	480	ug/kg
				Pyrene	510	480	ug/kg
SW119	29SD119	--	Metals	Arsenic	4.8 J	0.42	mg/kg
				Barium	20.9 J	0.10	mg/kg
				Cadmium	0.21	0.05	mg/kg
				Chromium	3.1 J	0.10	mg/kg
				Lead	3.2 J	0.18	mg/kg
				SW120	29SD120	--	Metals
Barium	60.8 J	0.11	mg/kg				
Cadmium	0.19	0.05	mg/kg				
Chromium	10.7 J	0.11	mg/kg				
Lead	5.9 J	0.18	mg/kg				
Selenium	0.41	0.39	mg/kg				
Volatile Organics	2-Butanone	7	6				ug/kg
SW121	29SD121	--	Metals	Arsenic	5.5 *	0.44	mg/kg

Table 4.1 FH-029 Analytes Detected in Sediment Above Practical Quantitation Limits (PQLs)

Location	Sample ID	Depth	Analysis Type	Parameter	Result	PQL	Units
SW121	29SD121	--	Metals	Barium	66.4	0.05	mg/kg
				Cadmium	0.72 B	0.09	mg/kg
				Chromium	13.6	0.14	mg/kg
				Lead	16.8	0.30	mg/kg
			Semi-Volatile Organics	Bis(2-ethylhexyl)phthalate	1000	580	ug/kg
			Volatile Organics	2-Butanone	61	9	ug/kg
				Acetone	180	18	ug/kg
				Methylene Chloride	22	9	ug/kg
			SW122	29SD122	--	Metals	Arsenic
Barium	38.8	0.04					mg/kg
Cadmium	0.62 B	0.07					mg/kg
Chromium	9.5	0.12					mg/kg
Lead	8.8	0.25					mg/kg
Semi-Volatile Organics	Bis(2-ethylhexyl)phthalate	930				480	ug/kg
Volatile Organics	2-Butanone	10				7	ug/kg
	Acetone	65				7	ug/kg
SW123	29SD123	--				Metals	Arsenic
			Barium	45.3 J	0.12		mg/kg
			Cadmium	2.3	0.06		mg/kg
			Chromium	8.9 J	0.12		mg/kg
			Lead	8.9 J	0.20		mg/kg

Table 4.1 FH-029 Analytes Detected in Sediment Above Practical Quantitation Limits (PQLs)

Location	Sample ID	Depth	Analysis Type	Parameter	Result	PQL	Units
SW124	29SD124	--	Metals	Arsenic	5.3 J	0.58	mg/kg
				Barium	50.3 J	0.14	mg/kg
				Cadmium	1.4	0.07	mg/kg
				Chromium	11.1 J	0.14	mg/kg
				Lead	12.7 J	0.25	mg/kg
			Volatile Organics	Acetone	140	9	ug/kg
SW125	29SD125	--	Metals	Arsenic	6.9 J	0.59	mg/kg
				Barium	70.7 J	0.14	mg/kg
				Cadmium	1.1	0.07	mg/kg
				Chromium	15.3 J	0.14	mg/kg
				Lead	17.2 J	0.25	mg/kg
SW128	29SD128	--	Metals	Arsenic	7.4	0.34	mg/kg
				Barium	93.1	0.04	mg/kg
				Cadmium	0.45 B	0.07	mg/kg
				Chromium	15.8	0.11	mg/kg
				Lead	9.4	0.23	mg/kg
			Volatile Organics	2-Butanone	32	7	ug/kg
	Acetone	110	7	ug/kg			

J - Indicates estimated value

B (Inorganics) - Value was less then the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).

* - Duplicate analysis not within control limits.

Table 4.2 FH-029 Analytes Detected in Surface Water Above Practical Quantitation Limits (PQLs)

Location	Sample ID	Depth	Analysis Type	Parameter	Result	PQL	Units
SW102	29SW102	--	Metals	Barium	145	0.30	ug/l
				Cadmium	22	0.50	ug/l
				Chromium	11.5	0.80	ug/l
				Lead	22.3	1.7	ug/l
			Semi-Volatile Organics	Bis(2-ethylhexyl)phthalate	11	10	ug/l
			Volatile Organics	Acetone	37	5	ug/l
p-Isopropyltoluene	19	5		ug/l			
SW103	29SW103	--	Metals	Barium	23.7	0.30	ug/l
				Chromium	0.9 B	0.80	ug/l
SW104	29SW104	--	Metals	Arsenic	3.1	2.5	ug/l
				Barium	79.7	0.30	ug/l
				Cadmium	4.6	0.50	ug/l
				Chromium	0.94	0.80	ug/l
SW105	29SW105	--	Metals	Arsenic	3 B	2.5	ug/l
				Barium	94.6	0.30	ug/l
				Cadmium	1.3 B	0.50	ug/l
				Chromium	0.97 B	0.80	ug/l
				Lead	1.8 B	1.7	ug/l
			Volatile Organics	4-Methyl-2-pentanone	8	5	ug/l

Table 4.2 FH-029 Analytes Detected in Surface Water Above Practical Quantitation Limits (PQLs)

Location	Sample ID	Depth	Analysis Type	Parameter	Result	PQL	Units
SW106	29SW106	--	Metals	Barium	101	0.30	ug/l
				Cadmium	4.8	0.50	ug/l
				Chromium	10.5	0.80	ug/l
				Lead	9.6	1.7	ug/l
			Semi-Volatile Organics	2-Methylnaphthalene	17	10	ug/l
				Naphthalene	24	10	ug/l
			Volatile Organics	1,2,4-trimethylbenzene	34	5	ug/l
				1,3,5-trimethylbenzene	6	5	ug/l
				Acetone	15	5	ug/l
				Naphthalene	49	5	ug/l
SW107	29SW107	--	Metals	Barium	34.3	0.30	ug/l
				Cadmium	0.74 B	0.50	ug/l
				Chromium	1.3 B	0.80	ug/l
			Volatile Organics	Chloromethane	10	5	ug/l
SW108	29SW108	--	Metals	Barium	93.6	0.30	ug/l
				Cadmium	16.7	0.50	ug/l
				Lead	4.7	1.7	ug/l
			Volatile Organics	1,2,4-trimethylbenzene	32	5	ug/l
				1,3,5-trimethylbenzene	9	5	ug/l
				Acetone	38	5	ug/l
				m,p-Xylene	26	5	ug/l
				Naphthalene	6	5	ug/l

Table 4.2 FH-029 Analytes Detected in Surface Water Above Practical Quantitation Limits (PQLs)

Location	Sample ID	Depth	Analysis Type	Parameter	Result	PQL	Units
SW108	29SW108	--	Volatile Organics	o-Xylene	13	5	ug/l
				Toluene	8	5	ug/l
SW109	29SW109	--	Metals	Arsenic	11.4	3.3	ug/l
				Barium	312	0.80	ug/l
				Cadmium	40.3	0.40	ug/l
				Chromium	35.2	0.80	ug/l
				Lead	41.3	1.4	ug/l
				Selenium	4.9 B	2.8	ug/l
			Volatile Organics	1,2,4-trimethylbenzene	7	5	ug/l
				2-Butanone	14	5	ug/l
				Acetone	140	5	ug/l
				Naphthalene	8	5	ug/l
SW110	29SW110	--	Metals	Barium	57.5	0.30	ug/l
				Chromium	1.4 B	0.80	ug/l
			Volatile Organics	2-Butanone	8	5	ug/l
				Acetone	73	5	ug/l
SW111	29SW111	--	Metals	Barium	26.3	0.30	ug/l
				Cadmium	1.2 B	0.50	ug/l
				Chromium	1.6 B	0.80	ug/l
SW112	29SW112	--	Metals	Barium	360	0.80	ug/l

Table 4.2 FH-029 Analytes Detected in Surface Water Above Practical Quantitation Limits (PQLs)

Location	Sample ID	Depth	Analysis Type	Parameter	Result	PQL	Units
SW112	29SW112	--	Metals	Cadmium	19	0.40	ug/l
				Chromium	9.6 B	0.80	ug/l
				Lead	3.9	1.4	ug/l
			Semi-Volatile Organics	4-Methylphenol	14	10	ug/l
				Benzyl Alcohol	20	10	ug/l
			Volatile Organics	1,2,4-trimethylbenzene	62	10	ug/l
				2-Butanone	160	10	ug/l
				4-Methyl-2-pentanone	180	10	ug/l
				Acetone	360	10	ug/l
				Ethylbenzene	12	10	ug/l
				m,p-Xylene	64	10	ug/l
				Naphthalene	44	10	ug/l
				o-Xylene	28	10	ug/l
				Toluene	38	10	ug/l
			SW113	29SW113	--	Metals	Arsenic
Barium	130	0.80					ug/l
Cadmium	20.8	0.40					ug/l
Chromium	18.4	0.80					ug/l
Lead	26.4	1.4					ug/l
Selenium	6.7	2.8					ug/l
Semi-Volatile Organics	Phenol	17					10
Volatile Organics	1,2,4-trimethylbenzene	16				5	ug/l
	2-Butanone	34				5	ug/l
	4-Methyl-2-pentanone	11				5	ug/l
	Acetone	42				5	ug/l
	m,p-Xylene	10				5	ug/l
Naphthalene	7	5				ug/l	

Table 4.2 FH-029 Analytes Detected in Surface Water Above Practical Quantitation Limits (PQLs)

Location	Sample ID	Depth	Analysis Type	Parameter	Result	PQL	Units
SW112	29SW112	--	Metals	Cadmium	19	0.40	ug/l
				Chromium	9.6 B	0.80	ug/l
				Lead	3.9	1.4	ug/l
			Semi-Volatile Organics	4-Methylphenol	14	10	ug/l
				Benzyl Alcohol	20	10	ug/l
			Volatile Organics	1,2,4-trimethylbenzene	62	10	ug/l
				2-Butanone	160	10	ug/l
				4-Methyl-2-pentanone	180	10	ug/l
				Acetone	360	10	ug/l
				Ethylbenzene	12	10	ug/l
				m,p-Xylene	64	10	ug/l
				Naphthalene	44	10	ug/l
				o-Xylene	28	10	ug/l
				Toluene	38	10	ug/l
			SW113	29SW113	--	Metals	Arsenic
Barium	130	0.80					ug/l
Cadmium	20.8	0.40					ug/l
Chromium	18.4	0.80					ug/l
Lead	26.4	1.4					ug/l
Selenium	6.7	2.8					ug/l
Semi-Volatile Organics	Phenol	17					10
Volatile Organics	1,2,4-trimethylbenzene	16				5	ug/l
	2-Butanone	34				5	ug/l
	4-Methyl-2-pentanone	11				5	ug/l
	Acetone	42				5	ug/l
	m,p-Xylene	10				5	ug/l
Naphthalene	7	5				ug/l	

Table 4.2 FH-029 Analytes Detected in Surface Water Above Practical Quantitation Limits (PQLs)

Location	Sample ID	Depth	Analysis Type	Parameter	Result	PQL	Units
SW114	29SW114	--	Metals	Arsenic	3.2	2.5	ug/l
				Barium	65.9	0.30	ug/l
				Cadmium	3.3	0.50	ug/l
SW115	29SW115	--	Metals	Barium	80.9	0.30	ug/l
				Cadmium	7.7	0.50	ug/l
				Chromium	14.4	0.80	ug/l
				Lead	4	1.7	ug/l
			Volatile Organics	Acetone	9	5	ug/l
				Bromodichloromethane	6	5	ug/l
				Dibromochloromethane	7	5	ug/l
p-Isopropyltoluene	10	5	ug/l				
SW116	29SW116	--	Metals	Barium	76.7	0.30	ug/l
SW117	29SW117	--	Metals	Barium	98.2	0.80	ug/l
				Cadmium	3.3 B	0.40	ug/l
				Chromium	1.1 B	0.80	ug/l
				Lead	2 B	1.4	ug/l
				Selenium	3.2 B	2.8	ug/l
			Volatile Organics	1,2,4-trimethylbenzene	38	5	ug/l
				2-Butanone	12	5	ug/l
Ethylbenzene	6	5		ug/l			
m,p-Xylene	35	5		ug/l			

Table 4.2 FH-029 Analytes Detected in Surface Water Above Practical Quantitation Limits (PQLs)

Location	Sample ID	Depth	Analysis Type	Parameter	Result	PQL	Units
SW121	29SW121	--	Metals	Barium	41.2	0.30	ug/l
SW122	29SW122	--	Metals	Barium Chromium	40.1 0.97 B	0.30 0.80	ug/l ug/l
SW123	29SW123	--	Metals	Barium Chromium Mercury	37.4 0.98 B 0.11 B	0.30 0.80 0.10	ug/l ug/l ug/l
SW124	29SW124	--	Metals	Barium Mercury	49.6 0.15 B	0.30 0.10	ug/l ug/l
			Volatile Organics	Acetone	8	5	ug/l
SW125	29SW125	--	Metals	Barium Mercury	37 0.21	0.30 0.10	ug/l ug/l
SW126	29SW126	--	Metals	Barium Cadmium Chromium Lead	75.9 6.4 1.5 B 5.1	0.80 0.40 0.80 1.4	ug/l ug/l ug/l ug/l

Table 4.2 FH-029 Analytes Detected in Surface Water Above Practical Quantitation Limits (PQLs)

Location	Sample ID	Depth	Analysis Type	Parameter	Result	PQL	Units
SW126	29SW126	--	Volatile Organics	1,2,4-trimethylbenzene	36	5	ug/l
				2-Butanone	15	5	ug/l
				m,p-Xylene	22	5	ug/l
				Naphthalene	6	5	ug/l
				o-Xylene	12	5	ug/l
				Toluene	7	5	ug/l
SW127	29SW127	--	Metals	Arsenic	3.5 B	3.3	ug/l
				Barium	170	0.80	ug/l
				Cadmium	3.7 B	0.40	ug/l
				Chromium	3.2 B	0.80	ug/l
				Lead	2.8 B	1.4	ug/l
			Semi-Volatile Organics	4-Methylphenol	23	10	ug/l
			Volatile Organics	1,2,4-trimethylbenzene	44	5	ug/l
				2-Butanone	16	5	ug/l
				4-Methyl-2-pentanone	10	5	ug/l
				Acetone	47	5	ug/l
				m,p-Xylene	24	5	ug/l
				Naphthalene	9	5	ug/l
				o-Xylene	10	5	ug/l
SW128	29SW128	--	Metals	Arsenic	3.8 B	3.3	ug/l
				Barium	205	0.80	ug/l
				Cadmium	24.1	0.40	ug/l
				Chromium	10.2	0.80	ug/l
				Lead	17.7	1.4	ug/l
				Selenium	4.3 B	2.8	ug/l

Table 4.2 FH-029 Analytes Detected in Surface Water Above Practical Quantitation Limits (PQLs)

Location	Sample ID	Depth	Analysis Type	Parameter	Result	PQL	Units
SW128	29SW128	--	Volatile Organics	1,2,4-trimethylbenzene	8	5	ug/l
				2-Butanone	56	5	ug/l
				4-Methyl-2-pentanone	45	5	ug/l
				Acetone	120	5	ug/l
				m,p-Xylene	8	5	ug/l
				Naphthalene	6	5	ug/l

B (Inorganics) - Value was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).

4.2.4 Disposition of Investigation Derived Waste (IDW)

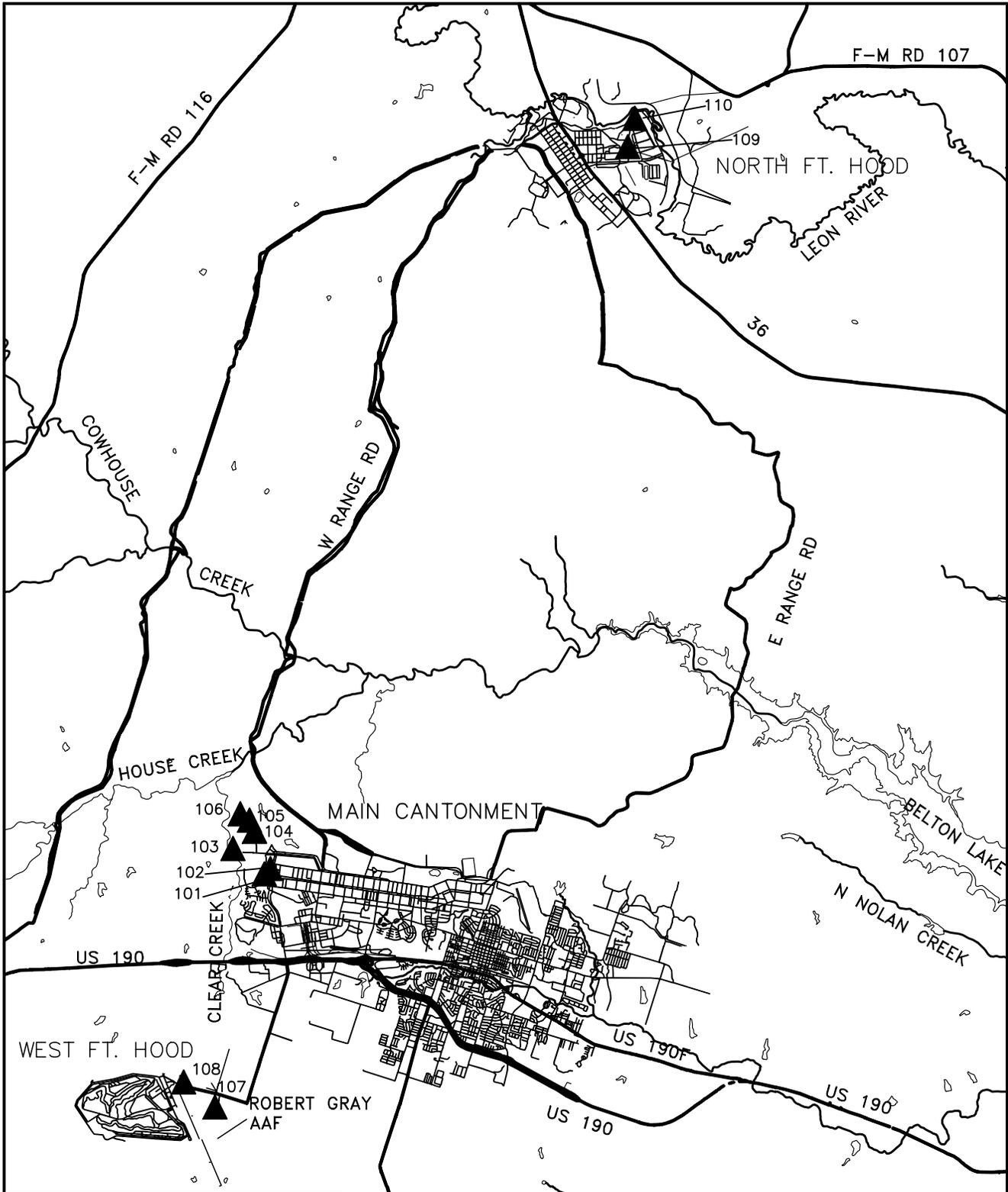
No IDW was generated during the sampling of surface water as water sample containers were submerged and no sampling equipment was needed for the investigations for FH-029 (Lake Henry). A small amount of IDW was generated when the sediment sampling equipment was decontaminated. The sediment sampling equipment was rinsed in the field of excess sediment, then thoroughly decontaminated at the field trailer, resulting in a small volume of liquid decontamination IDW.

The IDW generated from decontamination in the field trailer was combined with the decontamination waste from other SWMUs. This IDW is segregated into three types of waste: (1) potable wash/rinse water; (2) nitric acid/deionized water rinse; and (3) dilute methanol waste. Each waste stream was stored in containers in an accumulation area in the SAIC compound. All containers were clearly identified with Department of Transportation (DOT) - approved labels indicating the drums' contents and the dates they were put into service. Drums were staged in the SAIC compound pending disposition. All IDW determined to be potentially hazardous was delivered to the Fort Hood Directorate of Public Works (DPW) Classification Unit with the accompanying characterization data.

4.3 BACKGROUND CHARACTERIZATION AND COMPARISONS WITH WASTE UNIT SAMPLING RESULTS

In order to characterize naturally occurring constituents in soils at Fort Hood, samples were located and collected at 10 separate locations within the facility boundaries in the north, west, and main cantonments. Sampling locations are believed to be outside the influence of past or current industrial and/or waste activities at the facility. The general background sampling locations are presented in Figure 4.2. Background soils data and soil boring logs are presented in Appendices B and C, respectively. The background criteria for soils are applied to all SWMU soil samples, including dry sediments, such as those collected in drainage ditches where water flow is irregular (see Figure 4.2).

NAME: S:\HOOD\BACK.DWG DATE: OCT 13, 1999 TIME: 5:22 PM PCP: S:\HOOD\PCP\FRP.PCP



LEGEND

-  MAJOR ROADS
-  RIVERS/STREAMS
-  WATER BODIES
-  BACKGROUND SOIL SAMPLE LOCATION

U.S. ARMY
FORT HOOD, TEXAS

RCRA FACILITY INVESTIGATION

LOCATIONS OF
BACKGROUND SOIL SAMPLES



Science Applications
International Corporation Columbus, Ohio

DRAWN SC	CHECKED	DATE	SCALE 1"=5000M	PROJECT NO.	FIGURE NO. 4.2
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Samples were analyzed for the following metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. There were only 40 valid background sample results for selenium due to quality assurance/quality control (QA/QC) problems with the selenium data. A discussion of the data QA/QC is presented in Section 6.1. Mercury, selenium, and silver were not detected in any of the background surface soil samples. Mercury was detected in only 1 of 43 subsurface soil samples and selenium in 2 of 40 background subsurface samples. Silver was not detected in any background subsurface soil samples.

Two statistical methods presented in the RFI Work Plan can be used to determine if there is a statistically significant difference between background soil concentrations and the concentrations of metals detected in SWMU samples. The flow chart from the Final RCRA Facility Investigation Work Plan for 35 SWMUs (USACE 1995) used for the statistical evaluations is provided in Appendix D. Background statistical calculations were determined by combining metals results from surface soils (0-2 ft) and subsurface soils (>2 ft) into one background data set. The statistical methods used to evaluate the background soil results are presented in Section 6 of the Final RCRA Facility Investigation Work Plan (USACE 1995). The methods include (1) a 95% upper tolerance limit (UTL) calculation and (2) an overall data set mean background concentration.

The primary statistical method for screening data is to compare SWMU data to the respective background 95% UTL values. The 95% UTL is an estimate of the 95th percentile of the population of background concentrations such that, with a high degree of confidence, 95% of all concentrations would be less than the UTL value. Results of the 95% UTL calculation are presented in Table 4.3. For inorganic parameters where there were less than 50% detects, and the distribution was neither normal nor lognormal, the maximum detected concentration was used in place of the 95% UTL. For inorganic parameters where there were no detects, the PQLs were used in place of the 95% UTLs as the background comparison value. The 95% UTL background value for soils was used as the primary background screening criteria for inorganics. Appendix D contains spreadsheets that verify the Shapiro Wilk test on the background data for distribution, and results of the 95% UTL calculations for the background data.

No background data set is available to further evaluate concentrations of metals in pond sediments (saturated sediments), however, if a metal was detected in dry sediment at FH-029 at a concentration greater than the 95% UTL soil background value, a second statistical method was performed to compare the data set to the background value. The second statistical method to be used is either a mean comparison using the t-test, or the Wilcoxon (Mann-Whitney) Test. The use of these tests is dependent on the distribution of the data set. The t-test is to be used on data sets that have a normal distribution or that can be transformed to a normal distribution. According to the RFI Work Plan (USACE 1995), if the data set is not normally distributed and the t-test is not appropriate, a nonparametric method, the Wilcoxon Test, is to be used to test the difference in the background versus the data set. The flow chart from the RFI Work Plan (USACE 1995) used for the statistical evaluations is provided in Appendix D. Results of calculations for the 95% UTLs, means, standard deviations, and the Wilcoxon Test for FH-029 data are also presented in Appendix D.

Cadmium, chromium and lead were detected in dry sediment at FH-029 at concentrations greater than the 95% UTL soil background concentration, therefore, further statistical analysis was performed for these metals. The Wilcoxon Test for cadmium and lead detected in dry sediment at FH-029 resulted in absolute Z values of 4.96 and 2.31, respectively, versus the critical Z value of 1.645 for a one-tailed test. This indicates there is a significant difference between the background soil cadmium and lead data and FH-029 dry sediment cadmium and lead data. The Wilcoxon Test for chromium detected in dry sediment at FH-029 resulted in an absolute Z value of 1.59 versus the critical Z value of 1.645. This indicates there is no significant difference between the background soil data for chromium and FH-029 dry sediment data for this metal. Further discussion of statistical results is included in Section 6.2 (Investigation Results) of this report.

**Table 4.3 Statistical Analysis of 95% UTL Concentrations
Background Soils**

Analyte (units)	Mean	95% UTL	Maximum Detect	Results > PQL	Distribution
Arsenic (mg/kg)	4.3500	9.19	11.6	43/43	N
Barium (mg/kg)	30.19	157.3	155.0	43/43	L
Cadmium (mg/kg)	0.15	0.67	0.79	36/44	L
Chromium (mg/kg)	7.32	24.88	23.6	44/44	L
Lead (mg/kg)	5.77	19.0	33.20	44/44	L
Mercury (mg/kg)	0.0400	0.04*	0.04	1/44	D
Selenium (mg/kg)	0.345	0.44*	0.44	2/40	D
Silver (mg/kg)	0.218	**	ND	0/44	D

Results less than the detection limit were set to 2 the reported detection limit.

L-distribution most similar to lognormal.

N-distribution most similar to normal.

D-distribution not determined because fewer than five detects or less than 50% detects.

*UTL -maximum detected

** the 95% UTL could not be calculated due to no detects in the background data set, therefore, the PQL will be used as the background comparison value.

ND - Not Detected

5.0 SCREENING ANALYSIS

The Texas Natural Resource Conservation Commission (TNRCC) has promulgated risk reduction standards (RRSs [30 TAC 335, Subchapter S]) for soils and groundwater for residential and industrial land uses. The TNRCC RRSs have been used to screen the data generated at FH-029 to determine whether or not constituents are present at the site at concentrations which may warrant further investigation. Comparisons to TNRCC RRS criteria are shown in Tables 5.1 and 5.2. The complete screening results for FH-029 are compiled in Appendix E.

The TNRCC RRSs Number 1 are defined as UTL background concentrations or analytical PQLs, whichever are greater. The TNRCC RRSs Number 1 were used to determine if there has been a release of hazardous constituents from the site. The TNRCC RRS Number 1 criteria are the facility-wide 95% UTL soil background values for metals (except for mercury, selenium, and silver, which were not detected in background soils), or the PQLs, for organic constituents or metals not detected in background samples. To determine whether there has been a release at FH-029, dry sediment (ditch sediment) sample results were compared to the 95% UTL background concentration levels for combined surface and subsurface soils (TNRCC RRS Number 1 criteria for metals in soils). Metals detected above background levels are considered a potential release from the unit. Detections of organic constituents above the analytical PQL are considered a potential release. In surface water, all detections above PQLs are considered a potential release. Organic and inorganic constituents detected above PQLs in sediment and surface water samples at FH-029 have been presented in Tables 4.1 and 4.2, and discussed in Sections 4.2.1 and 4.2.2, respectively. Comparisons to the 95% UTL background concentration levels (TNRCC RRS Number 1 criteria) for metals in dry sediment (ditch sediment) are shown in Table 5.1.

To determine if potential releases of metals and organics detected at FH-029 warrant further action, sample results that exceeded the TNRCC RRS Number 1 were screened against the TNRCC RRS Number 2 criteria. TNRCC RRS Number 2 criteria are health-based standards and criteria that are deemed protective of human health or the environment. They are based on an ingestion of soil and inhalation of particulates and volatiles pathway and a soil-to-groundwater cross-media protection pathway. No additional risk criteria are available to further evaluate metals detected in dry sediment above the 95% UTL soil background concentration levels (TNRCC RRSs Number 1), however if the concentration of a metal in dry sediment exceeds the 95% UTL soil background concentration, further statistical analyses are performed to determine if the metal is present at concentrations which are significantly different from the background concentration. If statistical analysis shows that metal concentrations are not significantly different from background concentrations then a release is not considered to have occurred. Statistical analyses performed may include the T-Test or the Wilcoxon Test.

Saturated sediments (pond sediments) were compared to TNRCC RRS Number 2 benchmark sediment values. For surface water, the TNRCC RRS Number 2 criteria are the 30 TAC 335 groundwater criteria. Comparisons to TNRCC RRS Number 1 criteria (metals in dry sediment) and TNRCC RRS Number 2 criteria (organics in dry sediment, and organics and inorganics in saturated sediment and surface water) are shown in Tables 5.1 and 5.2, respectively. The complete screening results for FH-029 are compiled in Appendix E. In Tables 5.1 and 5.2, as well as in Appendix E, no TNRCC RRS Number 2 screening values are available for parameters whose screening concentrations are signified by a value of zero.

In dry ditch sediments, cadmium, chromium, and lead were present above soil background concentrations. Cadmium was present above the soil background value in seven samples. Chromium and lead exceeded the background values in SD111 only. In saturated pond sediments (SD121 and SD122), barium and cadmium were present at concentrations that exceed the sediment benchmark values.

Further evaluation of the three metals detected above soil background concentrations in dry sediments was

performed using the Wilcoxon Test. Results of this evaluation indicate that concentrations of chromium at FH-029 are not significantly different from background chromium concentrations, however, cadmium and lead concentrations at FH-029 are significantly different than background soil concentrations. Lead and chromium were both detected in only one sample (SD111) located near an oil/water separator, which is not in the immediate vicinity of Lake Henry (see Figure 4.1). Both of these metals reach nondetectable limits in both sediment and surface water prior to reaching the inlet of Lake Henry.

Cadmium was detected in five sediment samples (dry and saturated) collected in the immediate vicinity of Lake Henry at concentrations exceeding RRS Number 2 risk criteria. Most notably, cadmium is present in dry sediment in the outlet drainage of Lake Henry at a concentration (1.1 ppm) above the soil background value (0.67 ppm).

2-Butanone, acetone, bis(2-ethylhexyl)phthalate, and methylene chloride are also present at concentrations greater than the benchmark values in the two pond sediment samples. These analytes are not known to be associated with any waste disposal practice at FH-029, and are common artifacts of laboratory analyses. In SD111, 1,2,4- and 1,3,5-trimethylbenzene, as well as bis(2-ethylhexyl)phthalate, were present above the 30 TAC 335 industrial soil criteria. In addition, a PAH, benzo(b)fluoranthene, was present in this sample above the industrial soil criteria. PAHs have been found to be widely dispersed across industrial and other facilities by the combustion of petroleum products, open burning, and incineration (see Appendix F).

In surface water collected from the drainage ditches, cadmium and lead were identified at concentrations greater than the TNRCC RRS Number 2 criteria in several samples. Both were found in SW102, SW109, SW113, and SW128. Cadmium alone was present above the risk criterion at SW108, SW112, SW115, SW125, and SW126. Cadmium and lead concentrations in Lake Henry surface water samples were below the risk criteria.

Surface water samples from fifteen locations exhibited at least one VOC at concentrations above the TNRCC RRS Number 2 criteria. Only one VOC (either 4-methyl-2-pentanone, 1,2,4-trimethylbenzene, p-isopropyltoluene, or chloromethane) was present above the screening criteria in SW102, SW105, SW107, SW109, SW115, SW120, and SW126. 1,2,4-Trimethylbenzene and 1,3,5-trimethylbenzene exceeded the 30 TAC 335 groundwater criteria in SW016, SW108, and SW118. 1,2,4-Trimethylbenzene and other compounds were above the risk criteria at SW109, SW112, SW113, SW117, SW126, SW127, and SW128. Among the SVOCs, bis(2-ethylhexyl)phthalate, 2-methylnaphthalene, and benzyl alcohol were present above the risk values in four locations (SW102, SW106, SW112, and SW118). No VOCs or SVOCs were detected in surface water samples from Lake Henry or its outlet ditch. It should be noted that most of these organics (4-methyl-2-pentanone, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, p-isopropyltoluene, chloromethane, 2-methylnaphthalene, and benzyl alcohol) are considered to be present above screening criteria because no TNRCC RRS Number 2 screening values exist for these constituents. Screening values cannot be calculated for these constituents because no toxicity criteria exists that are necessary to calculate the RRS 2 values.

Table 5.1 FH-029 Sediment Analytes Above Screening Criteria

Location	Sample ID	Depth	Parameter	Result	Units	Screening Criteria	Screening Concentration	Units
SW105	29SD105	--	Cadmium	0.83	mg/kg	Soil Background	0.67	mg/kg
SW107	29SD107	--	Cadmium	2.9	mg/kg	Soil Background	0.67	mg/kg
SW111	29SD111	--	1,2,4-trimethylbenzene	0.024	mg/kg	30 TAC 335 Industrial Soil GWP	0.0	mg/kg
			1,3,5-trimethylbenzene	0.015	mg/kg	30 TAC 335 Industrial Soil GWP	0.0	mg/kg
			Benzo(b)fluoranthene	3.3	mg/kg	30 TAC 335 Industrial Soil GWP	0.0	mg/kg
			Bis(2-ethylhexyl)phthalate	12	mg/kg	30 TAC 335 Industrial Soil GWP	2.04	mg/kg
			Cadmium	41.7	mg/kg	Soil Background	0.67	mg/kg
			Chromium	29.5	mg/kg	Soil Background	24.9	mg/kg
			Lead	118	mg/kg	Soil Background	19	mg/kg
SW118	29SD118	--	Cadmium	2.9	mg/kg	Soil Background	0.67	mg/kg
SW121	29SD121	--	2-Butanone	0.061	mg/kg	Sediment Benchmarks	0.0	mg/kg
			Acetone	0.18	mg/kg	Sediment Benchmarks	0.0	mg/kg
			Barium	66.4	mg/kg	Sediment Benchmarks	0.0	mg/kg
			Bis(2-ethylhexyl)phthalate	1	mg/kg	Sediment Benchmarks	0.182	mg/kg
			Cadmium	0.72	B mg/kg	Sediment Benchmarks	0.6	mg/kg
			Methylene Chloride	0.022	mg/kg	Sediment Benchmarks	0.0	mg/kg
SW122	29SD122	--	2-Butanone	0.01	mg/kg	Sediment Benchmarks	0.0	mg/kg
			Acetone	0.065	mg/kg	Sediment Benchmarks	0.0	mg/kg
			Barium	38.8	mg/kg	Sediment Benchmarks	0.0	mg/kg
			Bis(2-ethylhexyl)phthalate	0.93	mg/kg	Sediment Benchmarks	0.182	mg/kg

Table 5.1 FH-029 Sediment Analytes Above Screening Criteria

Location	Sample ID	Depth	Parameter	Result	Units	Screening Criteria	Screening Concentration	Units
SW122	29SD122	--	Cadmium	0.62 B	mg/kg	Sediment Benchmarks	0.6	mg/kg
SW123	29SD123	--	Cadmium	2.3	mg/kg	Soil Background	0.67	mg/kg
SW124	29SD124	--	Cadmium	1.4	mg/kg	Soil Background	0.67	mg/kg
SW125	29SD125	--	Cadmium	1.1	mg/kg	Soil Background	0.67	mg/kg

B (Inorganics) - Value was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).

B (Organics) - Constituent detected in associated blank sample

Table 5.2 FH-029 Surface Water Analytes Above Screening Criteria

Location	Sample ID	Depth	Parameter	Result	Units	Screening Criteria	Screening Concentration	Units
SW102	29SW102	--	Bis(2-ethylhexyl)phthalate	0.011	mg/l	30 TAC 335 Groundwater	0.00608	mg/l
			Cadmium	0.022	mg/l	30 TAC 335 Groundwater	0.005	mg/l
			Lead	0.0223	mg/l	30 TAC 335 Groundwater	0.015	mg/l
			p-Isopropyltoluene	0.019	mg/l	30 TAC 335 Groundwater	0.0	mg/l
SW105	29SW105	--	4-Methyl-2-pentanone	0.008	mg/l	30 TAC 335 Groundwater	0.0	mg/l
SW106	29SW106	--	1,2,4-trimethylbenzene	0.034	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			1,3,5-trimethylbenzene	0.006	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			2-Methylnaphthalene	0.017	mg/l	30 TAC 335 Groundwater	0.0	mg/l
SW107	29SW107	--	Chloromethane	0.01	mg/l	30 TAC 335 Groundwater	0.0	mg/l
SW108	29SW108	--	1,2,4-trimethylbenzene	0.032	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			1,3,5-trimethylbenzene	0.009	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			Cadmium	0.0167	mg/l	30 TAC 335 Groundwater	0.005	mg/l
SW109	29SW109	--	1,2,4-trimethylbenzene	0.007	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			Cadmium	0.0403	mg/l	30 TAC 335 Groundwater	0.005	mg/l
			Lead	0.0413	mg/l	30 TAC 335 Groundwater	0.015	mg/l
SW112	29SW112	--	1,2,4-trimethylbenzene	0.062	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			4-Methyl-2-pentanone	0.18	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			Benzyl Alcohol	0.02	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			Cadmium	0.019	mg/l	30 TAC 335 Groundwater	0.005	mg/l
SW113	29SW113	--	1,2,4-trimethylbenzene	0.016	mg/l	30 TAC 335 Groundwater	0.0	mg/l

Table 5.2 FH-029 Surface Water Analytes Above Screening Criteria

Location	Sample ID	Depth	Parameter	Result	Units	Screening Criteria	Screening Concentration	Units
SW113	29SW113	--	4-Methyl-2-pentanone	0.011	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			Cadmium	0.0208	mg/l	30 TAC 335 Groundwater	0.005	mg/l
			Lead	0.0264	mg/l	30 TAC 335 Groundwater	0.015	mg/l
SW115	29SW115	--	Cadmium	0.0077	mg/l	30 TAC 335 Groundwater	0.005	mg/l
			p-Isopropyltoluene	0.01	mg/l	30 TAC 335 Groundwater	0.0	mg/l
SW117	29SW117	--	1,2,4-trimethylbenzene	0.038	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			Trichloroethene	0.009	mg/l	30 TAC 335 Groundwater	0.005	mg/l
SW118	29SW118	--	1,2,4-trimethylbenzene	0.022	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			1,3,5-trimethylbenzene	0.007	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			Bis(2-ethylhexyl)phthalate	0.021	mg/l	30 TAC 335 Groundwater	0.00608	mg/l
SW120	29SW120	--	4-Methyl-2-pentanone	0.013	mg/l	30 TAC 335 Groundwater	0.0	mg/l
SW126	29SW126	--	1,2,4-trimethylbenzene	0.036	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			Cadmium	0.0064	mg/l	30 TAC 335 Groundwater	0.005	mg/l
SW127	29SW127	--	1,2,4-trimethylbenzene	0.044	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			4-Methyl-2-pentanone	0.01	mg/l	30 TAC 335 Groundwater	0.0	mg/l
SW128	29SW128	--	1,2,4-trimethylbenzene	0.008	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			4-Methyl-2-pentanone	0.045	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			Cadmium	0.0241	mg/l	30 TAC 335 Groundwater	0.005	mg/l
			Lead	0.0177	mg/l	30 TAC 335 Groundwater	0.015	mg/l

6.0 INVESTIGATION ANALYSIS

6.1 DATA QUALITY ASSURANCE/QUALITY CONTROL

The Fort Hood RFI Work Plan, the contract laboratory's Quality Assurance Plan, and U.S. Environmental Protection Agency (USEPA) SW-846 or other approved procedures for analytical chemistry and physical testing methods were followed for field and laboratory quality assurance/quality control (QA/QC) of FH-029 samples.

According to the Work Plan, QA and QC samples were to be collected at a frequency of ten percent overall and analyzed along with the environmental samples. Field duplicate (QC) and split (QA) samples were collected at FH-029. Quality control analyses such as matrix spikes, blanks, and laboratory control samples were conducted by the contract laboratory as an internal control measure of the accuracy and precision of the data. Quality assurance sample analyses were performed by the Army Corps of Engineers-Southwest District Laboratory as an external control measure of the accuracy and precision of the contract laboratory's results and of sampling procedures. The QA/QC and corresponding field sample results are reviewed by Army Corps of Engineers quality assurance personnel, who then issue a Chemical Quality Assessment Report (CQAR).

Laboratory QC procedures as prescribed by each analytical method were followed by the contract laboratory and included, where applicable: gas chromatography/mass spectrometry (GC/MS) tuning, initial and continuing calibrations, method/extraction blanks, laboratory control samples (LCS), surrogate spikes, internal and external standards, duplicates, matrix spikes/matrix spike duplicates (MS/MSDs), inductively coupled plasma (ICP) and atomic absorption (AA) related QC procedures/samples, and spiked sample clean-up results.

The CQAR addressed concerns with the FH-029 data. One issue was the potential for false negatives for several VOCs in both surface water and sediment. Another was the potential for false positives and high variability in four volatile compounds in the sediment samples SD116 and SD118. There was a potential for low bias in the data for chromium and lead in the sediments. The deviations did not lead to the rejection or requalification of the data. Based on the CQAR findings, data are usable and have met the project data quality objectives (DQOs).

Data QA/QC procedures included an independent data validation of ten percent of the results for compliance of analyses to DQOs. All FH-029 data that were reviewed for data validation met project DQOs and are usable data as qualified, with the exception of selenium results for 10 background soil samples (2 surface and 8 subsurface). The selenium results were rejected due to unacceptable matrix spike recoveries and were excluded from background calculations. The rejected background data had no impact on the FH-029 results.

6.2 INVESTIGATION RESULTS

The data set for surface water and sediments at FH-029 and the quality of the data are useable to meet the objectives of the RFI as described in Section 1.2 of this report. A total of 27 surface water and 15 sediment samples were collected from the ditches and Lake Henry, and analyzed according to the Final RCRA Facility Investigation Work Plan for 35 SWMUs (USACE 1995). The number and location of the samples were adequate to provide information regarding the presence/absence of contamination, the characterization of the vertical and lateral extent of potential contamination, and the potential risks to human health.

Results of the analysis of surface water and sediment at FH-029 indicate the following. The two sediment samples in the pond contain barium, cadmium, acetone, 2-butanone, and bis(2-ethylhexyl)phthalate in concentrations exceeding the risk criteria. One of these samples also has methylene chloride at a concentration greater than the risk value. Sediment collected at the outlet from Lake Henry had only cadmium at a

concentration (1.1 ppm) above the risk criterion of 0.67 ppm. The organic compounds identified above risk criteria in pond sediments are known to be common laboratory analytical artifacts, and as such are not contributing to risk at FH-029.

Sediment from one location north of North Avenue (SD111) showed concentrations of several organics, as well as cadmium, chromium and lead above risk criteria. This location is not in the immediate vicinity of Lake Henry (see Figure 4.1), and concentrations of both chromium and lead reach nondetectable limits in both sediment and surface water prior to reaching the inlet of Lake Henry. In addition, results of statistical evaluations indicate that concentrations of chromium in dry sediment at FH-029 are not significantly different from background chromium concentrations. However, cadmium and lead concentrations in dry sediment at FH-029 are significantly different than background soil concentrations. Although lead concentrations are significantly different than background soil concentrations, this constituent was only detected above risk criteria in one sample near an oil/water separator which is not in the immediate vicinity of Lake Henry.

Sediments in the ditches north of North Avenue and immediately surrounding Lake Henry exhibited cadmium at concentrations exceeding the risk values. Cadmium concentrations in these samples range from 0.83 ppm to 2.9 ppm and are significantly different from cadmium background concentrations. Cadmium in the ditches is evidently contributing to the cadmium occurrences in the sediment at Lake Henry and its outlet drainage.

Surface water from the ditches exceeds risk criteria for VOCs, SVOCs, and metals in several locations. These occurrences come from lined and unlined receiving ditches located along North Avenue which discharge to Lake Henry. However, surface water quality at Lake Henry does not appear to be affected by these contaminants entering the lake. Concentrations of VOCs, SVOCs and metals in surface water diminish to undetectable quantities by the time they reach Lake Henry (see Figure 4.1), and are not present in surface water exiting the pond. The analytical screening results indicate that the local drainage ditches and Lake Henry are operating as intended and are removing contaminants from surface water prior to discharge to Lake C. As such, surface water exiting Lake Henry to Lake C is not causing a release to the environment via the surface water pathway.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The analytical results indicate that unit FH-029 has experienced contamination of trace metals and organic compounds resulting from activities at 11 vehicle wash racks, and from storm water runoff from roadways and motor pools along North Avenue.

Surface water analyses indicate that the occurrences of organic compounds, cadmium, and lead above RRS Number 2 criteria come from samples from the ditches along and north of North Avenue. Since activities at the motor pools and vehicle wash racks in FH-029 are ongoing, these sources will continue to cause releases of these constituents until Fort Hood is closed. Organics observed above risk criteria in the surface water are transient, and are detected at low concentrations which do not greatly exceed risk criteria. Surface water constituents evaluated in drainage ditches for this RFI are likely to be representative of transient conditions in any given motor pool or wash rack area for a given day. Residence time for surface water in ditches is almost zero, and the composition of the effluent water may change depending on what cleaning activities are being performed in the wash rack areas. Sediments in drainage ditches may possess chemical constituents only from the recent past, since residence time for sediments in the ditches is likely to be short.

No organic constituents were present above PQLs in surface water collected from Lake Henry and its outlet drainage. These surface water samples also exhibited no inorganic constituents at concentrations above the risk criteria. These results indicate that water collected from the ditches and exiting the pond is not causing a release to the environment via the surface water pathway.

Organic solvents and inorganics found in the sediment in the ditches in FH-029 are evidently caused by activities in the motor pools and vehicle wash racks that line North Avenue. Several of the organic contaminants identified as exceeding the risk criteria are known laboratory artifacts that are unrelated to processes at the SWMU. The releases of cadmium and lead from the motor pools are clearly causing contaminant loading to Lake Henry sediments. The source of heavy metals may be the motor pools and vehicle wash racks, or atmospheric deposition of vehicle exhaust along the heavily traveled North Avenue. Concentrations of organics above risk criteria in Lake Henry sediment are less than 1 ppm which indicates that the concentrations of organics do not greatly exceed risk criteria.

Additionally, no native soil samples were collected beneath lake sediments at FH-029, however, soil sampling of native soil conducted at FH-027 and FH-028 indicated no release to soil from these units. Since the operation of these units is similar to that of FH-029, results of native soil sampling at FH-027 and FH-028 provide a representative determination that a release of contaminants to native soil at FH-029 has not occurred.

In summary, the ditches and the pond constitute a properly functioning treatment unit used to remove contaminants prior to discharge to the receiving stream. There being no release of contaminants from Lake Henry via the surface water pathway, and no current exposure to Lake Henry sediments, no further action is recommended for FH-029 at this time. However, if this unit undergoes closure activities in the future, dredging of the pond and removal of the sediment would be the most likely remedial action. This would promote exposure to constituents in pond sediment and raise concern about releasing these constituents to the outlet drainage of the pond. The current operation of the pond does not pose a risk to human health and the environment, however, risks associated with any future closure of the unit will need to be identified prior to implementation of closure activities.

8.0 REFERENCES

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APPENDIX A

FH-029 Sediment and Surface Water Analytical Results

APPENDIX A

FH-029 Sediment and Surface Water Analytical Results

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD101

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) SOIL

Lab Sample ID: 27758.44

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 000514.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 12 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 8.0

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.

COMPOUND

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl) ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
100-51-6	Benzyl alcohol	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	bis(2-Chloroisopropyl) ether	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
65-85-0	Benzoic Acid	1800	U
111-91-1	bis(2-Chloroethoxy) methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD101

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) SOIL

Lab Sample ID: 27758.44

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 000514.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 12 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 8.0

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.

COMPOUND

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2-----	3-Nitroaniline	1800	U
83-32-9-----	Acenaphthene	380	U
121-14-2-----	2,4-Dinitrotoluene	380	U
51-28-5-----	2,4-Dinitrophenol	1800	U
100-02-7-----	4-Nitrophenol	1800	U
132-64-9-----	Dibenzofuran	380	U
84-66-2-----	Diethylphthalate	380	U
7005-72-3-----	4-Chlorophenyl-phenylether	380	U
86-73-7-----	Fluorene	380	U
100-01-6-----	4-Nitroaniline	1800	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1800	U
86-30-6-----	N-Nitrosodiphenylamine (1)	380	U
101-55-3-----	4-Bromophenylphenylether	380	U
118-74-1-----	Hexachlorobenzene	380	U
87-86-5-----	Pentachlorophenol	1800	U
85-01-8-----	Phenanthrene	380	U
120-12-7-----	Anthracene	380	U
84-74-2-----	Di-n-butylphthalate	380	U
206-44-0-----	Fluoranthene	380	U
129-00-0-----	Pyrene	380	U
85-68-7-----	Butylbenzylphthalate	380	U
91-94-1-----	3,3'-Dichlorobenzidine	750	U
56-55-3-----	Benzo(a)anthracene	380	U
218-01-9-----	Chrysene	380	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	40	JB
117-84-0-----	Di-n-octylphthalate	380	U
205-99-2-----	Benzo(b)fluoranthene	380	U
207-08-9-----	Benzo(k)fluoranthene	380	U
50-32-8-----	Benzo(a)pyrene	380	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	380	U
53-70-3-----	Dibenz(a,h)anthracene	380	U
191-24-2-----	Benzo(g,h,i)perylene	380	U
110-86-1-----	Pyridine	380	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD101RE

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) SOIL

Lab Sample ID: 27758.44RA

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 000538.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 12 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 8.0

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-94-3-----	1,2,4,5-Tetrachlorobenzene	380	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD105

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27685

Matrix: (soil/water) SOIL

Lab Sample ID: 27685.15

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: I22424.D

Level: (low/med) LOW

Date Received: 11/19/96

% Moisture: not dec. 26

Date Analyzed: 11/26/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	UG/KG	Q
96-18-4-----1 2 3-	TRICHLOROPROPANE	7	U
75-71-8-----	DICHLORODIFLUOROMETHANE	7	U
75-69-4-----	TRICHLOROFLUOROMETHANE	7	U
74-95-3-----	DIBROMOMETHANE	7	U
96-12-8-----1 2-	DIBROMO-3-CHLOROPROPANE	7	U
108-86-1-----	BROMOBENZENE	7	U
104-51-8-----n-	BUTYLBENZENE	7	U
98-06-6-----tert-	BUTYLBENZENE	7	U
135-98-8-----sec-	BUTYLBENZENE	7	U
95-49-8-----2-	CHLOROTOLUENE	7	U
106-43-4-----4-	CHLOROTOLUENE	7	U
95-50-1-----1 2-	DICHLORO BENZENE	7	U
541-73-1-----1 3-	DICHLORO BENZENE	7	U
106-46-7-----1 4-	DICHLORO BENZENE	7	U
142-28-9-----1 2-	DICHLOROPROPANE	7	U
594-20-7-----2 2-	DICHLOROPROPANE	7	U
563-58-6-----1 1-	DICHLOROPROPENE	7	U
87-68-3-----	HEXACHLOROBUTADIENE	7	U
98-82-8-----	ISOPROPYLBENZENE	7	U
99-87-6-----p-	ISOPROPYLTOLUENE	7	U
91-20-3-----	NAPHTHALENE	7	U
103-65-1-----n-	PROPYLBENZENE	7	U
87-61-6-----1 2 3-	TRICHLORO BENZENE	7	U
120-82-1-----1 2 4-	TRICHLORO BENZENE	7	U
95-63-6-----1 2 4-	TRIMETHYLBENZENE	7	U
108-67-8-----1 3 5-	TRIMETHYLBENZENE	7	U
74-97-5-----	BROMOCHLOROMETHANE	7	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD107

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27685

Matrix: (soil/water) SOIL

Lab Sample ID: 27685.16

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: I22425.D

Level: (low/med) LOW

Date Received: 11/19/96

% Moisture: not dec. 25

Date Analyzed: 11/26/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	7	U
96-18-4-----1 2 3-TRICHLOROPROPANE		7	U
75-71-8-----DICHLORODIFLUOROMETHANE		7	U
75-69-4-----TRICHLOROFLUOROMETHANE		7	U
74-95-3-----DIBROMOMETHANE		7	U
96-12-8-----1 2-DIBROMO-3-CHLOROPROPANE		7	U
108-86-1-----BROMOBENZENE		7	U
104-51-8-----n-BUTYLBENZENE		7	U
98-06-6-----tert-BUTYLBENZENE		7	U
135-98-8-----sec-BUTYLBENZENE		7	U
95-49-8-----2-CHLOROTOLUENE		7	U
106-43-4-----4-CHLOROTOLUENE		7	U
95-50-1-----1 2-DICHLOROBENZENE		7	U
541-73-1-----1 3-DICHLOROBENZENE		7	U
106-46-7-----1 4-DICHLOROBENZENE		7	U
142-28-9-----1 3-DICHLOROPROPANE		7	U
594-20-7-----2 2-DICHLOROPROPANE		7	U
563-58-6-----1 1-DICHLOROPROPENE		7	U
87-68-3-----HEXACHLOROBUTADIENE		7	U
98-82-8-----ISOPROPYLBENZENE		7	U
99-87-6-----p-ISOPROPYLTOLUENE		7	U
91-20-3-----NAPHTHALENE		7	U
103-65-1-----n-PROPYLBENZENE		7	U
87-61-6-----1 2 3-TRICHLOROBENZENE		7	U
120-82-1-----1 2 4-TRICHLOROBENZENE		7	U
95-63-6-----1 2 4-TRIMETHYLBENZENE		7	U
108-67-8-----1 3 5-TRIMETHYLBENZENE		7	U
74-97-5-----BROMOCHLOROMETHANE		7	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD107RE

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27685

Matrix: (soil/water) SOIL

Lab Sample ID: 27685.16RA

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: I22446.D

Level: (low/med) LOW

Date Received: 11/19/96

% Moisture: not dec. 25

Date Analyzed: 11/27/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	7	U
74-83-9	BROMOMETHANE	7	U
75-01-4	VINYL CHLORIDE	7	U
75-00-3	CHLOROETHANE	7	U
75-09-2	METHYLENE CHLORIDE	9	U
67-64-1	ACETONE	18	B
75-35-4	1 1-DICHLOROETHENE	7	U
75-34-3	1 1-DICHLOROETHANE	7	U
67-66-3	CHLOROFORM	7	U
107-06-2	1 2-DICHLOROETHANE	7	U
78-93-3	2-BUTANONE	5	J
71-55-6	1 1 1-TRICHLOROETHANE	7	U
56-23-5	CARBON TETRACHLORIDE	7	U
75-27-4	BROMODICHLOROMETHANE	7	U
78-87-5	1 2-DICHLOROPROPANE	7	U
79-01-6	TRICHLOROETHENE	7	U
124-48-1	DIBROMOCHLOROMETHANE	7	U
79-00-5	1 1 2-TRICHLOROETHANE	7	U
71-43-2	BENZENE	7	U
75-25-2	BROMOFORM	7	U
108-10-1	4-METHYL-2-PENTANONE	7	U
591-78-6	2-HEXANONE	7	U
127-18-4	TETRACHLOROETHENE	7	U
108-88-3	TOLUENE	7	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	7	U
108-90-7	CHLOROBENZENE	7	U
100-41-4	ETHYL BENZENE	7	U
100-42-5	STYRENE	7	U
156-59-2	cis-1 2-DICHLOROETHENE	7	U
156-60-5	trans-1 2-DICHLOROETHENE	7	U
13-302-07	m,p-XYLENES	7	U
95-47-6	o-XYLENE	7	U
106-93-4	1 2-DIBROMOETHANE	7	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	7	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD107RE

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27685

Matrix: (soil/water) SOIL

Lab Sample ID: 27685.16RA

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: I22446.D

Level: (low/med) LOW

Date Received: 11/19/96

% Moisture: not dec. 25

Date Analyzed: 11/27/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.

COMPOUND

96-18-4-----1 2 3-TRICHLOROPROPANE	7	U
75-71-8-----DICHLORODIFLUOROMETHANE	7	UU
75-69-4-----TRICHLOROFLUOROMETHANE	7	UU
74-95-3-----DIBROMOMETHANE	7	UU
96-12-8-----1 2-DIBROMO-3-CHLOROPROPANE	7	UU
108-86-1-----BROMOBENZENE	7	UU
104-51-8-----n-BUTYLBENZENE	7	UU
98-06-6-----tert-BUTYLBENZENE	7	UU
135-98-8-----sec-BUTYLBENZENE	7	UU
95-49-8-----2-CHLOROTOLUENE	7	UU
106-43-4-----4-CHLOROTOLUENE	7	UU
95-50-1-----1 2-DICHLOROBENZENE	7	UU
541-73-1-----1 3-DICHLOROBENZENE	7	UU
106-46-7-----1 4-DICHLOROBENZENE	7	UU
142-28-9-----1 3-DICHLOROPROPANE	7	UU
594-20-7-----2 2-DICHLOROPROPANE	7	UU
563-58-6-----1 1-DICHLOROPROPENE	7	UU
87-68-3-----HEXACHLOROBUTADIENE	7	UU
98-82-8-----ISOPROPYLBENZENE	7	UU
99-87-6-----p-ISOPROPYLTOLUENE	7	UU
91-20-3-----NAPHTHALENE	7	UU
103-65-1-----n-PROPYLBENZENE	7	UU
87-61-6-----1 2 3-TRICHLOROBENZENE	7	UU
120-82-1-----1 2 4-TRICHLOROBENZENE	7	UU
95-63-6-----1 2 4-TRIMETHYLBENZENE	7	UU
108-67-8-----1 3 5-TRIMETHYLBENZENE	7	UU
74-97-5-----BROMOCHLOROMETHANE	7	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD107

b Name: SWL-TULSA Contract: FT HOOD

Lab Code: SWOK Case No.: SAIC SAS No.: SDG No.: 27685

Matrix: (soil/water) SOIL Lab Sample ID: 27685.16

Sample wt/vol: 30.0 (g/mL) G Lab File ID: M3645.D

Level: (low/med) LOW Date Received: 11/19/96

% Moisture: not dec. 25 dec. Date Extracted: 11/20/96

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N pH: 6.8 Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO. COMPOUND UG/KG Q

108-95-2	Phenol	440	U
111-44-4	bis(2-Chloroethyl) ether	440	U
95-57-8	2-Chlorophenol	440	U
541-73-1	1,3-Dichlorobenzene	440	U
106-46-7	1,4-Dichlorobenzene	440	U
100-51-6	Benzyl alcohol	440	U
95-50-1	1,2-Dichlorobenzene	440	U
95-48-7	2-Methylphenol	440	U
108-60-1	bis(2-Chloroisopropyl) ether	440	U
106-44-5	4-Methylphenol	440	U
621-64-7	N-Nitroso-di-n-propylamine	440	U
67-72-1	Hexachloroethane	440	U
98-95-3	Nitrobenzene	440	U
78-59-1	Isophorone	440	U
88-75-5	2-Nitrophenol	440	U
105-67-9	2,4-Dimethylphenol	440	U
65-85-0	Benzoic Acid	2100	U
111-91-1	bis(2-Chloroethoxy) methane	440	U
120-83-2	2,4-Dichlorophenol	440	U
120-82-1	1,2,4-Trichlorobenzene	440	U
91-20-3	Naphthalene	440	U
106-47-8	4-Chloroaniline	440	U
87-68-3	Hexachlorobutadiene	440	U
59-50-7	4-Chloro-3-methylphenol	440	U
91-57-6	2-Methylnaphthalene	440	U
77-47-4	Hexachlorocyclopentadiene	440	U
88-06-2	2,4,6-Trichlorophenol	440	U
95-95-4	2,4,5-Trichlorophenol	2100	U
91-58-7	2-Chloronaphthalene	440	U
88-74-4	2-Nitroaniline	2100	U
131-11-3	Dimethylphthalate	440	U
208-96-8	Acenaphthylene	440	U
606-20-2	2,6-Dinitrotoluene	440	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

29SD107

Job Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27685

Matrix: (soil/water) SOIL

Lab Sample ID: 27685.16

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: M3645.D

Level: (low/med) LOW

Date Received: 11/19/96

% Moisture: not dec. 25 dec.

Date Extracted: 11/20/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 6.8

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-94-3-----	1,2,4,5-Tetrachlorobenzene	440	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD110

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27685

Matrix: (soil/water) SOIL

Lab Sample ID: 27685.17

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: I22404.D

Level: (low/med) LOW

Date Received: 11/19/96

% Moisture: not dec. 15

Date Analyzed: 11/25/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
ug/L or ug/Kg UG/KG Q

CAS NO.	COMPOUND	CONCENTRATION UNITS:	UG/KG	Q
74-87-3	CHLOROMETHANE	6		U
74-83-9	BROMOMETHANE	6		U
75-01-4	VINYL CHLORIDE	6		U
75-00-3	CHLOROETHANE	6		U
75-09-2	METHYLENE CHLORIDE	6		U
67-64-1	ACETONE	3		JB
75-35-4	1 1-DICHLOROETHENE	6		U
75-34-3	1 1-DICHLOROETHANE	6		U
67-66-3	CHLOROFORM	6		U
107-06-2	1 2-DICHLOROETHANE	6		U
78-93-3	2-BUTANONE	6		U
71-55-6	1 1 1-TRICHLOROETHANE	6		U
56-23-5	CARBON TETRACHLORIDE	6		U
75-27-4	BROMODICHLOROMETHANE	6		U
78-87-5	1 2-DICHLOROPROPANE	6		U
79-01-6	TRICHLOROETHENE	6		U
124-48-1	DIBROMOCHLOROMETHANE	6		U
79-00-5	1 1 2-TRICHLOROETHANE	6		U
71-43-2	BENZENE	6		U
75-25-2	BROMOFORM	6		U
108-10-1	4-METHYL-2-PENTANONE	6		U
591-78-6	2-HEXANONE	6		U
127-18-4	TETRACHLOROETHENE	6		U
108-88-3	TOLUENE	6		U
79-34-5	1 1 2 2-TETRACHLOROETHANE	6		U
108-90-7	CHLOROBENZENE	6		U
100-41-4	ETHYL BENZENE	6		U
100-42-5	STYRENE	6		U
156-59-2	cis-1 2-DICHLOROETHENE	6		U
156-60-5	trans-1 2-DICHLOROETHENE	6		U
13-302-07	m,p-XYLENES	6		U
95-47-6	o-XYLENE	6		U
106-93-4	1 2-DIBROMOETHANE	6		U
630-20-6	1 1 1 2-TETRACHLOROETHANE	6		U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD110

Lab Name: SWL-TULSA	Contract: FT HOOD	
Lab Code: SWOK	Case No.: SAIC	SAS No.:
		SDG No.: 27685
Matrix: (soil/water) SOIL		Lab Sample ID: 27685.17
Sample wt/vol: 5.0 (g/mL) G		Lab File ID: I22404.D
Level: (low/med) LOW		Date Received: 11/19/96
% Moisture: not dec. 15		Date Analyzed: 11/25/96
Column: (pack/cap) CAP		Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Q
---------	----------	---

96-18-4-----1 2 3-TRICHLOROPROPANE	6	U
75-71-8-----DICHLORODIFLUOROMETHANE	6	U
75-69-4-----TRICHLOROFUOROMETHANE	6	U
74-95-3-----DIBROMOMETHANE	6	U
96-12-8-----1 2-DIBROMO-3-CHLOROPROPANE	6	U
108-86-1-----BROMOBENZENE	6	U
104-51-8-----n-BUTYLBENZENE	6	U
98-06-6-----tert-BUTYLBENZENE	6	U
135-98-8-----sec-BUTYLBENZENE	6	U
95-49-8-----2-CHLOROTOLUENE	6	U
106-43-4-----4-CHLOROTOLUENE	6	U
95-50-1-----1 2-DICHLOROBENZENE	6	U
541-73-1-----1 3-DICHLOROBENZENE	6	U
106-46-7-----1 4-DICHLOROBENZENE	6	U
142-28-9-----1 3-DICHLOROPROPANE	6	U
594-20-7-----2 2-DICHLOROPROPANE	6	U
563-58-6-----1 1-DICHLOROPROPENE	6	U
87-68-3-----HEXACHLOROBUTADIENE	6	U
98-82-8-----ISOPROPYLBENZENE	6	U
99-87-6-----p-ISOPROPYLTOLUENE	6	U
91-20-3-----NAPHTHALENE	6	U
103-65-1-----n-PROPYLBENZENE	6	U
87-61-6-----1 2 3-TRICHLOROBENZENE	6	U
120-82-1-----1 2 4-TRICHLOROBENZENE	6	U
95-63-6-----1 2 4-TRIMETHYLBENZENE	6	U
108-67-8-----1 3 5-TRIMETHYLBENZENE	6	U
74-97-5-----BROMOCHLOROMETHANE	6	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD110

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27685

Matrix: (soil/water) SOIL

Lab Sample ID: 27685.17

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: M3646.D

Level: (low/med) LOW

Date Received: 11/19/96

% Moisture: not dec. 15 dec.

Date Extracted: 11/20/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 6.8

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2-----	Phenol	390	U
111-44-4-----	bis(2-Chloroethyl) ether	390	U
95-57-8-----	2-Chlorophenol	390	U
541-73-1-----	1,3-Dichlorobenzene	390	U
106-46-7-----	1,4-Dichlorobenzene	390	U
100-51-6-----	Benzyl alcohol	390	U
95-50-1-----	1,2-Dichlorobenzene	390	U
95-48-7-----	2-Methylphenol	390	U
108-60-1-----	bis(2-Chloroisopropyl) ether	390	U
106-44-5-----	4-Methylphenol	390	U
621-64-7-----	N-Nitroso-di-n-propylamine	390	U
67-72-1-----	Hexachloroethane	390	U
98-95-3-----	Nitrobenzene	390	U
78-59-1-----	Isophorone	390	U
88-75-5-----	2-Nitrophenol	390	U
105-67-9-----	2,4-Dimethylphenol	390	U
65-85-0-----	Benzoic Acid	1900	U
111-91-1-----	bis(2-Chloroethoxy)methane	390	U
120-83-2-----	2,4-Dichlorophenol	390	U
120-82-1-----	1,2,4-Trichlorobenzene	390	U
91-20-3-----	Naphthalene	390	U
106-47-8-----	4-Chloroaniline	390	U
87-68-3-----	Hexachlorobutadiene	390	U
59-50-7-----	4-Chloro-3-methylphenol	390	U
91-57-6-----	2-Methylnaphthalene	390	U
77-47-4-----	Hexachlorocyclopentadiene	390	U
88-06-2-----	2,4,6-Trichlorophenol	390	U
95-95-4-----	2,4,5-Trichlorophenol	1900	U
91-58-7-----	2-Chloronaphthalene	390	U
88-74-4-----	2-Nitroaniline	1900	U
131-11-3-----	Dimethylphthalate	390	U
208-96-8-----	Acenaphthylene	390	U
606-20-2-----	2,6-Dinitrotoluene	390	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD110

b Name: SWL-TULSA Contract: FT HOOD
 Lab Code: SWOK Case No.: SAIC SAS No.: SDG No.: 27685
 Matrix: (soil/water) SOIL Lab Sample ID: 27685.17
 Sample wt/vol: 30.0 (g/mL) G Lab File ID: M3646.D
 Level: (low/med) LOW Date Received: 11/19/96
 % Moisture: not dec. 15 dec. Date Extracted: 11/20/96
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/09/96
 Concentrated Extract Volume: 1000(uL)
 GPC Cleanup: (Y/N) N pH: 6.8 Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO. COMPOUND UG/KG Q

99-09-2-----	3-Nitroaniline	1900	U
83-32-9-----	Acenaphthene	390	U
121-14-2-----	2,4-Dinitrotoluene	390	U
51-28-5-----	2,4-Dinitrophenol	1900	U
100-02-7-----	4-Nitrophenol	1900	U
132-64-9-----	Dibenzofuran	390	U
84-66-2-----	Diethylphthalate	390	U
7005-72-3-----	4-Chlorophenyl-phenylether	390	U
86-73-7-----	Fluorene	390	U
100-01-6-----	4-Nitroaniline	1900	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1900	U
86-30-6-----	N-Nitrosodiphenylamine (1)	390	U
101-55-3-----	4-Bromophenylphenylether	390	U
118-74-1-----	Hexachlorobenzene	390	U
87-86-5-----	Pentachlorophenol	1900	U
85-01-8-----	Phenanthrene	390	U
120-12-7-----	Anthracene	390	U
84-74-2-----	Di-n-butylphthalate	390	U
206-44-0-----	Fluoranthene	390	U
129-00-0-----	Pyrene	390	U
85-68-7-----	Butylbenzylphthalate	390	U
91-94-1-----	3,3'-Dichlorobenzidine	780	U
56-55-3-----	Benzo(a)anthracene	390	U
218-01-9-----	Chrysene	390	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	130	J
117-84-0-----	Di-n-octylphthalate	390	U
205-99-2-----	Benzo(b)fluoranthene	390	U
207-08-9-----	Benzo(k)fluoranthene	390	U
50-32-8-----	Benzo(a)pyrene	390	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	390	U
53-70-3-----	Dibenz(a,h)anthracene	390	U
191-24-2-----	Benzo(g,h,i)perylene	390	U
110-86-1-----	Pyridine	390	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD111

Lab Name: SWL-TULSA Contract: FT HOOD
 Lab Code: SWOK Case No.: SAIC SAS No.: SDG No.: 27685
 Matrix: (soil/water) SOIL Lab Sample ID: 27685.18
 Sample wt/vol: 5.0 (g/mL) G Lab File ID: I22407.D
 Level: (low/med) LOW Date Received: 11/19/96
 % Moisture: not dec. 47 Date Analyzed: 11/25/96
 Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Q
96-18-4-----1 2 3-TRICHLOROPROPANE		9 U
75-71-8-----DICHLORODIFLUOROMETHANE		9 U
75-69-4-----TRICHLOROFLUOROMETHANE		9 U
74-95-3-----DIBROMOMETHANE		9 U
96-12-8-----1 2-DIBROMO-3-CHLOROPROPANE		9 U
108-86-1-----BROMOBENZENE		9 U
104-51-8-----n-BUTYLBENZENE		9 U
98-06-6-----tert-BUTYLBENZENE		9 U
135-98-8-----sec-BUTYLBENZENE		9 U
95-49-8-----2-CHLOROTOLUENE		9 U
106-43-4-----4-CHLOROTOLUENE		9 U
95-50-1-----1 2-DICHLOROBENZENE		9 U
541-73-1-----1 3-DICHLOROBENZENE		9 U
106-46-7-----1 4-DICHLOROBENZENE		9 U
142-28-9-----1 3-DICHLOROPROPANE		9 U
594-20-7-----2 2-DICHLOROPROPANE		9 U
563-58-6-----1 1-DICHLOROPROPENE		9 U
87-68-3-----HEXACHLOROBUTADIENE		9 U
98-82-8-----ISOPROPYLBENZENE		9 U
99-87-6-----p-ISOPROPYLTOLUENE		9 U
91-20-3-----NAPHTHALENE		21 U
103-65-1-----n-PROPYLBENZENE		9 U
87-61-6-----1 2 3-TRICHLOROBENZENE		9 U
120-82-1-----1 2 4-TRICHLOROBENZENE		9 U
95-63-6-----1 2 4-TRIMETHYLBENZENE		24 U
108-67-8-----1 3 5-TRIMETHYLBENZENE		15 U
74-97-5-----BROMOCHLOROMETHANE		9 U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD111RE

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27685

Matrix: (soil/water) SOIL

Lab Sample ID: 27685.18RA

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: I22426.D

Level: (low/med) LOW

Date Received: 11/19/96

% Moisture: not dec. 47

Date Analyzed: 11/26/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Q
74-87-3	CHLOROMETHANE	9
74-83-9	BROMOMETHANE	9
75-01-4	VINYL CHLORIDE	9
75-00-3	CHLOROETHANE	9
75-09-2	METHYLENE CHLORIDE	9
67-64-1	ACETONE	11
75-35-4	1 1-DICHLOROETHENE	9
75-34-3	1 1-DICHLOROETHANE	9
67-66-3	CHLOROFORM	9
107-06-2	1 2-DICHLOROETHANE	9
78-93-3	2-BUTANONE	6
71-55-6	1 1 1-TRICHLOROETHANE	9
56-23-5	CARBON TETRACHLORIDE	9
75-27-4	BROMODICHLOROMETHANE	9
78-87-5	1 2-DICHLOROPROPANE	9
79-01-6	TRICHLOROETHENE	9
124-48-1	DIBROMOCHLOROMETHANE	9
79-00-5	1 1 2-TRICHLOROETHANE	9
71-43-2	BENZENE	9
75-25-2	BROMOFORM	9
108-10-1	4-METHYL-2-PENTANONE	9
591-78-6	2-HEXANONE	9
127-18-4	TETRACHLOROETHENE	9
108-88-3	TOLUENE	9
79-34-5	1 1 2 2-TETRACHLOROETHANE	9
108-90-7	CHLOROBENZENE	9
100-41-4	ETHYL BENZENE	9
100-42-5	STYRENE	9
156-59-2	cis-1 2-DICHLOROETHENE	9
156-60-5	trans-1 2-DICHLOROETHENE	9
13-302-07	m,p-XYLENES	12
95-47-6	o-XYLENE	5
106-93-4	1 2-DIBROMOETHANE	9
630-20-6	1 1 1 2-TETRACHLOROETHANE	9

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD111

b Name: SWL-TULSA Contract: FT HOOD

Lab Code: SWOK Case No.: SAIC SAS No.: SDG No.: 27685

Matrix: (soil/water) SOIL Lab Sample ID: 27685.18

Sample wt/vol: 30.0 (g/mL) G Lab File ID: M3648.D

Level: (low/med) LOW Date Received: 11/19/96

% Moisture: not dec. 47 dec. Date Extracted: 11/20/96

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO. COMPOUND UG/KG Q

99-09-2-----	3-Nitroaniline	3000	U
83-32-9-----	Acenaphthene	620	U
121-14-2-----	2,4-Dinitrotoluene	620	U
51-28-5-----	2,4-Dinitrophenol	3000	U
100-02-7-----	4-Nitrophenol	3000	U
132-64-9-----	Dibenzofuran	620	U
84-66-2-----	Diethylphthalate	620	U
7005-72-3-----	4-Chlorophenyl-phenylether	620	U
86-73-7-----	Fluorene	620	U
100-01-6-----	4-Nitroaniline	3000	U
534-52-1-----	4,6-Dinitro-2-methylphenol	3000	U
86-30-6-----	N-Nitrosodiphenylamine (1)	620	U
101-55-3-----	4-Bromophenylphenylether	620	U
118-74-1-----	Hexachlorobenzene	620	U
87-86-5-----	Pentachlorophenol	3000	U
85-01-8-----	Phenanthrene	620	U
120-12-7-----	Anthracene	620	U
84-74-2-----	Di-n-butylphthalate	620	U
206-44-0-----	Fluoranthene	180	J
129-00-0-----	Pyrene	170	J
85-68-7-----	Butylbenzylphthalate	620	U
91-94-1-----	3,3'-Dichlorobenzidine	1200	U
56-55-3-----	Benzo(a)anthracene	620	U
218-01-9-----	Chrysene	620	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	13000	E
117-84-0-----	Di-n-octylphthalate	2600	
205-99-2-----	Benzo(b)fluoranthene	3300	
207-08-9-----	Benzo(k)fluoranthene	620	U
50-32-8-----	Benzo(a)pyrene	620	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	620	U
53-70-3-----	Dibenz(a,h)anthracene	620	U
191-24-2-----	Benzo(g,h,i)perylene	620	U
110-86-1-----	Pyridine	620	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

29SD111

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27685

Matrix: (soil/water) SOIL

Lab Sample ID: 27685.18

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: M3648.D

Level: (low/med) LOW

Date Received: 11/19/96

% Moisture: not dec. 47 dec.

Date Extracted: 11/20/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.2

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-94-3-----	1,2,4,5-Tetrachlorobenzene	620	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD111DL

b Name: SWL-TULSA Contract: FT HOOD
 Lab Code: SWOK Case No.: SAIC SAS No.: SDG No.: 27685
 Matrix: (soil/water) SOIL Lab Sample ID: 27685.18DL
 Sample wt/vol: 30.0 (g/mL) G Lab File ID: M3712.D
 Level: (low/med) LOW Date Received: 11/19/96
 % Moisture: not dec. 47 dec. Date Extracted: 11/20/96
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/11/96
 Concentrated Extract Volume: 1000(uL)
 GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 2.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO. COMPOUND UG/KG Q

99-09-2	3-Nitroaniline	6000	U
83-32-9	Acenaphthene	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
51-28-5	2,4-Dinitrophenol	6000	U
100-02-7	4-Nitrophenol	6000	U
132-64-9	Dibenzofuran	1200	U
84-66-2	Diethylphthalate	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
86-73-7	Fluorene	1200	U
100-01-6	4-Nitroaniline	6000	U
534-52-1	4,6-Dinitro-2-methylphenol	6000	U
86-30-6	N-Nitrosodiphenylamine (1)	1200	U
101-55-3	4-Bromophenylphenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	6000	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	1200	U
206-44-0	Fluoranthene	120	JD
129-00-0	Pyrene	130	JD
85-68-7	Butylbenzylphthalate	1200	U
91-94-1	3,3'-Dichlorobenzidine	2500	U
56-55-3	Benzo(a)anthracene	1200	U
218-01-9	Chrysene	140	JD
117-81-7	bis(2-Ethylhexyl)phthalate	12000	D
117-84-0	Di-n-octylphthalate	2800	D
205-99-2	Benzo(b)fluoranthene	1200	U
207-08-9	Benzo(k)fluoranthene	1200	U
50-32-8	Benzo(a)pyrene	1200	U
193-39-5	Indeno(1,2,3-cd)pyrene	1200	U
53-70-3	Dibenz(a,h)anthracene	1200	U
191-24-2	Benzo(g,h,i)perylene	1200	U
110-86-1	Pyridine	1200	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD116

Lab Name: SWL-TULSA Contract: FT HOOD

Lab Code: SWOK Case No.: SAIC SAS No.: SDG No.: 27702

Matrix: (soil/water) SOIL Lab Sample ID: 27702.17

Sample wt/vol: 5.0 (g/mL) G Lab File ID: I22428.D

Level: (low/med) LOW Date Received: 11/20/96

% Moisture: not dec. 14 Date Analyzed: 11/26/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	UG/KG	Q
96-18-4-----	1 2 3-TRICHLOROPROPANE	6	U
75-71-8-----	DICHLORODIFLUOROMETHANE	6	U
75-69-4-----	TRICHLOROFLUOROMETHANE	6	U
74-95-3-----	DIBROMOMETHANE	6	U
96-12-8-----	1 2-DIBROMO-3-CHLOROPROPANE	6	U
108-86-1-----	BROMOBENZENE	6	U
104-51-8-----	n-BUTYLBENZENE	6	U
98-06-6-----	tert-BUTYLBENZENE	6	U
135-98-8-----	sec-BUTYLBENZENE	6	U
95-49-8-----	2-CHLOROTOLUENE	6	U
106-43-4-----	4-CHLOROTOLUENE	6	U
95-50-1-----	1 2-DICHLOROBENZENE	6	U
541-73-1-----	1 3-DICHLOROBENZENE	6	U
106-46-7-----	1 4-DICHLOROBENZENE	6	U
142-28-9-----	1 3-DICHLOROPROPANE	6	U
594-20-7-----	2 2-DICHLOROPROPANE	6	U
563-58-6-----	1 1-DICHLOROPROPENE	6	U
87-68-3-----	HEXACHLOROBUTADIENE	6	U
98-82-8-----	ISOPROPYLBENZENE	6	U
99-87-6-----	p-ISOPROPYLTOLUENE	6	U
91-20-3-----	NAPHTHALENE	6	U
103-65-1-----	n-PROPYLBENZENE	6	U
87-61-6-----	1 2 3-TRICHLOROBENZENE	6	U
120-82-1-----	1 2 4-TRICHLOROBENZENE	6	U
95-63-6-----	1 2 4-TRIMETHYLBENZENE	6	U
108-67-8-----	1 3 5-TRIMETHYLBENZENE	6	U
74-97-5-----	BROMOCHLOROMETHANE	6	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD116

Lab Name: SWL-TULSA

Contract: ST.HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) SOIL

Lab Sample ID: 27702.17

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: M3652.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 14 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.6

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene	380	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD118

Lab Name: SWL-TULSA Contract: FT HOOD

Lab Code: SWOK Case No.: SAIC SAS No.: SDG No.: 27702

Matrix: (soil/water) SOIL Lab Sample ID: 27702.21

Sample wt/vol: 5.0 (g/mL) G Lab File ID: I22433.D

Level: (low/med) LOW Date Received: 11/20/96

% Moisture: not dec. 31 Date Analyzed: 11/26/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Q
74-87-3-----	CHLOROMETHANE	7 U
74-83-9-----	BROMOMETHANE	7 U
75-01-4-----	VINYL CHLORIDE	7 U
75-00-3-----	CHLOROETHANE	7 U
75-09-2-----	METHYLENE CHLORIDE	7 U
67-64-1-----	ACETONE	38 B
75-35-4-----	1 1-DICHLOROETHENE	7 U
75-34-3-----	1 1-DICHLOROETHANE	7 U
67-66-3-----	CHLOROFORM	7 U
107-06-2-----	1 2-DICHLOROETHANE	7 U
78-93-3-----	2-BUTANONE	7 U
71-55-6-----	1 1 1-TRICHLOROETHANE	7 U
56-23-5-----	CARBON TETRACHLORIDE	7 U
75-27-4-----	BROMODICHLOROMETHANE	7 U
78-87-5-----	1 2-DICHLOROPROPANE	7 U
79-01-6-----	TRICHLOROETHENE	7 U
124-48-1-----	DIBROMOCHLOROMETHANE	7 U
79-00-5-----	1 1 2-TRICHLOROETHANE	7 U
71-43-2-----	BENZENE	7 U
75-25-2-----	BROMOFORM	7 U
108-10-1-----	4-METHYL-2-PENTANONE	7 U
591-78-6-----	2-HEXANONE	7 U
127-18-4-----	TETRACHLOROETHENE	7 U
108-88-3-----	TOLUENE	7 U
79-34-5-----	1 1 2 2-TETRACHLOROETHANE	7 U
108-90-7-----	CHLOROBENZENE	7 U
100-41-4-----	ETHYL BENZENE	7 U
100-42-5-----	STYRENE	7 U
156-59-2-----	cis-1 2-DICHLOROETHENE	7 U
156-60-5-----	trans-1 2-DICHLOROETHENE	7 U
13-302-07-----	m,p-XYLENES	7 U
95-47-6-----	o-XYLENE	7 U
106-93-4-----	1 2-DIBROMOETHANE	7 U
630-20-6-----	1 1 1 2-TETRACHLOROETHANE	7 U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD118RE

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) SOIL

Lab Sample ID: 27702.21RA

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: I22448.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 31

Date Analyzed: 11/27/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	CONCENTRATION	Q
74-87-3	CHLOROMETHANE	7	U
74-83-9	BROMOMETHANE	7	U
75-01-4	VINYL CHLORIDE	7	U
75-00-3	CHLOROETHANE	7	U
75-09-2	METHYLENE CHLORIDE	4	J
67-64-1	ACETONE	24	B
75-35-4	1 1-DICHLOROETHENE	7	U
75-34-3	1 1-DICHLOROETHANE	7	U
67-66-3	CHLOROFORM	7	U
107-06-2	1 2-DICHLOROETHANE	7	U
78-93-3	2-BUTANONE	9	
71-55-6	1 1 1-TRICHLOROETHANE	7	U
56-23-5	CARBON TETRACHLORIDE	7	U
75-27-4	BROMODICHLOROMETHANE	7	U
78-87-5	1 2-DICHLOROPROPANE	7	U
79-01-6	TRICHLOROETHENE	7	U
124-48-1	DIBROMOCHLOROMETHANE	7	U
79-00-5	1 1 2-TRICHLOROETHANE	7	U
71-43-2	BENZENE	7	U
75-25-2	BROMOFORM	7	U
108-10-1	4-METHYL-2-PENTANONE	7	U
591-78-6	2-HEXANONE	7	U
127-18-4	TETRACHLOROETHENE	7	U
108-88-3	TOLUENE	7	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	7	U
108-90-7	CHLOROBENZENE	7	U
100-41-4	ETHYL BENZENE	7	U
100-42-5	STYRENE	7	U
156-59-2	cis-1 2-DICHLOROETHENE	7	U
156-60-5	trans-1 2-DICHLOROETHENE	7	U
13-302-07	m,p-XYLENES	7	U
95-47-6	o-XYLENE	7	U
106-93-4	1 2-DIBROMOETHANE	7	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	7	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD118RE

Lab Name: SWL-TULSA Contract: FT HOOD

Lab Code: SWOK Case No.: SAIC SAS No.: SDG No.: 27702

Matrix: (soil/water) SOIL Lab Sample ID: 27702.21RA

Sample wt/vol: 5.0 (g/mL) G Lab File ID: I22448.D

Level: (low/med) LOW Date Received: 11/20/96

% Moisture: not dec. 31 Date Analyzed: 11/27/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	UG/KG	Q
96-18-4-----1 2 3-	TRICHLOROPROPANE	7	U
75-71-8-----	DICHLORODIFLUOROMETHANE	7	U
75-69-4-----	TRICHLOROFLUOROMETHANE	7	U
74-95-3-----	DIBROMOMETHANE	7	U
96-12-8-----1 2-	DIBROMO-3-CHLOROPROPANE	7	U
108-86-1-----	BROMOBENZENE	7	U
104-51-8-----n-	BUTYLBENZENE	7	U
98-06-6-----tert-	BUTYLBENZENE	7	U
135-98-8-----sec-	BUTYLBENZENE	7	U
95-49-8-----2-	CHLOROTOLUENE	7	U
106-43-4-----4-	CHLOROTOLUENE	7	U
95-50-1-----1 2-	DICHLOROBENZENE	7	U
541-73-1-----1 3-	DICHLOROBENZENE	7	U
106-46-7-----1 4-	DICHLOROBENZENE	7	U
142-28-9-----1 3-	DICHLOROPROPANE	7	U
594-20-7-----2 2-	DICHLOROPROPANE	7	U
563-58-6-----1 1-	DICHLOROPROPENE	7	U
87-68-3-----	HEXACHLOROBUTADIENE	7	U
98-82-8-----	ISOPROPYLBENZENE	7	U
99-87-6-----p-	ISOPROPYLTOLUENE	7	U
91-20-3-----	NAPHTHALENE	7	U
103-65-1-----n-	PROPYLBENZENE	7	U
87-61-6-----1 2 3-	TRICHLOROBENZENE	7	U
120-82-1-----1 2 4-	TRICHLOROBENZENE	7	U
95-63-6-----1 2 4-	TRIMETHYLBENZENE	7	U
108-67-8-----1 3 5-	TRIMETHYLBENZENE	7	U
74-97-5-----	BROMOCHLOROMETHANE	7	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD118

Name: SWL-TULSA Contract: ST.HOOD
 Lab Code: SWOK Case No.: SAIC SAS No.: SDG No.: 27702
 Matrix: (soil/water) SOIL Lab Sample ID: 27702.21
 Sample wt/vol: 30.0 (g/mL) G Lab File ID: M3653.D
 Level: (low/med) LOW Date Received: 11/20/96
 % Moisture: not dec. 31 dec. Date Extracted: 11/21/96
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/09/96
 Concentrated Extract Volume: 1000(uL)
 GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2300	U
83-32-9	Acenaphthene	480	U
121-14-2	2,4-Dinitrotoluene	480	U
51-28-5	2,4-Dinitrophenol	2300	U
100-02-7	4-Nitrophenol	2300	U
132-64-9	Dibenzofuran	480	U
84-66-2	Diethylphthalate	480	U
7005-72-3	4-Chlorophenyl-phenylether	480	U
86-73-7	Fluorene	480	U
100-01-6	4-Nitroaniline	2300	U
534-52-1	4,6-Dinitro-2-methylphenol	2300	U
86-30-6	N-Nitrosodiphenylamine (1)	480	U
101-55-3	4-Bromophenylphenylether	480	U
118-74-1	Hexachlorobenzene	480	U
87-86-5	Pentachlorophenol	2300	U
85-01-8	Phenanthrene	270	J
120-12-7	Anthracene	63	J
84-74-2	Di-n-butylphthalate	480	U
206-44-0	Fluoranthene	450	J
129-00-0	Pyrene	510	
85-68-7	Butylbenzylphthalate	480	U
91-94-1	3,3'-Dichlorobenzidine	960	U
56-55-3	Benzo(a)anthracene	190	J
218-01-9	Chrysene	270	J
117-81-7	bis(2-Ethylhexyl)phthalate	1100	
117-84-0	Di-n-octylphthalate	290	J
205-99-2	Benzo(b)fluoranthene	270	J
207-08-9	Benzo(k)fluoranthene	210	J
50-32-8	Benzo(a)pyrene	250	J
193-39-5	Indeno(1,2,3-cd)pyrene	180	J
53-70-3	Dibenz(a,h)anthracene	66	J
191-24-2	Benzo(g,h,i)perylene	180	J
110-86-1	Pyridine	480	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD119

Lab Name: SWL-TULSA Contract: FT HOOD
 Lab Code: SWOK Case No.: SAIC SAS No.: SDG No.: 27702
 Matrix: (soil/water) SOIL Lab Sample ID: 27702.22
 Sample wt/vol: 5.0 (g/mL) G Lab File ID: I22434.D
 Level: (low/med) LOW Date Received: 11/20/96
 % Moisture: not dec. 21 Date Analyzed: 11/26/96
 Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

74-87-3-----	CHLOROMETHANE	6	U
74-83-9-----	BROMOMETHANE	6	U
75-01-4-----	VINYL CHLORIDE	6	U
75-00-3-----	CHLOROETHANE	6	U
75-09-2-----	METHYLENE CHLORIDE	6	U
67-64-1-----	ACETONE	6	JB
75-35-4-----	1 1-DICHLOROETHENE	6	U
75-34-3-----	1 1-DICHLOROETHANE	6	U
67-66-3-----	CHLOROFORM	6	U
107-06-2-----	1 2-DICHLOROETHANE	6	U
78-93-3-----	2-BUTANONE	6	U
71-55-6-----	1 1 1-TRICHLOROETHANE	6	U
56-23-5-----	CARBON TETRACHLORIDE	6	U
75-27-4-----	BROMODICHLOROMETHANE	6	U
78-87-5-----	1 2-DICHLOROPROPANE	6	U
79-01-6-----	TRICHLOROETHENE	6	U
124-48-1-----	DIBROMOCHLOROMETHANE	6	U
79-00-5-----	1 1 2-TRICHLOROETHANE	6	U
71-43-2-----	BENZENE	6	U
75-25-2-----	BROMOFORM	6	U
108-10-1-----	4-METHYL-2-PENTANONE	6	U
591-78-6-----	2-HEXANONE	6	U
127-18-4-----	TETRACHLOROETHENE	6	U
108-88-3-----	TOLUENE	6	U
79-34-5-----	1 1 2 2-TETRACHLOROETHANE	6	U
108-90-7-----	CHLOROBENZENE	6	U
100-41-4-----	ETHYL BENZENE	6	U
100-42-5-----	STYRENE	6	U
156-59-2-----	cis-1 2-DICHLOROETHENE	6	U
156-60-5-----	trans-1 2-DICHLOROETHENE	6	U
13-302-07-----	m,p-XYLENES	6	U
95-47-6-----	o-XYLENE	6	U
106-93-4-----	1 2-DIBROMOETHANE	6	U
630-20-6-----	1 1 1 2-TETRACHLOROETHANE	6	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD119

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) SOIL

Lab Sample ID: 27702.22

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: I22434.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 21

Date Analyzed: 11/26/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

96-18-4-----1 2 3-TRICHLOROPROPANE	6	U
75-71-8-----DICHLORODIFLUOROMETHANE	6	U
75-69-4-----TRICHLOROFUOROMETHANE	6	U
74-95-3-----DIBROMOMETHANE	6	U
96-12-8-----1 2-DIBROMO-3-CHLOROPROPANE	6	U
108-86-1-----BROMOBENZENE	6	U
104-51-8-----n-BUTYLBENZENE	6	U
98-06-6-----tert-BUTYLBENZENE	6	U
135-98-8-----sec-BUTYLBENZENE	6	U
95-49-8-----2-CHLOROTOLUENE	6	U
106-43-4-----4-CHLOROTOLUENE	6	U
95-50-1-----1 2-DICHLOROBENZENE	6	U
541-73-1-----1 3-DICHLOROBENZENE	6	U
106-46-7-----1 4-DICHLOROBENZENE	6	U
142-28-9-----1 3-DICHLOROPROPANE	6	U
594-20-7-----2 2-DICHLOROPROPANE	6	U
563-58-6-----1 1-DICHLOROPROPENE	6	U
87-68-3-----HEXACHLOROBUTADIENE	6	U
98-82-8-----ISOPROPYLBENZENE	6	U
99-87-6-----p-ISOPROPYLTOLUENE	6	U
91-20-3-----NAPHTHALENE	6	U
103-65-1-----n-PROPYLBENZENE	6	U
87-61-6-----1 2 3-TRICHLOROBENZENE	6	U
120-82-1-----1 2 4-TRICHLOROBENZENE	6	U
95-63-6-----1 2 4-TRIMETHYLBENZENE	6	U
108-67-8-----1 3 5-TRIMETHYLBENZENE	6	U
74-97-5-----BROMOCHLOROMETHANE	6	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD119

Site Name: SWL-TULSA

Contract: ST.HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) SOIL

Lab Sample ID: 27702.22

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: M3639.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 21 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 6.9

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene	420	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD120

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) SOIL

Lab Sample ID: 27702.23

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: I22435.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 24

Date Analyzed: 11/26/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	UG/KG	Q
96-18-4-----1 2 3-TRICHLOROPROPANE		6	U
75-71-8-----DICHLORODIFLUOROMETHANE		6	U
75-69-4-----TRICHLOROFLUOROMETHANE		6	U
74-95-3-----DIBROMOMETHANE		6	U
96-12-8-----1 2-DIBROMO-3-CHLOROPROPANE		6	U
108-86-1-----BROMOBENZENE		6	U
104-51-8-----n-BUTYLBENZENE		6	U
98-06-6-----tert-BUTYLBENZENE		6	U
135-98-8-----sec-BUTYLBENZENE		6	U
95-49-8-----2-CHLOROTOLUENE		6	U
106-43-4-----4-CHLOROTOLUENE		6	U
95-50-1-----1 2-DICHLOROBENZENE		6	U
541-73-1-----1 3-DICHLOROBENZENE		6	U
106-46-7-----1 4-DICHLOROBENZENE		6	U
142-28-9-----1 3-DICHLOROPROPANE		6	U
594-20-7-----2 2-DICHLOROPROPANE		6	U
563-58-6-----1 1-DICHLOROPROPENE		6	U
87-68-3-----HEXACHLOROBUTADIENE		6	U
98-82-8-----ISOPROPYLBENZENE		6	U
99-87-6-----p-ISOPROPYLTOLUENE		6	U
91-20-3-----NAPHTHALENE		6	U
103-65-1-----n-PROPYLBENZENE		6	U
87-61-6-----1 2 3-TRICHLOROBENZENE		6	U
120-82-1-----1 2 4-TRICHLOROBENZENE		6	U
95-63-6-----1 2 4-TRIMETHYLBENZENE		6	U
108-67-8-----1 3 5-TRIMETHYLBENZENE		6	U
74-97-5-----BROMOCHLOROMETHANE		6	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD120

Lab Name: SWL-TULSA

Contract: ST.HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) SOIL

Lab Sample ID: 27702.23

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: M3642.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 24 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.2

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene__	430	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD121

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27726

Matrix: (soil/water) SOIL

Lab Sample ID: 27726.14

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: I22471.D

Level: (low/med) LOW

Date Received: 11/21/96

% Moisture: not dec. 43

Date Analyzed: 12/02/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.

COMPOUND

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	9	U
74-83-9	BROMOMETHANE	9	U
75-01-4	VINYL CHLORIDE	9	U
75-00-3	CHLOROETHANE	9	U
75-09-2	METHYLENE CHLORIDE	22	B
67-64-1	ACETONE	400	EB
75-35-4	1 1-DICHLOROETHENE	9	U
75-34-3	1 1-DICHLOROETHANE	9	U
67-66-3	CHLOROFORM	9	U
107-06-2	1 2-DICHLOROETHANE	9	U
78-93-3	2-BUTANONE	61	U
71-55-6	1 1 1-TRICHLOROETHANE	9	U
56-23-5	CARBON TETRACHLORIDE	9	U
75-27-4	BROMODICHLOROMETHANE	9	U
78-87-5	1 2-DICHLOROPROPANE	9	U
79-01-6	TRICHLOROETHENE	9	U
124-48-1	DIBROMOCHLOROMETHANE	9	U
79-00-5	1 1 2-TRICHLOROETHANE	9	U
71-43-2	BENZENE	9	U
75-25-2	BROMOFORM	9	U
108-10-1	4-METHYL-2-PENTANONE	9	U
591-78-6	2-HEXANONE	9	U
127-18-4	TETRACHLOROETHENE	9	U
108-88-3	TOLUENE	9	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	9	U
108-90-7	CHLOROBENZENE	9	U
100-41-4	ETHYL BENZENE	9	U
100-42-5	STYRENE	9	U
156-59-2	cis-1 2-DICHLOROETHENE	9	U
156-60-5	trans-1 2-DICHLOROETHENE	9	U
13-302-07	m,p-XYLENES	9	U
95-47-6	o-XYLENE	9	U
106-93-4	1 2-DIBROMOETHANE	9	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	9	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD121DL

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27726

Matrix: (soil/water) SOIL

Lab Sample ID: 27726.14DL

Sample wt/vol: 2.5 (g/mL) G

Lab File ID: I22497.D

Level: (low/med) LOW

Date Received: 11/21/96

% Moisture: not dec. 43

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.

COMPOUND

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Q	Q
74-87-3	CHLOROMETHANE	18	U
74-83-9	BROMOMETHANE	18	U
75-01-4	VINYL CHLORIDE	18	U
75-00-3	CHLOROETHANE	18	U
75-09-2	METHYLENE CHLORIDE	18	U
67-64-1	ACETONE	180	BD
75-35-4	1 1-DICHLOROETHENE	18	U
75-34-3	1 1-DICHLOROETHANE	18	U
67-66-3	CHLOROFORM	18	U
107-06-2	1 2-DICHLOROETHANE	18	U
78-93-3	2-BUTANONE	29	D
71-55-6	1 1-TRICHLOROETHANE	18	U
56-23-5	CARBON TETRACHLORIDE	18	U
75-27-4	BROMODICHLOROMETHANE	18	U
78-87-5	1 2-DICHLOROPROPANE	18	U
79-01-6	TRICHLOROETHENE	18	U
124-48-1	DIBROMOCHLOROMETHANE	18	U
79-00-5	1 1 2-TRICHLOROETHANE	18	U
71-43-2	BENZENE	18	U
75-25-2	BROMOFORM	18	U
108-10-1	4-METHYL-2-PENTANONE	18	U
591-78-6	2-HEXANONE	18	U
127-18-4	TETRACHLOROETHENE	18	U
108-88-3	TOLUENE	18	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	18	U
108-90-7	CHLOROBENZENE	18	U
100-41-4	ETHYL BENZENE	18	U
100-42-5	STYRENE	18	U
156-59-2	cis-1 2-DICHLOROETHENE	18	U
156-60-5	trans-1 2-DICHLOROETHENE	18	U
13-302-07	m,p-XYLENES	18	U
95-47-6	o-XYLENE	18	U
106-93-4	1 2-DIBROMOETHANE	18	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	18	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD121DL

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27726

Matrix: (soil/water) SOIL

Lab Sample ID: 27726.14DL

Sample wt/vol: 2.5 (g/mL) G

Lab File ID: I22497.D

Level: (low/med) LOW

Date Received: 11/21/96

% Moisture: not dec. 43

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.

COMPOUND

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
96-18-4-----1 2 3-	TRICHLOROPROPANE	18	U
75-71-8-----	DICHLORODIFLUOROMETHANE	18	U
75-69-4-----	TRICHLOROFUOROMETHANE	18	U
74-95-3-----	DIBROMOMETHANE	18	U
96-12-8-----1 2-	DIBROMO-3-CHLOROPROPANE	18	U
108-86-1-----	BROMOBENZENE	18	U
104-51-8-----	n-BUTYLBENZENE	18	U
98-06-6-----	tert-BUTYLBENZENE	18	U
135-98-8-----	sec-BUTYLBENZENE	18	U
95-49-8-----2-	CHLOROTOLUENE	18	U
106-43-4-----4-	CHLOROTOLUENE	18	U
95-50-1-----1 2-	DICHLOROBEZENE	18	U
541-73-1-----1 3-	DICHLOROBEZENE	18	U
106-46-7-----1 4-	DICHLOROBEZENE	18	U
142-28-9-----1 3-	DICHLOROPROPANE	18	U
594-20-7-----2 2-	DICHLOROPROPANE	18	U
563-58-6-----1 1-	DICHLOROPROPENE	18	U
87-68-3-----	HEXACHLOROBUTADIENE	18	U
98-82-8-----	ISOPROPYLBENZENE	18	U
99-87-6-----p-	ISOPROPYLTOLUENE	18	U
91-20-3-----	NAPHTHALENE	18	U
103-65-1-----n-	PROPYLBENZENE	18	U
87-61-6-----1 2 3-	TRICHLOROBEZENE	18	U
120-82-1-----1 2 4-	TRICHLOROBEZENE	18	U
95-63-6-----1 2 4-	TRIMETHYLBENZENE	18	U
108-67-8-----1 3 5-	TRIMETHYLBENZENE	18	U
74-97-5-----	BROMOCHLOROMETHANE	18	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD121

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27726

Matrix: (soil/water) SOIL

Lab Sample ID: 27726.14

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: M3715.D

Level: (low/med) LOW

Date Received: 11/21/96

% Moisture: not dec. 43 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/11/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.

COMPOUND

Q

108-95-2-----	Phenol	580	U
111-44-4-----	bis(2-Chloroethyl)ether	580	U
95-57-8-----	2-Chlorophenol	580	U
541-73-1-----	1,3-Dichlorobenzene	580	U
106-46-7-----	1,4-Dichlorobenzene	580	U
100-51-6-----	Benzyl alcohol	580	U
95-50-1-----	1,2-Dichlorobenzene	580	U
95-48-7-----	2-Methylphenol	580	U
108-60-1-----	bis(2-Chloroisopropyl)ether	580	U
106-44-5-----	4-Methylphenol	580	U
621-64-7-----	N-Nitroso-di-n-propylamine	580	U
67-72-1-----	Hexachloroethane	580	U
98-95-3-----	Nitrobenzene	580	U
78-59-1-----	Isophorone	580	U
88-75-5-----	2-Nitrophenol	580	U
105-67-9-----	2,4-Dimethylphenol	580	U
65-85-0-----	Benzoic Acid	2800	U
111-91-1-----	bis(2-Chloroethoxy)methane	580	U
120-83-2-----	2,4-Dichlorophenol	580	U
120-82-1-----	1,2,4-Trichlorobenzene	580	U
91-20-3-----	Naphthalene	580	U
106-47-8-----	4-Chloroaniline	580	U
87-68-3-----	Hexachlorobutadiene	580	U
59-50-7-----	4-Chloro-3-methylphenol	580	U
91-57-6-----	2-Methylnaphthalene	190	J
77-47-4-----	Hexachlorocyclopentadiene	580	U
88-06-2-----	2,4,6-Trichlorophenol	580	U
95-95-4-----	2,4,5-Trichlorophenol	2800	U
91-58-7-----	2-Chloronaphthalene	580	U
88-74-4-----	2-Nitroaniline	2800	U
131-11-3-----	Dimethylphthalate	580	U
208-96-8-----	Acenaphthylene	580	U
606-20-2-----	2,6-Dinitrotoluene	580	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD121

Site Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27726

Matrix: (soil/water) SOIL

Lab Sample ID: 27726.14

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: M3715.D

Level: (low/med) LOW

Date Received: 11/21/96

% Moisture: not dec. 43 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/11/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.

COMPOUND

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2800	U
83-32-9	Acenaphthene	580	U
121-14-2	2,4-Dinitrotoluene	580	U
51-28-5	2,4-Dinitrophenol	2800	U
100-02-7	4-Nitrophenol	2800	U
132-64-9	Dibenzofuran	580	U
84-66-2	Diethylphthalate	580	U
7005-72-3	4-Chlorophenyl-phenylether	580	U
86-73-7	Fluorene	97	J
100-01-6	4-Nitroaniline	2800	U
534-52-1	4,6-Dinitro-2-methylphenol	2800	U
86-30-6	N-Nitrosodiphenylamine (1)	580	U
101-55-3	4-Bromophenylphenylether	580	U
118-74-1	Hexachlorobenzene	580	U
87-86-5	Pentachlorophenol	2800	U
85-01-8	Phenanthrene	220	J
120-12-7	Anthracene	580	U
84-74-2	Di-n-butylphthalate	580	U
206-44-0	Fluoranthene	84	J
129-00-0	Pyrene	130	J
85-68-7	Butylbenzylphthalate	100	J
91-94-1	3,3'-Dichlorobenzidine	1200	U
56-55-3	Benzo(a)anthracene	580	U
218-01-9	Chrysene	580	U
117-81-7	bis(2-Ethylhexyl)phthalate	1000	J
117-84-0	Di-n-octylphthalate	110	J
205-99-2	Benzo(b)fluoranthene	400	J
207-08-9	Benzo(k)fluoranthene	580	U
50-32-8	Benzo(a)pyrene	580	U
193-39-5	Indeno(1,2,3-cd)pyrene	580	U
53-70-3	Dibenz(a,h)anthracene	580	U
191-24-2	Benzo(g,h,i)perylene	580	U
110-86-1	Pyridine	580	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD122

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27726

Matrix: (soil/water) SOIL

Lab Sample ID: 27726.15

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: I22458.D

Level: (low/med) LOW

Date Received: 11/21/96

% Moisture: not dec. 31

Date Analyzed: 11/27/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.

COMPOUND

74-87-3-----	CHLOROMETHANE	7	U
74-83-9-----	BROMOMETHANE	7	U
75-01-4-----	VINYL CHLORIDE	7	U
75-00-3-----	CHLOROETHANE	7	U
75-09-2-----	METHYLENE CHLORIDE	7	U
67-64-1-----	ACETONE	65	B
75-35-4-----	1 1-DICHLOROETHENE	7	U
75-34-3-----	1 1-DICHLOROETHANE	7	U
67-66-3-----	CHLOROFORM	7	U
107-06-2-----	1 2-DICHLOROETHANE	7	U
78-93-3-----	2-BUTANONE	10	U
71-55-6-----	1 1-TRICHLOROETHANE	7	U
56-23-5-----	CARBON TETRACHLORIDE	7	U
75-27-4-----	BROMODICHLOROMETHANE	7	U
78-87-5-----	1 2-DICHLOROPROPANE	7	U
79-01-6-----	TRICHLOROETHENE	7	U
124-48-1-----	DIBROMOCHLOROMETHANE	7	U
79-00-5-----	1 1 2-TRICHLOROETHANE	7	U
71-43-2-----	BENZENE	7	U
75-25-2-----	BROMOFORM	7	U
108-10-1-----	4-METHYL-2-PENTANONE	7	U
591-78-6-----	2-HEXANONE	7	U
127-18-4-----	TETRACHLOROETHENE	7	U
108-88-3-----	TOLUENE	7	U
79-34-5-----	1 1 2 2-TETRACHLOROETHANE	7	U
108-90-7-----	CHLOROBENZENE	7	U
100-41-4-----	ETHYL BENZENE	7	U
100-42-5-----	STYRENE	7	U
156-59-2-----	cis-1 2-DICHLOROETHENE	7	U
156-60-5-----	trans-1 2-DICHLOROETHENE	7	U
13-302-07-----	m,p-XYLENES	7	U
95-47-6-----	o-XYLENE	7	U
106-93-4-----	1 2-DIBROMOETHANE	7	U
630-20-6-----	1 1 1 2-TETRACHLOROETHANE	7	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD122

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27726

Matrix: (soil/water) SOIL

Lab Sample ID: 27726.15

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: I22458.D

Level: (low/med) LOW

Date Received: 11/21/96

% Moisture: not dec. 31

Date Analyzed: 11/27/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.

COMPOUND

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Q
96-18-4-----1 2 3-	TRICHLOROPROPANE	7 U
75-71-8-----	DICHLORODIFLUOROMETHANE	7 UU
75-69-4-----	TRICHLOROFLUOROMETHANE	7 UUU
74-95-3-----	DIBROMOMETHANE	7 UUU
96-12-8-----1 2-	DIBROMO-3-CHLOROPROPANE	7 UUU
108-86-1-----	BROMOBENZENE	7 UUU
104-51-8-----	n-BUTYLBENZENE	7 UUU
98-06-6-----	tert-BUTYLBENZENE	7 UUU
135-98-8-----	sec-BUTYLBENZENE	7 UUU
95-49-8-----2-	CHLOROTOLUENE	7 UUU
106-43-4-----4-	CHLOROTOLUENE	7 UUU
95-50-1-----1 2-	DICHLOROBEZENE	7 UUU
541-73-1-----1 3-	DICHLOROBEZENE	7 UUU
106-46-7-----1 4-	DICHLOROBEZENE	7 UUU
142-28-9-----1 3-	DICHLOROPROPANE	7 UUU
594-20-7-----2 2-	DICHLOROPROPANE	7 UUU
563-58-6-----1 1-	DICHLOROPROPENE	7 UUU
87-68-3-----	HEXACHLOROBUTADIENE	7 UUU
98-82-8-----	ISOPROPYLBENZENE	7 UUU
99-87-6-----p-	ISOPROPYLTOLUENE	7 UUU
91-20-3-----	NAPHTHALENE	7 UUU
103-65-1-----n-	PROPYLBENZENE	7 UUU
87-61-6-----1 2 3-	TRICHLOROBEZENE	7 UUU
120-82-1-----1 2 4-	TRICHLOROBEZENE	7 UUU
95-63-6-----1 2 4-	TRIMETHYLBENZENE	7 UUU
108-67-8-----1 3 5-	TRIMETHYLBENZENE	7 UUU
74-97-5-----	BROMOCHLOROMETHANE	7 U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD122

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27726

Matrix: (soil/water) SOIL

Lab Sample ID: 27726.15

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: M3716.D

Level: (low/med) LOW

Date Received: 11/21/96

% Moisture: not dec. 31 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/11/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene__	480	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD123

Lab Name: SWL-TULSA Contract: FT HOOD

Lab Code: SWOK Case No.: SAIC SAS No.: SDG No.: 27702

Matrix: (soil/water) SOIL Lab Sample ID: 27702.24

Sample wt/vol: 5.0 (g/mL) G Lab File ID: I22469.D

Level: (low/med) LOW Date Received: 11/20/96

% Moisture: not dec. 35 Date Analyzed: 12/02/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	8	U
96-18-4-----1 2 3-	TRICHLOROPROPANE	8	U
75-71-8-----	DICHLORODIFLUOROMETHANE	8	U
75-69-4-----	TRICHLOROFUOROMETHANE	8	U
74-95-3-----	DIBROMOMETHANE	8	U
96-12-8-----1 2-	DIBROMO-3-CHLOROPROPANE	8	U
108-86-1-----	BROMOBENZENE	8	U
104-51-8-----n-	BUTYLBENZENE	8	U
98-06-6-----tert-	BUTYLBENZENE	8	U
135-98-8-----sec-	BUTYLBENZENE	8	U
95-49-8-----2-	CHLOROTOLUENE	8	U
106-43-4-----4-	CHLOROTOLUENE	8	U
95-50-1-----1 2-	DICHLOROBENZENE	8	U
541-73-1-----1 3-	DICHLOROBENZENE	8	U
106-46-7-----1 4-	DICHLOROBENZENE	8	U
142-28-9-----1 3-	DICHLOROPROPANE	8	U
594-20-7-----2 2-	DICHLOROPROPANE	8	U
563-58-6-----1 1-	DICHLOROPROPENE	8	U
87-68-3-----	HEXACHLOROBUTADIENE	8	U
98-82-8-----	ISOPROPYLBENZENE	8	U
99-87-6-----p-	ISOPROPYLTOLUENE	8	U
91-20-3-----	NAPHTHALENE	8	U
103-65-1-----n-	PROPYLBENZENE	8	U
87-61-6-----1 2 3-	TRICHLOROBENZENE	8	U
120-82-1-----1 2 4-	TRICHLOROBENZENE	8	U
95-63-6-----1 2 4-	TRIMETHYLBENZENE	8	U
108-67-8-----1 3 5-	TRIMETHYLBENZENE	8	U
74-97-5-----	BROMOCHLOROMETHANE	8	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD123

Lab Name: SWL-TULSA

Contract: ST.HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) SOIL

Lab Sample ID: 27702.24

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: M3654.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 35 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.1

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2-----	Phenol	510	U
111-44-4-----	bis(2-Chloroethyl)ether	510	U
95-57-8-----	2-Chlorophenol	510	U
541-73-1-----	1,3-Dichlorobenzene	510	U
106-46-7-----	1,4-Dichlorobenzene	510	U
100-51-6-----	Benzyl alcohol	510	U
95-50-1-----	1,2-Dichlorobenzene	510	U
95-48-7-----	2-Methylphenol	510	U
108-60-1-----	bis(2-Chloroisopropyl)ether	510	U
106-44-5-----	4-Methylphenol	510	U
621-64-7-----	N-Nitroso-di-n-propylamine	510	U
67-72-1-----	Hexachloroethane	510	U
98-95-3-----	Nitrobenzene	510	U
78-59-1-----	Isophorone	510	U
88-75-5-----	2-Nitrophenol	510	U
105-67-9-----	2,4-Dimethylphenol	510	U
65-85-0-----	Benzoic Acid	2500	U
111-91-1-----	bis(2-Chloroethoxy)methane	510	U
120-83-2-----	2,4-Dichlorophenol	510	U
120-82-1-----	1,2,4-Trichlorobenzene	510	U
91-20-3-----	Naphthalene	510	U
106-47-8-----	4-Chloroaniline	510	U
87-68-3-----	Hexachlorobutadiene	510	U
59-50-7-----	4-Chloro-3-methylphenol	510	U
91-57-6-----	2-Methylnaphthalene	510	U
77-47-4-----	Hexachlorocyclopentadiene	510	U
88-06-2-----	2,4,6-Trichlorophenol	510	U
95-95-4-----	2,4,5-Trichlorophenol	2500	U
91-58-7-----	2-Chloronaphthalene	510	U
88-74-4-----	2-Nitroaniline	2500	U
131-11-3-----	Dimethylphthalate	510	U
208-96-8-----	Acenaphthylene	510	U
606-20-2-----	2,6-Dinitrotoluene	510	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD123

Lab Name: SWL-TULSA

Contract: ST.HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) SOIL

Lab Sample ID: 27702.24

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: M3654.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 35 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.1

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene	510	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD124

Lab Name: SWL-TULSA Contract: FT HOOD

Lab Code: SWOK Case No.: SAIC SAS No.: SDG No.: 27702

Matrix: (soil/water) SOIL Lab Sample ID: 27702.25

Sample wt/vol: 5.0 (g/mL) G Lab File ID: I22449.D

Level: (low/med) LOW Date Received: 11/20/96

% Moisture: not dec. 43 Date Analyzed: 11/27/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	UG/KG	Q
74-87-3	CHLOROMETHANE	9	U
74-83-9	BROMOMETHANE	9	U
75-01-4	VINYL CHLORIDE	9	U
75-00-3	CHLOROETHANE	9	U
75-09-2	METHYLENE CHLORIDE	4	J
67-64-1	ACETONE	9	U
75-35-4	1 1-DICHLOROETHENE	9	U
75-34-3	1 1-DICHLOROETHANE	9	U
67-66-3	CHLOROFORM	9	U
107-06-2	1 2-DICHLOROETHANE	9	U
78-93-3	2-BUTANONE	9	U
71-55-6	1 1 1-TRICHLOROETHANE	9	U
56-23-5	CARBON TETRACHLORIDE	9	U
75-27-4	BROMODICHLOROMETHANE	9	U
78-87-5	1 2-DICHLOROPROPANE	9	U
79-01-6	TRICHLOROETHENE	9	U
124-48-1	DIBROMOCHLOROMETHANE	9	U
79-00-5	1 1 2-TRICHLOROETHANE	9	U
71-43-2	BENZENE	9	U
75-25-2	BROMOFORM	9	U
108-10-1	4-METHYL-2-PENTANONE	9	U
591-78-6	2-HEXANONE	9	U
127-18-4	TETRACHLOROETHENE	9	U
108-88-3	TOLUENE	9	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	9	U
108-90-7	CHLOROBENZENE	9	U
100-41-4	ETHYL BENZENE	9	U
100-42-5	STYRENE	9	U
156-59-2	cis-1 2-DICHLOROETHENE	9	U
156-60-5	trans-1 2-DICHLOROETHENE	9	U
13-302-07	m,p-XYLENES	9	U
95-47-6	o-XYLENE	9	U
106-93-4	1 2-DIBROMOETHANE	9	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	9	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD124RE

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) SOIL

Lab Sample ID: 27702.25RA

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: I22450.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 43

Date Analyzed: 11/27/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.

COMPOUND

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
96-18-4-----1 2 3-	TRICHLOROPROPANE		9	U
75-71-8-----	DICHLORODIFLUOROMETHANE		9	U
75-69-4-----	TRICHLOROFUOROMETHANE		9	U
74-95-3-----	DIBROMOMETHANE		9	U
96-12-8-----1 2-	DIBROMO-3-CHLOROPROPANE		9	U
108-86-1-----	BROMOBENZENE		9	U
104-51-8-----	n-BUTYLBENZENE		9	U
98-06-6-----	tert-BUTYLBENZENE		9	U
135-98-8-----	sec-BUTYLBENZENE		9	U
95-49-8-----	2-CHLOROTOLUENE		9	U
106-43-4-----	4-CHLOROTOLUENE		9	U
95-50-1-----	1 2-DICHLOROBENZENE		9	U
541-73-1-----	1 3-DICHLOROBENZENE		9	U
106-46-7-----	1 4-DICHLOROBENZENE		9	U
142-28-9-----	1 3-DICHLOROPROPANE		9	U
594-20-7-----	2 2-DICHLOROPROPANE		9	U
563-58-6-----	1 1-DICHLOROPROPENE		9	U
87-68-3-----	HEXACHLOROBUTADIENE		9	U
98-82-8-----	ISOPROPYLBENZENE		9	U
99-87-6-----	p-ISOPROPYLTOLUENE		9	U
91-20-3-----	NAPHTHALENE		9	U
103-65-1-----	n-PROPYLBENZENE		9	U
87-61-6-----	1 2 3-TRICHLOROBENZENE		9	U
120-82-1-----	1 2 4-TRICHLOROBENZENE		9	U
95-63-6-----	1 2 4-TRIMETHYLBENZENE		9	U
108-67-8-----	1 3 5-TRIMETHYLBENZENE		9	U
74-97-5-----	BROMOCHLOROMETHANE		9	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD124

Site Name: SWL-TULSA

Contract: ST.HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) SOIL

Lab Sample ID: 27702.25

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: M3655.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 43 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.1

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	580	U
111-44-4	bis(2-Chloroethyl) ether	580	U
95-57-8	2-Chlorophenol	580	U
541-73-1	1,3-Dichlorobenzene	580	U
106-46-7	1,4-Dichlorobenzene	580	U
100-51-6	Benzyl alcohol	580	U
95-50-1	1,2-Dichlorobenzene	580	U
95-48-7	2-Methylphenol	580	U
108-60-1	bis(2-Chloroisopropyl) ether	580	U
106-44-5	4-Methylphenol	580	U
621-64-7	N-Nitroso-di-n-propylamine	580	U
67-72-1	Hexachloroethane	580	U
98-95-3	Nitrobenzene	580	U
78-59-1	Isophorone	580	U
88-75-5	2-Nitrophenol	580	U
105-67-9	2,4-Dimethylphenol	580	U
65-85-0	Benzoic Acid	63	J
111-91-1	bis(2-Chloroethoxy)methane	580	U
120-83-2	2,4-Dichlorophenol	580	U
120-82-1	1,2,4-Trichlorobenzene	580	U
91-20-3	Naphthalene	580	U
106-47-8	4-Chloroaniline	580	U
87-68-3	Hexachlorobutadiene	580	U
59-50-7	4-Chloro-3-methylphenol	580	U
91-57-6	2-Methylnaphthalene	580	U
77-47-4	Hexachlorocyclopentadiene	580	U
88-06-2	2,4,6-Trichlorophenol	580	U
95-95-4	2,4,5-Trichlorophenol	2800	U
91-58-7	2-Chloronaphthalene	580	U
88-74-4	2-Nitroaniline	2800	U
131-11-3	Dimethylphthalate	580	U
208-96-8	Acenaphthylene	580	U
606-20-2	2,6-Dinitrotoluene	580	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD124

Site Name: SWL-TULSA

Contract: ST.HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) SOIL

Lab Sample ID: 27702.25

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: M3655.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 43 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.1

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene	580	U
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD125

Lab Name: SWL-TULSA

Contract: ST.HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) SOIL

Lab Sample ID: 27702.26

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: M3656.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 44 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 6.9

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	590	U
111-44-4	bis(2-Chloroethyl) ether	590	U
95-57-8	2-Chlorophenol	590	U
541-73-1	1,3-Dichlorobenzene	590	U
106-46-7	1,4-Dichlorobenzene	590	U
100-51-6	Benzyl alcohol	590	U
95-50-1	1,2-Dichlorobenzene	590	U
95-48-7	2-Methylphenol	590	U
108-60-1	bis(2-Chloroisopropyl) ether	590	U
106-44-5	4-Methylphenol	590	U
621-64-7	N-Nitroso-di-n-propylamine	590	U
67-72-1	Hexachloroethane	590	U
98-95-3	Nitrobenzene	590	U
78-59-1	Isophorone	590	U
88-75-5	2-Nitrophenol	590	U
105-67-9	2,4-Dimethylphenol	590	U
65-85-0	Benzoic Acid	100	J
111-91-1	bis(2-Chloroethoxy) methane	590	U
120-83-2	2,4-Dichlorophenol	590	U
120-82-1	1,2,4-Trichlorobenzene	590	U
91-20-3	Naphthalene	590	U
106-47-8	4-Chloroaniline	590	U
87-68-3	Hexachlorobutadiene	590	U
59-50-7	4-Chloro-3-methylphenol	590	U
91-57-6	2-Methylnaphthalene	590	U
77-47-4	Hexachlorocyclopentadiene	590	U
88-06-2	2,4,6-Trichlorophenol	590	U
95-95-4	2,4,5-Trichlorophenol	2800	U
91-58-7	2-Chloronaphthalene	590	U
88-74-4	2-Nitroaniline	2800	U
131-11-3	Dimethylphthalate	590	U
208-96-8	Acenaphthylene	590	U
606-20-2	2,6-Dinitrotoluene	590	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD125

Name: SWL-TULSA Contract: ST.HOOD
 Lab Code: SWOK Case No.: SAIC SAS No.: SDG No.: 27702
 Matrix: (soil/water) SOIL Lab Sample ID: 27702.26
 Sample wt/vol: 30.0 (g/mL) G Lab File ID: M3656.D
 Level: (low/med) LOW Date Received: 11/20/96
 % Moisture: not dec. 44 dec. Date Extracted: 11/21/96
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/09/96
 Concentrated Extract Volume: 1000(uL)
 GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

99-09-2-----3-Nitroaniline	2800	U
83-32-9-----Acenaphthene	590	U
121-14-2-----2,4-Dinitrotoluene	590	U
51-28-5-----2,4-Dinitrophenol	2800	U
100-02-7-----4-Nitrophenol	2800	U
132-64-9-----Dibenzofuran	590	U
84-66-2-----Diethylphthalate	590	U
7005-72-3-----4-Chlorophenyl-phenylether	590	U
86-73-7-----Fluorene	590	U
100-01-6-----4-Nitroaniline	2800	U
534-52-1-----4,6-Dinitro-2-methylphenol	2800	U
86-30-6-----N-Nitrosodiphenylamine (1)	590	U
101-55-3-----4-Bromophenylphenylether	590	U
118-74-1-----Hexachlorobenzene	590	U
87-86-5-----Pentachlorophenol	2800	U
85-01-8-----Phenanthrene	590	U
120-12-7-----Anthracene	590	U
84-74-2-----Di-n-butylphthalate	590	U
206-44-0-----Fluoranthene	590	U
129-00-0-----Pyrene	590	U
85-68-7-----Butylbenzylphthalate	590	U
91-94-1-----3,3'-Dichlorobenzidine	1200	U
56-55-3-----Benzo(a)anthracene	590	U
218-01-9-----Chrysene	590	U
117-81-7-----bis(2-Ethylhexyl)phthalate	150	J
117-84-0-----Di-n-octylphthalate	590	U
205-99-2-----Benzo(b)fluoranthene	590	U
207-08-9-----Benzo(k)fluoranthene	590	U
50-32-8-----Benzo(a)pyrene	590	U
193-39-5-----Indeno(1,2,3-cd)pyrene	590	U
53-70-3-----Dibenz(a,h)anthracene	590	U
191-24-2-----Benzo(g,h,i)perylene	590	U
110-86-1-----Pyridine	590	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD125

Site Name: SWL-TULSA

Contract: ST.HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) SOIL

Lab Sample ID: 27702.26

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: M3656.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 44 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 6.9

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene	590	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD128

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) SOIL

Lab Sample ID: 27758.31

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: I22486.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 26

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.

COMPOUND

CAS NO.	COMPOUND	CONCENTRATION	Q
74-87-3	CHLOROMETHANE	7	U
74-83-9	BROMOMETHANE	7	U
75-01-4	VINYL CHLORIDE	7	U
75-00-3	CHLOROETHANE	7	U
75-09-2	METHYLENE CHLORIDE	7	U
67-64-1	ACETONE	110	B
75-35-4	1 1-DICHLOROETHENE	7	U
75-34-3	1 1-DICHLOROETHANE	7	U
67-66-3	CHLOROFORM	7	U
107-06-2	1 2-DICHLOROETHANE	7	U
78-93-3	2-BUTANONE	32	U
71-55-6	1 1 1-TRICHLOROETHANE	7	U
56-23-5	CARBON TETRACHLORIDE	7	U
75-27-4	BROMODICHLOROMETHANE	7	U
78-87-5	1 2-DICHLOROPROPANE	7	U
79-01-6	TRICHLOROETHENE	7	U
124-48-1	DIBROMOCHLOROMETHANE	7	U
79-00-5	1 1 2-TRICHLOROETHANE	7	U
71-43-2	BENZENE	7	U
75-25-2	BROMOFORM	7	U
108-10-1	4-METHYL-2-PENTANONE	7	U
591-78-6	2-HEXANONE	7	U
127-18-4	TETRACHLOROETHENE	7	U
108-88-3	TOLUENE	3	J
79-34-5	1 1 2 2-TETRACHLOROETHANE	7	U
108-90-7	CHLOROBENZENE	7	U
100-41-4	ETHYL BENZENE	7	U
100-42-5	STYRENE	7	U
156-59-2	cis-1 2-DICHLOROETHENE	7	U
156-60-5	trans-1 2-DICHLOROETHENE	7	U
13-302-07	m, p-XYLENES	7	U
95-47-6	o-XYLENE	7	U
106-93-4	1 2-DIBROMOETHANE	7	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	7	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD128

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) SOIL

Lab Sample ID: 27758.31

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: I22486.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 26

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND		
96-18-4-----	1 2 3-TRICHLOROPROPANE	7	U
75-71-8-----	DICHLORODIFLUOROMETHANE	7	U
75-69-4-----	TRICHLOROFLUOROMETHANE	7	U
74-95-3-----	DIBROMOMETHANE	7	U
96-12-8-----	1 2-DIBROMO-3-CHLOROPROPANE	7	U
108-86-1-----	BROMOBENZENE	7	U
104-51-8-----	n-BUTYLBENZENE	7	U
98-06-6-----	tert-BUTYLBENZENE	7	U
135-98-8-----	sec-BUTYLBENZENE	7	U
95-49-8-----	2-CHLOROTOLUENE	7	U
106-43-4-----	4-CHLOROTOLUENE	7	U
95-50-1-----	1 2-DICHLOROBENZENE	7	U
541-73-1-----	1 3-DICHLOROBENZENE	7	U
106-46-7-----	1 4-DICHLOROBENZENE	7	U
142-28-9-----	1 3-DICHLOROPROPANE	7	U
594-20-7-----	2 2-DICHLOROPROPANE	7	U
563-58-6-----	1 1-DICHLOROPROPENE	7	U
87-68-3-----	HEXACHLOROBUTADIENE	7	U
98-82-8-----	ISOPROPYLBENZENE	7	U
99-87-6-----	p-ISOPROPYLTOLUENE	7	U
91-20-3-----	NAPHTHALENE	7	U
103-65-1-----	n-PROPYLBENZENE	7	U
87-61-6-----	1 2 3-TRICHLOROBENZENE	7	U
120-82-1-----	1 2 4-TRICHLOROBENZENE	7	U
95-63-6-----	1 2 4-TRIMETHYLBENZENE	7	U
108-67-8-----	1 3 5-TRIMETHYLBENZENE	7	U
74-97-5-----	BROMOCHLOROMETHANE	7	U

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD128

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) SOIL

Lab Sample ID: 27758.31

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 000511.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 26 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 8.0

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	440	U
111-44-4	bis(2-Chloroethyl) ether	440	U
95-57-8	2-Chlorophenol	440	U
541-73-1	1,3-Dichlorobenzene	440	U
106-46-7	1,4-Dichlorobenzene	440	U
100-51-6	Benzyl alcohol	440	U
95-50-1	1,2-Dichlorobenzene	440	U
95-48-7	2-Methylphenol	440	U
108-60-1	bis(2-Chloroisopropyl) ether	440	U
106-44-5	4-Methylphenol	440	U
621-64-7	N-Nitroso-di-n-propylamine	440	U
67-72-1	Hexachloroethane	440	U
98-95-3	Nitrobenzene	440	U
78-59-1	Isophorone	440	U
88-75-5	2-Nitrophenol	440	U
105-67-9	2,4-Dimethylphenol	440	U
65-85-0	Benzoic Acid	2200	U
111-91-1	bis(2-Chloroethoxy) methane	440	U
120-83-2	2,4-Dichlorophenol	440	U
120-82-1	1,2,4-Trichlorobenzene	440	U
91-20-3	Naphthalene	440	U
106-47-8	4-Chloroaniline	440	U
87-68-3	Hexachlorobutadiene	440	U
59-50-7	4-Chloro-3-methylphenol	440	U
91-57-6	2-Methylnaphthalene	440	U
77-47-4	Hexachlorocyclopentadiene	440	U
88-06-2	2,4,6-Trichlorophenol	440	U
95-95-4	2,4,5-Trichlorophenol	2200	U
91-58-7	2-Chloronaphthalene	440	U
88-74-4	2-Nitroaniline	2200	U
131-11-3	Dimethylphthalate	440	U
208-96-8	Acenaphthylene	440	U
606-20-2	2,6-Dinitrotoluene	440	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD128RE

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) SOIL

Lab Sample ID: 27758.31RA

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 000535.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 26 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 8.0

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
108-95-2-----	Phenol	440	U
111-44-4-----	bis(2-Chloroethyl)ether	440	U
95-57-8-----	2-Chlorophenol	440	U
541-73-1-----	1,3-Dichlorobenzene	440	U
106-46-7-----	1,4-Dichlorobenzene	440	U
100-51-6-----	Benzyl alcohol	440	U
95-50-1-----	1,2-Dichlorobenzene	440	U
95-48-7-----	2-Methylphenol	440	U
108-60-1-----	bis(2-Chloroisopropyl)ether	440	U
106-44-5-----	4-Methylphenol	440	U
621-64-7-----	N-Nitroso-di-n-propylamine	440	U
67-72-1-----	Hexachloroethane	440	U
98-95-3-----	Nitrobenzene	440	U
78-59-1-----	Isophorone	440	U
88-75-5-----	2-Nitrophenol	440	U
105-67-9-----	2,4-Dimethylphenol	440	U
65-85-0-----	Benzoic Acid	2200	U
111-91-1-----	bis(2-Chloroethoxy)methane	440	U
120-83-2-----	2,4-Dichlorophenol	440	U
120-82-1-----	1,2,4-Trichlorobenzene	440	U
91-20-3-----	Naphthalene	440	U
106-47-8-----	4-Chloroaniline	440	U
87-68-3-----	Hexachlorobutadiene	440	U
59-50-7-----	4-Chloro-3-methylphenol	440	U
91-57-6-----	2-Methylnaphthalene	440	U
77-47-4-----	Hexachlorocyclopentadiene	440	U
88-06-2-----	2,4,6-Trichlorophenol	440	U
95-95-4-----	2,4,5-Trichlorophenol	2200	U
91-58-7-----	2-Chloronaphthalene	440	U
88-74-4-----	2-Nitroaniline	2200	U
131-11-3-----	Dimethylphthalate	440	U
208-96-8-----	Acenaphthylene	440	U
606-20-2-----	2,6-Dinitrotoluene	440	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SD128RE

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) SOIL

Lab Sample ID: 27758.31RA

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 000535.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 26 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 8.0

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene	440	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW102

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.17

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL495.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. _____

Date Analyzed: 12/02/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.

COMPOUND

Q

74-87-3	-----CHLOROMETHANE	5	U
74-83-9	-----BROMOMETHANE	5	U
75-01-4	-----VINYL CHLORIDE	5	U
75-00-3	-----CHLOROETHANE	5	U
75-09-2	-----METHYLENE CHLORIDE	5	U
67-64-1	-----ACETONE	37	
75-35-4	-----1 1-DICHLOROETHENE	5	U
75-34-3	-----1 1-DICHLOROETHANE	5	U
67-66-3	-----CHLOROFORM	2	J
107-06-2	-----1 2-DICHLOROETHANE	5	U
78-93-3	-----2-BUTANONE	5	U
71-55-6	-----1 1 1-TRICHLOROETHANE	5	U
56-23-5	-----CARBON TETRACHLORIDE	5	U
75-27-4	-----BROMODICHLOROMETHANE	4	J
78-87-5	-----1 2-DICHLOROPROPANE	5	U
79-01-6	-----TRICHLOROETHENE	5	U
124-48-1	-----DIBROMOCHLOROMETHANE	5	U
79-00-5	-----1 1 2-TRICHLOROETHANE	5	U
71-43-2	-----BENZENE	5	U
75-25-2	-----BROMOFORM	2	J
108-10-1	-----4-METHYL-2-PENTANONE	5	U
591-78-6	-----2-HEXANONE	5	U
127-18-4	-----TETRACHLOROETHENE	5	U
108-88-3	-----TOLUENE	5	U
79-34-5	-----1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	-----CHLOROBENZENE	5	U
100-41-4	-----ETHYL BENZENE	5	U
100-42-5	-----STYRENE	5	U
156-59-2	-----cis-1 2-DICHLOROETHENE	5	U
156-60-5	-----trans-1 2-DICHLOROETHENE	5	U
13-302-07	-----m,p-XYLENES	5	U
95-47-6	-----o-XYLENE	5	U
106-93-4	-----1 2-DIBROMOETHANE	5	U
630-20-6	-----1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW102

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.17

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL495.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. _____

Date Analyzed: 12/02/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
ug/L or ug/Kg) UG/L

CAS NO.

COMPOUND

Q

96-18-4-----1 2 3-TRICHLOROPROPANE	5	U
75-71-8-----DICHLORODIFLUOROMETHANE	5	U
75-69-4-----TRICHLOROFLUOROMETHANE	5	U
74-95-3-----DIBROMOMETHANE	5	U
96-12-8-----1 2-DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----BROMOBENZENE	5	U
104-51-8-----n-BUTYLBENZENE	5	U
98-06-6-----tert-BUTYLBENZENE	5	U
135-98-8-----sec-BUTYLBENZENE	5	U
95-49-8-----2-CHLOROTOLUENE	5	U
106-43-4-----4-CHLOROTOLUENE	5	U
95-50-1-----1 2-DICHLOROBENZENE	5	U
541-73-1-----1 3-DICHLOROBENZENE	5	U
106-46-7-----1 4-DICHLOROBENZENE	5	U
142-28-9-----1 3-DICHLOROPROPANE	5	U
594-20-7-----2 2-DICHLOROPROPANE	5	U
563-58-6-----1 1-DICHLOROPROPENE	5	U
87-68-3-----HEXACHLOROBUTADIENE	5	U
98-82-8-----ISOPROPYLBENZENE	5	U
99-87-6-----p-ISOPROPYLTOLUENE	19	U
91-20-3-----NAPHTHALENE	1	J
103-65-1-----n-PROPYLBENZENE	5	U
87-61-6-----1 2 3-TRICHLOROBENZENE	5	U
120-82-1-----1 2 4-TRICHLOROBENZENE	5	U
95-63-6-----1 2 4-TRIMETHYLBENZENE	5	U
108-67-8-----1 3 5-TRIMETHYLBENZENE	5	U
74-97-5-----BROMOCHLOROMETHANE	5	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW102

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.17

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3736.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/23/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/11/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
---------	----------	--	---

108-95-2-----Phenol	10	U
111-44-4-----bis(2-Chloroethyl)ether	10	U
95-57-8-----2-Chlorophenol	10	U
541-73-1-----1,3-Dichlorobenzene	10	U
106-46-7-----1,4-Dichlorobenzene	10	U
100-51-6-----Benzyl alcohol	1	J
95-50-1-----1,2-Dichlorobenzene	10	U
95-48-7-----2-Methylphenol	10	U
108-60-1-----bis(2-Chloroisopropyl)ether	10	U
106-44-5-----4-Methylphenol	10	U
621-64-7-----N-Nitroso-di-n-propylamine	10	U
67-72-1-----Hexachloroethane	10	U
98-95-3-----Nitrobenzene	10	U
78-59-1-----Isophorone	10	U
88-75-5-----2-Nitrophenol	10	U
105-67-9-----2,4-Dimethylphenol	10	U
65-85-0-----Benzoic Acid	4	J
111-91-1-----bis(2-Chloroethoxy)methane	10	U
120-83-2-----2,4-Dichlorophenol	10	U
120-82-1-----1,2,4-Trichlorobenzene	10	U
91-20-3-----Naphthalene	10	U
106-47-8-----4-Chloroaniline	10	U
87-68-3-----Hexachlorobutadiene	10	U
59-50-7-----4-Chloro-3-methylphenol	10	U
91-57-6-----2-Methylnaphthalene	2	J
77-47-4-----Hexachlorocyclopentadiene	10	U
88-06-2-----2,4,6-Trichlorophenol	10	U
95-95-4-----2,4,5-Trichlorophenol	50	U
91-58-7-----2-Chloronaphthalene	10	U
88-74-4-----2-Nitroaniline	50	U
131-11-3-----Dimethylphthalate	10	U
208-96-8-----Acenaphthylene	10	U
606-20-2-----2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW102

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.17

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3736.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/23/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/11/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
---------	----------	--	---

99-09-2-----3-Nitroaniline	50	U
83-32-9-----Acenaphthene	10	U
121-14-2-----2,4-Dinitrotoluene	10	U
51-28-5-----2,4-Dinitrophenol	50	U
100-02-7-----4-Nitrophenol	50	U
132-64-9-----Dibenzofuran	10	U
84-66-2-----Diethylphthalate	10	U
7005-72-3-----4-Chlorophenyl-phenylether	10	U
86-73-7-----Fluorene	10	U
100-01-6-----4-Nitroaniline	50	U
534-52-1-----4,6-Dinitro-2-methylphenol	50	U
86-30-6-----N-Nitrosodiphenylamine (1)	10	U
101-55-3-----4-Bromophenylphenylether	10	U
118-74-1-----Hexachlorobenzene	10	U
87-86-5-----Pentachlorophenol	50	U
85-01-8-----Phenanthrene	10	U
120-12-7-----Anthracene	10	U
84-74-2-----Di-n-butylphthalate	1	J
206-44-0-----Fluoranthene	10	U
129-00-0-----Pyrene	10	U
85-68-7-----Butylbenzylphthalate	10	U
91-94-1-----3,3'-Dichlorobenzidine	20	U
56-55-3-----Benzo(a)anthracene	10	U
218-01-9-----Chrysene	10	U
117-81-7-----bis(2-Ethylhexyl)phthalate	11	U
117-84-0-----Di-n-octylphthalate	1	J
205-99-2-----Benzo(b)fluoranthene	10	U
207-08-9-----Benzo(k)fluoranthene	10	U
50-32-8-----Benzo(a)pyrene	10	U
193-39-5-----Indeno(1,2,3-cd)pyrene	10	U
53-70-3-----Dibenz(a,h)anthracene	10	U
191-24-2-----Benzo(g,h,i)perylene	10	U
110-86-1-----Pyridine	50	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW102

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.17

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3736.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/23/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/11/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-94-3-----	1,2,4,5-Tetrachlorobenzene__	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW103

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.23

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL500.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. _____

Date Analyzed: 12/02/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	UG/L	Q
74-87-3	-----CHLOROMETHANE	5	U
74-83-9	-----BROMOMETHANE	5	U
75-01-4	-----VINYL CHLORIDE	5	U
75-00-3	-----CHLOROETHANE	5	U
75-09-2	-----METHYLENE CHLORIDE	5	U
67-64-1	-----ACETONE	4	J
75-35-4	-----1 1-DICHLOROETHENE	5	U
75-34-3	-----1 1-DICHLOROETHANE	5	U
67-66-3	-----CHLOROFORM	5	U
107-06-2	-----1 2-DICHLOROETHANE	5	U
78-93-3	-----2-BUTANONE	5	U
71-55-6	-----1 1 1-TRICHLOROETHANE	5	U
56-23-5	-----CARBON TETRACHLORIDE	5	U
75-27-4	-----BROMODICHLOROMETHANE	5	U
78-87-5	-----1 2-DICHLOROPROPANE	5	U
79-01-6	-----TRICHLOROETHENE	5	U
124-48-1	-----DIBROMOCHLOROMETHANE	5	U
79-00-5	-----1 1 2-TRICHLOROETHANE	5	U
71-43-2	-----BENZENE	5	U
75-25-2	-----BROMOFORM	5	U
108-10-1	-----4-METHYL-2-PENTANONE	5	U
591-78-6	-----2-HEXANONE	5	U
127-18-4	-----TETRACHLOROETHENE	5	U
108-88-3	-----TOLUENE	5	U
79-34-5	-----1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	-----CHLOROBENZENE	5	U
100-41-4	-----ETHYL BENZENE	5	U
100-42-5	-----STYRENE	5	U
156-59-2	-----cis-1 2-DICHLOROETHENE	5	U
156-60-5	-----trans-1 2-DICHLOROETHENE	5	U
13-302-07	-----m,p-XYLENES	5	U
95-47-6	-----o-XYLENE	5	U
106-93-4	-----1 2-DIBROMOETHANE	5	U
630-20-6	-----1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW103

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.23

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL500.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. _____

Date Analyzed: 12/02/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	UG/L	Q
96-18-4-----	1 2 3-TRICHLOROPROPANE	5	U
75-71-8-----	DICHLORODIFLUOROMETHANE	5	U
75-69-4-----	TRICHLOROFLUOROMETHANE	5	U
74-95-3-----	DIBROMOMETHANE	5	U
96-12-8-----	1 2-DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----	BROMOBENZENE	5	U
104-51-8-----	n-BUTYLBENZENE	5	U
98-06-6-----	tert-BUTYLBENZENE	5	U
135-98-8-----	sec-BUTYLBENZENE	5	U
95-49-8-----	2-CHLOROTOLUENE	5	U
106-43-4-----	4-CHLOROTOLUENE	5	U
95-50-1-----	1 2-DICHLOROBENZENE	5	U
541-73-1-----	1 3-DICHLOROBENZENE	5	U
106-46-7-----	1 4-DICHLOROBENZENE	5	U
142-28-9-----	1 3-DICHLOROPROPANE	5	U
594-20-7-----	2 2-DICHLOROPROPANE	5	U
563-58-6-----	1 1-DICHLOROPROPENE	5	U
87-68-3-----	HEXACHLOROBUTADIENE	5	U
98-82-8-----	ISOPROPYLBENZENE	5	U
99-87-6-----	p-ISOPROPYLTOLUENE	5	U
91-20-3-----	NAPHTHALENE	5	U
103-65-1-----	n-PROPYLBENZENE	5	U
87-61-6-----	1 2 3-TRICHLOROBENZENE	5	U
120-82-1-----	1 2 4-TRICHLOROBENZENE	5	U
95-63-6-----	1 2 4-TRIMETHYLBENZENE	5	U
108-67-8-----	1 3 5-TRIMETHYLBENZENE	5	U
74-97-5-----	BROMOCHLOROMETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW104

Lab Name: SWL-TULSA

Contract: FT. HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 28008

Matrix: (soil/water) WATER

Lab Sample ID: 28008.04

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL707.D

Level: (low/med) LOW

Date Received: 12/17/96

% Moisture: not dec. _____

Date Analyzed: 12/20/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
96-18-4-----1 2 3-	TRICHLOROPROPANE	5	U
75-71-8-----	DICHLORODIFLUOROMETHANE	5	U
75-69-4-----	TRICHLOROFLUOROMETHANE	5	U
74-95-3-----	DIBROMOMETHANE	5	U
96-12-8-----1 2-	DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----	BROMOBENZENE	5	U
104-51-8-----n-	BUTYLBENZENE	5	U
98-06-6-----tert-	BUTYLBENZENE	5	U
135-98-8-----sec-	BUTYLBENZENE	5	U
95-49-8-----2-	CHLOROTOLUENE	5	U
106-43-4-----4-	CHLOROTOLUENE	5	U
95-50-1-----1 2-	DICHLOROBENZENE	5	U
541-73-1-----1 3-	DICHLOROBENZENE	5	U
106-46-7-----1 4-	DICHLOROBENZENE	5	U
142-28-9-----1 3-	DICHLOROPROPANE	5	U
594-20-7-----2 2-	DICHLOROPROPANE	5	U
563-58-6-----1 1-	DICHLOROPROPENE	5	U
87-68-3-----	HEXACHLOROBUTADIENE	5	U
98-82-8-----	ISOPROPYLBENZENE	5	U
99-87-6-----p-	ISOPROPYLTOLUENE	5	U
91-20-3-----	NAPHTHALENE	5	U
103-65-1-----n-	PROPYLBENZENE	5	U
87-61-6-----1 2 3-	TRICHLOROBENZENE	5	U
120-82-1-----1 2 4-	TRICHLOROBENZENE	5	U
95-63-6-----1 2 4-	TRIMETHYLBENZENE	5	U
108-67-8-----1 3 5-	TRIMETHYLBENZENE	5	U
74-97-5-----	BROMOCHLOROMETHANE	5	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW104 T

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 28008

Matrix: (soil/water) WATER

Lab Sample ID: 28008.04

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: P10774.D

Level: (low/med) LOW

Date Received: 12/17/96

% Moisture: not dec. 0 dec.

Date Extracted: 12/18/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 01/06/97

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.

COMPOUND

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl) ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl) ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy) methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW104

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 28008

Matrix: (soil/water) WATER

Lab Sample ID: 28008.04

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: P10774.D

Level: (low/med) LOW

Date Received: 12/17/96

% Moisture: not dec. 0 dec.

Date Extracted: 12/18/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 01/06/97

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	UG/L	Q
99-09-2-----	3-Nitroaniline	50	U
83-32-9-----	Acenaphthene	10	U
121-14-2-----	2,4-Dinitrotoluene	10	U
51-28-5-----	2,4-Dinitrophenol	50	U
100-02-7-----	4-Nitrophenol	50	U
132-64-9-----	Dibenzofuran	10	U
84-66-2-----	Diethylphthalate	10	U
7005-72-3-----	4-Chlorophenyl-phenylether	10	U
86-73-7-----	Fluorene	10	U
100-01-6-----	4-Nitroaniline	50	U
534-52-1-----	4,6-Dinitro-2-methylphenol	50	U
86-30-6-----	N-Nitrosodiphenylamine (1)	10	U
101-55-3-----	4-Bromophenylphenylether	10	U
118-74-1-----	Hexachlorobenzene	10	U
87-86-5-----	Pentachlorophenol	50	U
85-01-8-----	Phenanthrene	10	U
120-12-7-----	Anthracene	10	U
84-74-2-----	Di-n-butylphthalate	10	U
206-44-0-----	Fluoranthene	10	U
129-00-0-----	Pyrene	10	U
85-68-7-----	Butylbenzylphthalate	10	U
91-94-1-----	3,3'-Dichlorobenzidine	20	U
56-55-3-----	Benzo(a)anthracene	10	U
218-01-9-----	Chrysene	10	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	10	U
117-84-0-----	Di-n-octylphthalate	10	U
205-99-2-----	Benzo(b)fluoranthene	10	U
207-08-9-----	Benzo(k)fluoranthene	10	U
50-32-8-----	Benzo(a)pyrene	10	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	10	U
53-70-3-----	Dibenz(a,h)anthracene	10	U
191-24-2-----	Benzo(g,h,i)perylene	10	U
110-86-1-----	Pyridine	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW104

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 28008

Matrix: (soil/water) WATER

Lab Sample ID: 28008.04

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: P10774.D

Level: (low/med) LOW

Date Received: 12/17/96

% Moisture: not dec. 0 dec.

Date Extracted: 12/18/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 01/06/97

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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95-9403-----	1,2,4,5-Tetrachlorobenzene__	10	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW105

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.07

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16790.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	UG/L	Q
74-87-3	CHLOROMETHANE	5	U
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	5	U
67-64-1	ACETONE	21	U
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	5	U
107-06-2	1 2-DICHLOROETHANE	5	U
78-93-3	2-BUTANONE	5	U
71-55-6	1 1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	5	U
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	5	U
124-48-1	DIBROMOCHLOROMETHANE	5	U
79-00-5	1 1 2-TRICHLOROETHANE	5	U
71-43-2	BENZENE	5	U
75-25-2	BROMOFORM	5	U
108-10-1	4-METHYL-2-PENTANONE	8	U
591-78-6	2-HEXANONE	5	U
127-18-4	TETRACHLOROETHENE	5	U
108-88-3	TOLUENE	5	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	5	U
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	1	J
95-47-6	o-XYLENE	5	U
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NC

29SW105

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27685

Matrix: (soil/water) WATER

Lab Sample ID: 27685.11

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: V16191.D

Level: (low/med) LOW

Date Received: 11/19/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.4

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-94-3-----	1,2,4,5-Tetrachlorobenzene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW106

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.18

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL496.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. _____

Date Analyzed: 12/02/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	UG/L	Q
96-18-4-----1	2 3-TRICHLOROPROPANE	5	U
75-71-8-----	DICHLORODIFLUOROMETHANE	5	U
75-69-4-----	TRICHLOROFLUOROMETHANE	5	U
74-95-3-----	DIBROMOMETHANE	5	U
96-12-8-----1	2-DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----	BROMOBENZENE	5	U
104-51-8-----	n-BUTYLBENZENE	2	J
98-06-6-----	tert-BUTYLBENZENE	5	U
135-98-8-----	sec-BUTYLBENZENE	5	U
95-49-8-----	2-CHLOROTOLUENE	5	U
106-43-4-----	4-CHLOROTOLUENE	5	U
95-50-1-----	1 2-DICHLOROBENZENE	5	U
541-73-1-----	1 3-DICHLOROBENZENE	5	U
106-46-7-----	1 4-DICHLOROBENZENE	5	U
142-28-9-----	1 3-DICHLOROPROPANE	5	U
594-20-7-----	2 2-DICHLOROPROPANE	5	U
563-58-6-----	1 1-DICHLOROPROPENE	5	U
87-68-3-----	HEXACHLOROBUTADIENE	5	U
98-82-8-----	ISOPROPYLBENZENE	5	U
99-87-6-----	p-ISOPROPYLTOLUENE	5	U
91-20-3-----	NAPHTHALENE	49	U
103-65-1-----	n-PROPYLBENZENE	1	J
87-61-6-----	1 2 3-TRICHLOROBENZENE	5	U
120-82-1-----	1 2 4-TRICHLOROBENZENE	5	U
95-63-6-----	1 2 4-TRIMETHYLBENZENE	34	U
108-67-8-----	1 3 5-TRIMETHYLBENZENE	6	U
74-97-5-----	BROMOCHLOROMETHANE	5	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW106

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.18

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3737.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/23/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/11/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.6

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene__	10	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW107

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.08

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16791.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	CHLOROMETHANE	10	
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	5	U
67-64-1	ACETONE	20	
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	5	U
107-06-2	1 2-DICHLOROETHANE	5	U
78-93-3	2-BUTANONE	5	U
71-55-6	1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	5	U
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	5	U
124-48-1	DIBROMOCHLOROMETHANE	5	U
79-00-5	1 1 2-TRICHLOROETHANE	5	U
71-43-2	BENZENE	5	U
75-25-2	BROMOFORM	5	U
108-10-1	4-METHYL-2-PENTANONE	4	J
591-78-6	2-HEXANONE	5	U
127-18-4	TETRACHLOROETHENE	5	U
108-88-3	TOLUENE	5	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	5	U
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	5	U
95-47-6	o-XYLENE	5	U
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW107

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.08

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16791.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
96-18-4-----1 2 3-TRICHLOROPROPANE		5	U
75-71-8-----DICHLORODIFLUOROMETHANE		5	U
75-69-4-----TRICHLOROFLUOROMETHANE		5	U
74-95-3-----DIBROMOMETHANE		5	U
96-12-8-----1 2-DIBROMO-3-CHLOROPROPANE		5	U
108-86-1-----BROMOBENZENE		5	U
104-51-8-----n-BUTYLBENZENE		5	U
98-06-6-----tert-BUTYLBENZENE		5	U
135-98-8-----sec-BUTYLBENZENE		5	U
95-49-8-----2-CHLOROTOLUENE		5	U
106-43-4-----4-CHLOROTOLUENE		5	U
95-50-1-----1 2-DICHLOROBENZENE		5	U
541-73-1-----1 3-DICHLOROBENZENE		5	U
106-46-7-----1 4-DICHLOROBENZENE		5	U
142-28-9-----1 3-DICHLOROPROPANE		5	U
594-20-7-----2 2-DICHLOROPROPANE		5	U
563-58-6-----1 1-DICHLOROPROPENE		5	U
87-68-3-----HEXACHLOROBUTADIENE		5	U
98-82-8-----ISOPROPYLBENZENE		5	U
99-87-6-----p-ISOPROPYLTOLUENE		5	U
91-20-3-----NAPHTHALENE		5	U
103-65-1-----n-PROPYLBENZENE		5	U
87-61-6-----1 2 3-TRICHLOROBENZENE		5	U
120-82-1-----1 2 4-TRICHLOROBENZENE		5	U
95-63-6-----1 2 4-TRIMETHYLBENZENE		5	U
108-67-8-----1 3 5-TRIMETHYLBENZENE		5	U
74-97-5-----BROMOCHLOROMETHANE		5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW108

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.19

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL497.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. _____

Date Analyzed: 12/02/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	CHLOROMETHANE	5	U
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	5	U
67-64-1	ACETONE	38	U
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	5	U
107-06-2	1 2-DICHLOROETHANE	5	U
78-93-3	2-BUTANONE	5	U
71-55-6	1 1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	1	J
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	5	U
124-48-1	DIBROMOCHLOROMETHANE	1	J
79-00-5	1 1 2-TRICHLOROETHANE	5	U
71-43-2	BENZENE	5	U
75-25-2	BROMOFORM	5	U
108-10-1	4-METHYL-2-PENTANONE	2	J
591-78-6	2-HEXANONE	5	U
127-18-4	TETRACHLOROETHENE	5	U
108-88-3	TOLUENE	8	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	4	J
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	26	U
95-47-6	o-XYLENE	13	U
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW108

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.19

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL497.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. _____

Date Analyzed: 12/02/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
ug/L or ug/Kg) UG/L

CAS NO.

COMPOUND

Q

96-18-4-----1 2 3-TRICHLOROPROPANE	5	U
75-71-8-----DICHLORODIFLUOROMETHANE	5	U
75-69-4-----TRICHLOROFLUOROMETHANE	5	U
74-95-3-----DIBROMOMETHANE	5	U
96-12-8-----1 2-DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----BROMOBENZENE	5	U
104-51-8-----n-BUTYLBENZENE	5	U
98-06-6-----tert-BUTYLBENZENE	5	U
135-98-8-----sec-BUTYLBENZENE	5	U
95-49-8-----2-CHLOROTOLUENE	5	U
106-43-4-----4-CHLOROTOLUENE	5	U
95-50-1-----1 2-DICHLOROBENZENE	5	U
541-73-1-----1 3-DICHLOROBENZENE	5	U
106-46-7-----1 4-DICHLOROBENZENE	5	U
142-28-9-----1 3-DICHLOROPROPANE	5	U
594-20-7-----2 2-DICHLOROPROPANE	5	U
563-58-6-----1 1-DICHLOROPROPENE	5	U
87-68-3-----HEXACHLOROBUTADIENE	5	U
98-82-8-----ISOPROPYLBENZENE	1	J
99-87-6-----p-ISOPROPYLTOLUENE	5	U
91-20-3-----NAPHTHALENE	6	J
103-65-1-----n-PROPYLBENZENE	1	J
87-61-6-----1 2 3-TRICHLOROBENZENE	5	U
120-82-1-----1 2 4-TRICHLOROBENZENE	5	U
95-63-6-----1 2 4-TRIMETHYLBENZENE	32	U
108-67-8-----1 3 5-TRIMETHYLBENZENE	9	U
74-97-5-----BROMOCHLOROMETHANE	5	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW108

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.19

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3738.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/23/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/11/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene__	10	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW110

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.09

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16792.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

74-87-3-----	CHLOROMETHANE	5	U
74-83-9-----	BROMOMETHANE	5	U
75-01-4-----	VINYL CHLORIDE	5	U
75-00-3-----	CHLOROETHANE	5	U
75-09-2-----	METHYLENE CHLORIDE	1	J
67-64-1-----	ACETONE	73	
75-35-4-----	1 1-DICHLOROETHENE	5	U
75-34-3-----	1 1-DICHLOROETHANE	5	U
67-66-3-----	CHLOROFORM	5	U
107-06-2-----	1 2-DICHLOROETHANE	1	J
78-93-3-----	2-BUTANONE	8	
71-55-6-----	1 1 1-TRICHLOROETHANE	5	U
56-23-5-----	CARBON TETRACHLORIDE	5	U
75-27-4-----	BROMODICHLOROMETHANE	5	U
78-87-5-----	1 2-DICHLOROPROPANE	1	J
79-01-6-----	TRICHLOROETHENE	5	U
124-48-1-----	DIBROMOCHLOROMETHANE	5	U
79-00-5-----	1 1 2-TRICHLOROETHANE	5	U
71-43-2-----	BENZENE	2	J
75-25-2-----	BROMOFORM	5	U
108-10-1-----	4-METHYL-2-PENTANONE	5	J
591-78-6-----	2-HEXANONE	5	U
127-18-4-----	TETRACHLOROETHENE	5	U
108-88-3-----	TOLUENE	5	U
79-34-5-----	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7-----	CHLOROBENZENE	5	U
100-41-4-----	ETHYL BENZENE	5	U
100-42-5-----	STYRENE	5	U
156-59-2-----	cis-1 2-DICHLOROETHENE	2	J
156-60-5-----	trans-1 2-DICHLOROETHENE	5	U
13-302-07-----	m,p-XYLENES	1	J
95-47-6-----	o-XYLENE	5	U
106-93-4-----	1 2-DIBROMOETHANE	5	U
630-20-6-----	1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW110

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.09

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16792.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

96-18-4-----1 2 3-TRICHLOROPROPANE	5	U
75-71-8-----DICHLORODIFLUOROMETHANE	5	U
75-69-4-----TRICHLOROFUOROMETHANE	5	U
74-95-3-----DIBROMOMETHANE	5	U
96-12-8-----1 2-DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----BROMOBENZENE	5	U
104-51-8-----n-BUTYLBENZENE	5	U
98-06-6-----tert-BUTYLBENZENE	5	U
135-98-8-----sec-BUTYLBENZENE	5	U
95-49-8-----2-CHLOROTOLUENE	5	U
106-43-4-----4-CHLOROTOLUENE	5	U
95-50-1-----1 2-DICHLOROBENZENE	5	U
541-73-1-----1 3-DICHLOROBENZENE	5	U
106-46-7-----1 4-DICHLOROBENZENE	5	U
142-28-9-----1 3-DICHLOROPROPANE	5	U
594-20-7-----2 2-DICHLOROPROPANE	5	U
563-58-6-----1 1-DICHLOROPROPENE	5	U
87-68-3-----HEXACHLOROBUTADIENE	5	U
98-82-8-----ISOPROPYLBENZENE	5	U
99-87-6-----p-ISOPROPYLTOLUENE	5	U
91-20-3-----NAPHTHALENE	5	U
103-65-1-----n-PROPYLBENZENE	5	U
87-61-6-----1 2 3-TRICHLOROBENZENE	5	U
120-82-1-----1 2 4-TRICHLOROBENZENE	5	U
95-63-6-----1 2 4-TRIMETHYLBENZENE	5	U
108-67-8-----1 3 5-TRIMETHYLBENZENE	5	U
74-97-5-----BROMOCHLOROMETHANE	5	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW110

b Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27685

Matrix: (soil/water) WATER

Lab Sample ID: 27685.13

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: V16193.D

Level: (low/med) LOW

Date Received: 11/19/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 8.3

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2-----	3-Nitroaniline	50	U
83-32-9-----	Acenaphthene	10	U
121-14-2-----	2,4-Dinitrotoluene	10	U
51-28-5-----	2,4-Dinitrophenol	50	U
100-02-7-----	4-Nitrophenol	1	J
132-64-9-----	Dibenzofuran	10	U
84-66-2-----	Diethylphthalate	10	U
7005-72-3-----	4-Chlorophenyl-phenylether	10	U
86-73-7-----	Fluorene	10	U
100-01-6-----	4-Nitroaniline	50	U
534-52-1-----	4,6-Dinitro-2-methylphenol	50	U
86-30-6-----	N-Nitrosodiphenylamine (1)	10	U
101-55-3-----	4-Bromophenylphenylether	10	U
118-74-1-----	Hexachlorobenzene	10	U
87-86-5-----	Pentachlorophenol	50	U
85-01-8-----	Phenanthrene	10	U
120-12-7-----	Anthracene	10	U
84-74-2-----	Di-n-butylphthalate	10	U
206-44-0-----	Fluoranthene	10	U
129-00-0-----	Pyrene	10	U
85-68-7-----	Butylbenzylphthalate	10	U
91-94-1-----	3,3'-Dichlorobenzidine	20	U
56-55-3-----	Benzo(a)anthracene	10	U
218-01-9-----	Chrysene	10	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	29	B
117-84-0-----	Di-n-octylphthalate	10	U
205-99-2-----	Benzo(b)fluoranthene	10	U
207-08-9-----	Benzo(k)fluoranthene	10	U
50-32-8-----	Benzo(a)pyrene	10	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	10	U
53-70-3-----	Dibenz(a,h)anthracene	10	U
191-24-2-----	Benzo(g,h,i)perylene	10	U
110-86-1-----	Pyridine	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

29SW110

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27685

Matrix: (soil/water) WATER

Lab Sample ID: 27685.13

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: V16193.D

Level: (low/med) LOW

Date Received: 11/19/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 8.3

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-94-3-----	1,2,4,5-Tetrachlorobenzene__	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW111

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.06

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16789.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	CHLOROMETHANE	5	U
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	5	U
67-64-1	ACETONE	10	U
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	5	U
107-06-2	1 2-DICHLOROETHANE	2	J
78-93-3	2-BUTANONE	5	U
71-55-6	1 1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	5	U
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	5	U
124-48-1	DIBROMOCHLOROMETHANE	5	U
79-00-5	1 1 2-TRICHLOROETHANE	5	U
71-43-2	BENZENE	5	U
75-25-2	BROMOFORM	5	U
108-10-1	4-METHYL-2-PENTANONE	5	U
591-78-6	2-HEXANONE	5	U
127-18-4	TETRACHLOROETHENE	5	U
108-88-3	TOLUENE	5	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	5	U
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	5	U
95-47-6	o-XYLENE	5	U
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW111

Name: SWL-TULSA Contract: FT HOOD
 Lab Code: SWOK Case No.: SAIC SAS No.: SDG No.: 27685
 Matrix: (soil/water) WATER Lab Sample ID: 27685.14
 Sample wt/vol: 1000 (g/mL) ML Lab File ID: V16194.D
 Level: (low/med) LOW Date Received: 11/19/96
 % Moisture: not dec. 0 dec. Date Extracted: 11/21/96
 Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 12/09/96
 Concentrated Extract Volume: 1000(uL)
 GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	2	J
111-44-4	bis(2-Chloroethyl) ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl) ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	2	J
111-91-1	bis(2-Chloroethoxy) methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW111

b Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27685

Matrix: (soil/water) WATER

Lab Sample ID: 27685.14

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: V16194.D

Level: (low/med) LOW

Date Received: 11/19/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/09/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.7

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2-----	3-Nitroaniline	50	U
83-32-9-----	Acenaphthene	10	U
121-14-2-----	2,4-Dinitrotoluene	10	U
51-28-5-----	2,4-Dinitrophenol	50	U
100-02-7-----	4-Nitrophenol	1	J
132-64-9-----	Dibenzofuran	10	U
84-66-2-----	Diethylphthalate	10	U
7005-72-3-----	4-Chlorophenyl-phenylether	10	U
86-73-7-----	Fluorene	10	U
100-01-6-----	4-Nitroaniline	50	U
534-52-1-----	4,6-Dinitro-2-methylphenol	50	U
86-30-6-----	N-Nitrosodiphenylamine (1)	10	U
101-55-3-----	4-Bromophenylphenylether	10	U
118-74-1-----	Hexachlorobenzene	10	U
87-86-5-----	Pentachlorophenol	50	U
85-01-8-----	Phenanthrene	10	U
120-12-7-----	Anthracene	10	U
84-74-2-----	Di-n-butylphthalate	10	U
206-44-0-----	Fluoranthene	10	U
129-00-0-----	Pyrene	10	U
85-68-7-----	Butylbenzylphthalate	10	U
91-94-1-----	3,3'-Dichlorobenzidine	20	U
56-55-3-----	Benzo(a)anthracene	10	U
218-01-9-----	Chrysene	10	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	5	JB
117-84-0-----	Di-n-octylphthalate	3	J
205-99-2-----	Benzo(b)fluoranthene	10	U
207-08-9-----	Benzo(k)fluoranthene	10	U
50-32-8-----	Benzo(a)pyrene	10	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	10	U
53-70-3-----	Dibenz(a,h)anthracene	10	U
191-24-2-----	Benzo(g,h,i)perylene	10	U
110-86-1-----	Pyridine	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW112

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.21

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16820.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/04/96

Column: (pack/cap) CAP

Dilution Factor: 2.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	UG/L	Q
74-87-3	CHLOROMETHANE	10	U
74-83-9	BROMOMETHANE	10	U
75-01-4	VINYL CHLORIDE	10	U
75-00-3	CHLOROETHANE	10	U
75-09-2	METHYLENE CHLORIDE	4	J
67-64-1	ACETONE	360	U
75-35-4	1 1-DICHLOROETHENE	10	U
75-34-3	1 1-DICHLOROETHANE	10	U
67-66-3	CHLOROFORM	10	U
107-06-2	1 2-DICHLOROETHANE	10	U
78-93-3	2-BUTANONE	160	U
71-55-6	1 1 1-TRICHLOROETHANE	10	U
56-23-5	CARBON TETRACHLORIDE	10	U
75-27-4	BROMODICHLOROMETHANE	10	U
78-87-5	1 2-DICHLOROPROPANE	10	U
79-01-6	TRICHLOROETHENE	6	J
124-48-1	DIBROMOCHLOROMETHANE	10	U
79-00-5	1 1 2-TRICHLOROETHANE	10	U
71-43-2	BENZENE	4	J
75-25-2	BROMOFORM	10	U
108-10-1	4-METHYL-2-PENTANONE	180	U
591-78-6	2-HEXANONE	10	U
127-18-4	TETRACHLOROETHENE	10	U
108-88-3	TOLUENE	38	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	10	U
108-90-7	CHLOROBENZENE	10	U
100-41-4	ETHYL BENZENE	12	U
100-42-5	STYRENE	10	U
156-59-2	cis-1 2-DICHLOROETHENE	10	U
156-60-5	trans-1 2-DICHLOROETHENE	10	U
13-302-07	m,p-XYLENES	64	U
95-47-6	o-XYLENE	28	U
106-93-4	1 2-DIBROMOETHANE	10	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW112

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.21

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16820.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/04/96

Column: (pack/cap) CAP

Dilution Factor: 2.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/L	Q
96-18-4-----1	2 3-TRICHLOROPROPANE	10	U
75-71-8-----	DICHLORODIFLUOROMETHANE	10	U
75-69-4-----	TRICHLOROFUOROMETHANE	10	U
74-95-3-----	DIBROMOMETHANE	10	U
96-12-8-----1	2-DIBROMO-3-CHLOROPROPANE	10	U
108-86-1-----	BROMOBENZENE	10	U
104-51-8-----	n-BUTYLBENZENE	5	J
98-06-6-----	tert-BUTYLBENZENE	10	U
135-98-8-----	sec-BUTYLBENZENE	10	U
95-49-8-----	2-CHLOROTOLUENE	10	U
106-43-4-----	4-CHLOROTOLUENE	10	U
95-50-1-----	1 2-DICHLOROBENZENE	2	J
541-73-1-----	1 3-DICHLOROBENZENE	10	U
106-46-7-----	1 4-DICHLOROBENZENE	10	U
142-28-9-----	1 3-DICHLOROPROPANE	10	U
594-20-7-----	2 2-DICHLOROPROPANE	10	U
563-58-6-----	1 1-DICHLOROPROPENE	10	U
87-68-3-----	HEXACHLOROBUTADIENE	6	J
98-82-8-----	ISOPROPYLBENZENE	4	J
99-87-6-----	p-ISOPROPYLTOLUENE	10	U
91-20-3-----	NAPHTHALENE	44	
103-65-1-----	n-PROPYLBENZENE	5	J
87-61-6-----	1 2 3-TRICHLOROBENZENE	3	J
120-82-1-----	1 2 4-TRICHLOROBENZENE	4	J
95-63-6-----	1 2 4-TRIMETHYLBENZENE	62	
108-67-8-----	1 3 5-TRIMETHYLBENZENE	10	U
74-97-5-----	BROMOCHLOROMETHANE	10	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW112

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.21

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3765.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl) ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	20	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	2	J
108-60-1	bis(2-Chloroisopropyl) ether	10	U
106-44-5	4-Methylphenol	14	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	6	J
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW112

b Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.21

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3765.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
121-14-2	2,4-Dinitrotoluene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenylphenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	J
117-84-0	Di-n-octylphthalate	1	J
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U
110-86-1	Pyridine	50	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW112

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.21

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3765.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene	10	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW113

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.26

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16824.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/04/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.

COMPOUND

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
96-18-4-----1 2 3-	TRICHLOROPROPANE	5	U
75-71-8-----	DICHLORODIFLUOROMETHANE	5	U
75-69-4-----	TRICHLOROFLUOROMETHANE	5	U
74-95-3-----	DIBROMOMETHANE	5	U
96-12-8-----1 2-	DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----	BROMOBENZENE	5	U
104-51-8-----	n-BUTYLBENZENE	5	U
98-06-6-----	tert-BUTYLBENZENE	5	U
135-98-8-----	sec-BUTYLBENZENE	5	U
95-49-8-----2-	CHLOROTOLUENE	5	U
106-43-4-----4-	CHLOROTOLUENE	5	U
95-50-1-----1 2-	DICHLOROBENZENE	5	U
541-73-1-----1 3-	DICHLOROBENZENE	5	U
106-46-7-----1 4-	DICHLOROBENZENE	5	U
142-28-9-----1 3-	DICHLOROPROPANE	5	U
594-20-7-----2 2-	DICHLOROPROPANE	5	U
563-58-6-----1 1-	DICHLOROPROPENE	5	U
87-68-3-----	HEXACHLOROBUTADIENE	5	U
98-82-8-----	ISOPROPYLBENZENE	5	U
99-87-6-----p-	ISOPROPYLTOLUENE	5	U
91-20-3-----	NAPHTHALENE	7	U
103-65-1-----n-	PROPYLBENZENE	2	J
87-61-6-----1 2 3-	TRICHLOROBENZENE	5	U
120-82-1-----1 2 4-	TRICHLOROBENZENE	5	U
95-63-6-----1 2 4-	TRIMETHYLBENZENE	16	U
108-67-8-----1 3 5-	TRIMETHYLBENZENE	5	U
74-97-5-----	BROMOCHLOROMETHANE	5	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW113

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.26

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3770.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 8.4

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2-----	3-Nitroaniline	50	U
83-32-9-----	Acenaphthene	10	U
121-14-2-----	2,4-Dinitrotoluene	10	U
51-28-5-----	2,4-Dinitrophenol	50	U
100-02-7-----	4-Nitrophenol	50	U
132-64-9-----	Dibenzofuran	10	U
84-66-2-----	Diethylphthalate	10	U
7005-72-3-----	4-Chlorophenyl-phenylether	10	U
86-73-7-----	Fluorene	10	U
100-01-6-----	4-Nitroaniline	50	U
534-52-1-----	4,6-Dinitro-2-methylphenol	50	U
86-30-6-----	N-Nitrosodiphenylamine (1)	1	J
101-55-3-----	4-Bromophenylphenylether	10	U
118-74-1-----	Hexachlorobenzene	10	U
87-86-5-----	Pentachlorophenol	50	U
85-01-8-----	Phenanthrene	10	U
120-12-7-----	Anthracene	10	U
84-74-2-----	Di-n-butylphthalate	3	J
206-44-0-----	Fluoranthene	10	U
129-00-0-----	Pyrene	10	U
85-68-7-----	Butylbenzylphthalate	10	U
91-94-1-----	3,3'-Dichlorobenzidine	20	U
56-55-3-----	Benzo(a)anthracene	10	U
218-01-9-----	Chrysene	10	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	2	J
117-84-0-----	Di-n-octylphthalate	10	U
205-99-2-----	Benzo(b)fluoranthene	10	U
207-08-9-----	Benzo(k)fluoranthene	10	U
50-32-8-----	Benzo(a)pyrene	10	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	10	U
53-70-3-----	Dibenz(a,h)anthracene	10	U
191-24-2-----	Benzo(g,h,i)perylene	10	U
110-86-1-----	Pyridine	50	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW113

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.26

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3770.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 8.4

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-94-3-----	1,2,4,5-Tetrachlorobenzene__	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW114

Lab Name: SWL-TULSA

Contract: FT. HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 28008

Matrix: (soil/water) WATER

Lab Sample ID: 28008.05

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL708.D

Level: (low/med) LOW

Date Received: 12/17/96

% Moisture: not dec. _____

Date Analyzed: 12/20/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	CHLOROMETHANE	5	U
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	5	U
67-64-1	ACETONE	7	
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	5	U
107-06-2	1 2-DICHLOROETHANE	5	U
78-93-3	2-BUTANONE	5	U
71-55-6	1 1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	5	U
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	5	U
124-48-1	DIBROMOCHLOROMETHANE	5	U
79-00-5	1 1 2-TRICHLOROETHANE	5	U
71-43-2	BENZENE	5	U
75-25-2	BROMOFORM	5	U
108-10-1	4-METHYL-2-PENTANONE	5	J
591-78-6	2-HEXANONE	5	U
127-18-4	TETRACHLOROETHENE	5	U
108-88-3	TOLUENE	5	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	5	U
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	5	U
95-47-6	o-XYLENE	5	U
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW114

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 28008

Matrix: (soil/water) WATER

Lab Sample ID: 28008.05

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: P10775.D

Level: (low/med) LOW

Date Received: 12/17/96

% Moisture: not dec. 0 dec.

Date Extracted: 12/18/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 01/06/97

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.

COMPOUND

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW114

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 28008

Matrix: (soil/water) WATER

Lab Sample ID: 28008.05

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: P10775.D

Level: (low/med) LOW

Date Received: 12/17/96

% Moisture: not dec. 0 dec.

Date Extracted: 12/18/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 01/06/97

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
121-14-2	2,4-Dinitrotoluene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenylphenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	3	J
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U
110-86-1	Pyridine	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW114

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 28008

Matrix: (soil/water) WATER

Lab Sample ID: 28008.05

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: P10775.D

Level: (low/med) LOW

Date Received: 12/17/96

% Moisture: not dec. 0 dec.

Date Extracted: 12/18/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 01/06/97

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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95-9403-----	1,2,4,5-Tetrachlorobenzene	10	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW115

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.20

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL498.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. _____

Date Analyzed: 12/02/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.

COMPOUND

CAS NO.	COMPOUND	UG/L	Q
74-87-3	CHLOROMETHANE	5	U
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	5	U
67-64-1	ACETONE	9	
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	2	J
107-06-2	1 2-DICHLOROETHANE	5	U
78-93-3	2-BUTANONE	5	U
71-55-6	1 1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	6	
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	5	U
124-48-1	DIBROMOCHLOROMETHANE	7	
79-00-5	1 1 2-TRICHLOROETHANE	5	U
71-43-2	BENZENE	5	U
75-25-2	BROMOFORM	2	J
108-10-1	4-METHYL-2-PENTANONE	5	U
591-78-6	2-HEXANONE	5	U
127-18-4	TETRACHLOROETHENE	5	U
108-88-3	TOLUENE	5	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	5	U
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	5	U
95-47-6	o-XYLENE	5	U
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW115

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.20

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL498.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. _____

Date Analyzed: 12/02/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	UG/L	Q
96-18-4-----1 2 3-	TRICHLOROPROPANE	5	U
75-71-8-----	DICHLORODIFLUOROMETHANE	5	U
75-69-4-----	TRICHLOROFLUOROMETHANE	5	U
74-95-3-----	DIBROMOMETHANE	5	U
96-12-8-----1 2-	DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----	BROMOBENZENE	5	U
104-51-8-----n-	BUTYLBENZENE	5	U
98-06-6-----tert-	BUTYLBENZENE	5	U
135-98-8-----sec-	BUTYLBENZENE	5	U
95-49-8-----2-	CHLOROTOLUENE	5	U
106-43-4-----4-	CHLOROTOLUENE	5	U
95-50-1-----1 2-	DICHLOROBENZENE	5	U
541-73-1-----1 3-	DICHLOROBENZENE	5	U
106-46-7-----1 4-	DICHLOROBENZENE	5	U
142-28-9-----1 3-	DICHLOROPROPANE	5	U
594-20-7-----2 2-	DICHLOROPROPANE	5	U
563-58-6-----1 1-	DICHLOROPROPENE	5	U
87-68-3-----	HEXACHLOROBUTADIENE	5	U
98-82-8-----	ISOPROPYLBENZENE	5	U
99-87-6-----p-	ISOPROPYLTOLUENE	10	U
91-20-3-----	NAPHTHALENE	3	J
103-65-1-----n-	PROPYLBENZENE	5	U
87-61-6-----1 2 3-	TRICHLOROBENZENE	5	U
120-82-1-----1 2 4-	TRICHLOROBENZENE	5	U
95-63-6-----1 2 4-	TRIMETHYLBENZENE	3	J
108-67-8-----1 3 5-	TRIMETHYLBENZENE	1	J
74-97-5-----	BROMOCHLOROMETHANE	5	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW115

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.20

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3739.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/23/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/11/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl) ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl) ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy) methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	1	J
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	3	J
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW115

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.20

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3739.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/23/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/11/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CONCENTRATION UNITS:
CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

99-09-2-----3-Nitroaniline	50	U
83-32-9-----Acenaphthene	10	U
121-14-2-----2,4-Dinitrotoluene	10	U
51-28-5-----2,4-Dinitrophenol	50	U
100-02-7-----4-Nitrophenol	50	U
132-64-9-----Dibenzofuran	10	U
84-66-2-----Diethylphthalate	10	U
7005-72-3-----4-Chlorophenyl-phenylether	10	U
86-73-7-----Fluorene	10	U
100-01-6-----4-Nitroaniline	50	U
534-52-1-----4,6-Dinitro-2-methylphenol	50	U
86-30-6-----N-Nitrosodiphenylamine (1)	10	U
101-55-3-----4-Bromophenylphenylether	10	U
118-74-1-----Hexachlorobenzene	10	U
87-86-5-----Pentachlorophenol	50	U
85-01-8-----Phenanthrene	10	U
120-12-7-----Anthracene	10	U
84-74-2-----Di-n-butylphthalate	10	U
206-44-0-----Fluoranthene	10	U
129-00-0-----Pyrene	10	U
85-68-7-----Butylbenzylphthalate	10	U
91-94-1-----3,3'-Dichlorobenzidine	20	U
56-55-3-----Benzo(a)anthracene	10	U
218-01-9-----Chrysene	10	U
117-81-7-----bis(2-Ethylhexyl)phthalate	4	J
117-84-0-----Di-n-octylphthalate	4	J
205-99-2-----Benzo(b)fluoranthene	10	U
207-08-9-----Benzo(k)fluoranthene	10	U
50-32-8-----Benzo(a)pyrene	10	U
193-39-5-----Indeno(1,2,3-cd)pyrene	10	U
53-70-3-----Dibenz(a,h)anthracene	10	U
191-24-2-----Benzo(g,h,i)perylene	10	U
110-86-1-----Pyridine	50	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW115

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27746

Matrix: (soil/water) WATER

Lab Sample ID: 27746.20

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3739.D

Level: (low/med) LOW

Date Received: 11/22/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/23/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/11/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene__	10	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW116

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.03

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16788.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	UG/L	Q
74-87-3	CHLOROMETHANE	5	U
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	5	U
67-64-1	ACETONE	11	U
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	5	U
107-06-2	1 2-DICHLOROETHANE	5	U
78-93-3	2-BUTANONE	5	U
71-55-6	1 1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	5	U
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	5	U
124-48-1	DIBROMOCHLOROMETHANE	5	U
79-00-5	1 1 2-TRICHLOROETHANE	5	U
71-43-2	BENZENE	5	U
75-25-2	BROMOFORM	5	U
108-10-1	4-METHYL-2-PENTANONE	5	U
591-78-6	2-HEXANONE	5	U
127-18-4	TETRACHLOROETHENE	5	U
108-88-3	TOLUENE	5	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	5	U
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	5	U
95-47-6	o-XYLENE	5	U
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW116

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.03

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16788.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	UG/L	Q
96-18-4	1 2 3-TRICHLOROPROPANE	5	U
75-71-8	DICHLORODIFLUOROMETHANE	5	U
75-69-4	TRICHLOROFLUOROMETHANE	5	U
74-95-3	DIBROMOMETHANE	5	U
96-12-8	1 2-DIBROMO-3-CHLOROPROPANE	5	U
108-86-1	BROMOBENZENE	5	U
104-51-8	n-BUTYLBENZENE	5	U
98-06-6	tert-BUTYLBENZENE	5	U
135-98-8	sec-BUTYLBENZENE	5	U
95-49-8	2-CHLOROTOLUENE	5	U
106-43-4	4-CHLOROTOLUENE	5	U
95-50-1	1 2-DICHLOROBENZENE	5	U
541-73-1	1 3-DICHLOROBENZENE	5	U
106-46-7	1 4-DICHLOROBENZENE	5	U
142-28-9	1 3-DICHLOROPROPANE	5	U
594-20-7	2 2-DICHLOROPROPANE	5	U
563-58-6	1 1-DICHLOROPROPENE	5	U
87-68-3	HEXACHLOROBUTADIENE	5	U
98-82-8	ISOPROPYLBENZENE	5	U
99-87-6	p-ISOPROPYLTOLUENE	5	U
91-20-3	NAPHTHALENE	2	U
103-65-1	n-PROPYLBENZENE	5	U
87-61-6	1 2 3-TRICHLOROBENZENE	5	U
120-82-1	1 2 4-TRICHLOROBENZENE	5	U
95-63-6	1 2 4-TRIMETHYLBENZENE	5	U
108-67-8	1 3 5-TRIMETHYLBENZENE	5	U
74-97-5	BROMOCHLOROMETHANE	5	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW116

Lab Name: SWL-TULSA

Contract: ST.HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) WATER

Lab Sample ID: 27702.02

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3682.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/10/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 6.0

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2-----	3-Nitroaniline	50	U
83-32-9-----	Acenaphthene	10	U
121-14-2-----	2,4-Dinitrotoluene	10	U
51-28-5-----	2,4-Dinitrophenol	50	U
100-02-7-----	4-Nitrophenol	50	U
132-64-9-----	Dibenzofuran	10	U
84-66-2-----	Diethylphthalate	10	U
7005-72-3-----	4-Chlorophenyl-phenylether	10	U
86-73-7-----	Fluorene	10	U
100-01-6-----	4-Nitroaniline	50	U
534-52-1-----	4,6-Dinitro-2-methylphenol	50	U
86-30-6-----	N-Nitrosodiphenylamine (1)	10	U
101-55-3-----	4-Bromophenylphenylether	10	U
118-74-1-----	Hexachlorobenzene	10	U
87-86-5-----	Pentachlorophenol	50	U
85-01-8-----	Phenanthrene	10	U
120-12-7-----	Anthracene	10	U
84-74-2-----	Di-n-butylphthalate	10	U
206-44-0-----	Fluoranthene	10	U
129-00-0-----	Pyrene	10	U
85-68-7-----	Butylbenzylphthalate	10	U
91-94-1-----	3,3'-Dichlorobenzidine	20	U
56-55-3-----	Benzo(a)anthracene	10	U
218-01-9-----	Chrysene	10	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	10	U
117-84-0-----	Di-n-octylphthalate	10	U
205-99-2-----	Benzo(b)fluoranthene	10	U
207-08-9-----	Benzo(k)fluoranthene	10	U
50-32-8-----	Benzo(a)pyrene	10	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	10	U
53-70-3-----	Dibenz(a,h)anthracene	10	U
191-24-2-----	Benzo(g,h,i)perylene	10	U
110-86-1-----	Pyridine	50	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW117

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.17

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16833.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/04/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	UG/L	Q
74-87-3	CHLOROMETHANE	5	U
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	2	J
67-64-1	ACETONE	16	U
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	1	J
107-06-2	1 2-DICHLOROETHANE	5	U
78-93-3	2-BUTANONE	12	U
71-55-6	1 1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	2	J
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	9	J
124-48-1	DIBROMOCHLOROMETHANE	3	J
79-00-5	1 1 2-TRICHLOROETHANE	5	J
71-43-2	BENZENE	3	J
75-25-2	BROMOFORM	1	J
108-10-1	4-METHYL-2-PENTANONE	2	J
591-78-6	2-HEXANONE	5	J
127-18-4	TETRACHLOROETHENE	2	J
108-88-3	TOLUENE	22	J
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	6	U
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	35	U
95-47-6	o-XYLENE	16	U
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW117

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.17

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16833.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/04/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	UG/L	Q
96-18-4-----	1 2 3-TRICHLOROPROPANE	5	U
75-71-8-----	DICHLORODIFLUOROMETHANE	5	U
75-69-4-----	TRICHLOROFUOROMETHANE	5	U
74-95-3-----	DIBROMOMETHANE	5	U
96-12-8-----	1 2-DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----	BROMOBENZENE	5	U
104-51-8-----	n-BUTYLBENZENE	5	U
98-06-6-----	tert-BUTYLBENZENE	5	U
135-98-8-----	sec-BUTYLBENZENE	5	U
95-49-8-----	2-CHLOROTOLUENE	5	U
106-43-4-----	4-CHLOROTOLUENE	5	U
95-50-1-----	1 2-DICHLOROBENZENE	5	U
541-73-1-----	1 3-DICHLOROBENZENE	5	U
106-46-7-----	1 4-DICHLOROBENZENE	5	U
142-28-9-----	1 3-DICHLOROPROPANE	5	U
594-20-7-----	2 2-DICHLOROPROPANE	5	U
563-58-6-----	1 1-DICHLOROPROPENE	5	U
87-68-3-----	HEXACHLOROBUTADIENE	5	U
98-82-8-----	ISOPROPYLBENZENE	1	J
99-87-6-----	p-ISOPROPYLTOLUENE	5	U
91-20-3-----	NAPHTHALENE	12	U
103-65-1-----	n-PROPYLBENZENE	2	J
87-61-6-----	1 2 3-TRICHLOROBENZENE	5	U
120-82-1-----	1 2 4-TRICHLOROBENZENE	5	U
95-63-6-----	1 2 4-TRIMETHYLBENZENE	38	U
108-67-8-----	1 3 5-TRIMETHYLBENZENE	5	U
74-97-5-----	BROMOCHLOROMETHANE	5	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW117

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.17

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3746.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/11/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.2

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.

COMPOUND

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	6	J
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	2	J
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	7	J
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW117

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.17

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3746.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/11/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.2

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene	10	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW118

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.02

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16785.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.

COMPOUND

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	CHLOROMETHANE	5	U
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	5	U
67-64-1	ACETONE	24	
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	1	U
107-06-2	1 2-DICHLOROETHANE	5	U
78-93-3	2-BUTANONE	13	
71-55-6	1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	2	U
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	5	U
124-48-1	DIBROMOCHLOROMETHANE	3	U
79-00-5	1 1 2-TRICHLOROETHANE	5	U
71-43-2	BENZENE	5	U
75-25-2	BROMOFORM	1	U
108-10-1	4-METHYL-2-PENTANONE	2	U
591-78-6	2-HEXANONE	5	U
127-18-4	TETRACHLOROETHENE	5	U
108-88-3	TOLUENE	4	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	2	U
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	14	
95-47-6	o-XYLENE	8	
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW118

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.02

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16785.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
96-18-4-----1	2 3-TRICHLOROPROPANE	5	U
75-71-8-----	DICHLORODIFLUOROMETHANE	5	U
75-69-4-----	TRICHLOROFLUOROMETHANE	5	U
74-95-3-----	DIBROMOMETHANE	5	U
96-12-8-----1	2-DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----	BROMOBENZENE	5	U
104-51-8-----	n-BUTYLBENZENE	5	U
98-06-6-----	tert-BUTYLBENZENE	5	U
135-98-8-----	sec-BUTYLBENZENE	5	U
95-49-8-----	2-CHLOROTOLUENE	5	U
106-43-4-----	4-CHLOROTOLUENE	5	U
95-50-1-----1	2-DICHLOROBENZENE	5	U
541-73-1-----1	3-DICHLOROBENZENE	5	U
106-46-7-----1	4-DICHLOROBENZENE	5	U
142-28-9-----1	3-DICHLOROPROPANE	5	U
594-20-7-----2	2-DICHLOROPROPANE	5	U
563-58-6-----1	1-DICHLOROPROPENE	5	U
87-68-3-----	HEXACHLOROBUTADIENE	5	U
98-82-8-----	ISOPROPYLBENZENE	5	U
99-87-6-----	p-ISOPROPYLTOLUENE	5	U
91-20-3-----	NAPHTHALENE	2	J
103-65-1-----	n-PROPYLBENZENE	1	J
87-61-6-----1	2 3-TRICHLOROBENZENE	5	U
120-82-1-----1	2 4-TRICHLOROBENZENE	5	U
95-63-6-----1	2 4-TRIMETHYLBENZENE	22	U
108-67-8-----1	3 5-TRIMETHYLBENZENE	7	U
74-97-5-----	BROMOCHLOROMETHANE	5	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW118

Lab Name: SWL-TULSA

Contract: ST.HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) WATER

Lab Sample ID: 27702.06

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3684.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/10/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.1

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene	10	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW119

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.10

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16793.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	CHLOROMETHANE	5	U
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	5	U
67-64-1	ACETONE	51	U
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	5	U
107-06-2	1 2-DICHLOROETHANE	5	U
78-93-3	2-BUTANONE	4	J
71-55-6	1 1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	5	U
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	5	U
124-48-1	DIBROMOCHLOROMETHANE	5	U
79-00-5	1 1 2-TRICHLOROETHANE	5	U
71-43-2	BENZENE	5	U
75-25-2	BROMOFORM	5	U
108-10-1	4-METHYL-2-PENTANONE	5	U
591-78-6	2-HEXANONE	5	U
127-18-4	TETRACHLOROETHENE	5	U
108-88-3	TOLUENE	5	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	5	U
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	5	U
95-47-6	o-XYLENE	5	U
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW119

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.10

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16793.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	UG/L	Q
96-18-4-----1 2 3-TRICHLOROPROPANE		5	U
75-71-8-----DICHLORODIFLUOROMETHANE		5	U
75-69-4-----TRICHLOROFLUOROMETHANE		5	U
74-95-3-----DIBROMOMETHANE		5	U
96-12-8-----1 2-DIBROMO-3-CHLOROPROPANE		5	U
108-86-1-----BROMOBENZENE		5	U
104-51-8-----n-BUTYLBENZENE		5	U
98-06-6-----tert-BUTYLBENZENE		5	U
135-98-8-----sec-BUTYLBENZENE		5	U
95-49-8-----2-CHLOROTOLUENE		5	U
106-43-4-----4-CHLOROTOLUENE		5	U
95-50-1-----1 2-DICHLOROBENZENE		5	U
541-73-1-----1 3-DICHLOROBENZENE		5	U
106-46-7-----1 4-DICHLOROBENZENE		5	U
142-28-9-----1 3-DICHLOROPROPANE		5	U
594-20-7-----2 2-DICHLOROPROPANE		5	U
563-58-6-----1 1-DICHLOROPROPENE		5	U
87-68-3-----HEXACHLOROBUTADIENE		5	U
98-82-8-----ISOPROPYLBENZENE		5	U
99-87-6-----p-ISOPROPYLTOLUENE		5	U
91-20-3-----NAPHTHALENE		5	U
103-65-1-----n-PROPYLBENZENE		5	U
87-61-6-----1 2 3-TRICHLOROBENZENE		5	U
120-82-1-----1 2 4-TRICHLOROBENZENE		5	U
95-63-6-----1 2 4-TRIMETHYLBENZENE		5	U
108-67-8-----1 3 5-TRIMETHYLBENZENE		5	U
74-97-5-----BROMOCHLOROMETHANE		5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW120

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.50

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16829.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/04/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.

COMPOUND

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg)	UG/L Q
74-87-3	CHLOROMETHANE	5	U
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	1	J
67-64-1	ACETONE	100	
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	5	U
107-06-2	1 2-DICHLOROETHANE	5	U
78-93-3	2-BUTANONE	23	
71-55-6	1 1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	5	U
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	5	U
124-48-1	DIBROMOCHLOROMETHANE	5	U
79-00-5	1 1 2-TRICHLOROETHANE	5	U
71-43-2	BENZENE	5	U
75-25-2	BROMOFORM	5	U
108-10-1	4-METHYL-2-PENTANONE	13	
591-78-6	2-HEXANONE	5	U
127-18-4	TETRACHLOROETHENE	5	U
108-88-3	TOLUENE	1	J
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	5	U
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	2	J
95-47-6	o-XYLENE	5	U
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW120

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.50

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16829.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/04/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.

COMPOUND

CAS NO.	COMPOUND	UG/L	Q
96-18-4-----1 2 3-	TRICHLOROPROPANE	5	U
75-71-8-----	DICHLORODIFLUOROMETHANE	5	U
75-69-4-----	TRICHLOROFLUOROMETHANE	5	U
74-95-3-----	DIBROMOMETHANE	5	U
96-12-8-----1 2-	DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----	BROMOBENZENE	5	U
104-51-8-----	n-BUTYLBENZENE	5	U
98-06-6-----	tert-BUTYLBENZENE	5	U
135-98-8-----	sec-BUTYLBENZENE	5	U
95-49-8-----2-	CHLOROTOLUENE	5	U
106-43-4-----4-	CHLOROTOLUENE	5	U
95-50-1-----1 2-	DICHLOROBENZENE	5	U
541-73-1-----1 3-	DICHLOROBENZENE	5	U
106-46-7-----1 4-	DICHLOROBENZENE	5	U
142-28-9-----1 3-	DICHLOROPROPANE	5	U
594-20-7-----2 2-	DICHLOROPROPANE	5	U
563-58-6-----1 1-	DICHLOROPROPENE	5	U
87-68-3-----	HEXACHLOROBUTADIENE	5	U
98-82-8-----	ISOPROPYLBENZENE	5	U
99-87-6-----p-	ISOPROPYLTOLUENE	5	U
91-20-3-----	NAPHTHALENE	5	U
103-65-1-----n-	PROPYLBENZENE	5	U
87-61-6-----1 2 3-	TRICHLOROBENZENE	5	U
120-82-1-----1 2 4-	TRICHLOROBENZENE	5	U
95-63-6-----1 2 4-	TRIMETHYLBENZENE	5	U
108-67-8-----1 3 5-	TRIMETHYLBENZENE	5	U
74-97-5-----	BROMOCHLOROMETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW121

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27726

Matrix: (soil/water) WATER

Lab Sample ID: 27726.05

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL412.D

Level: (low/med) LOW

Date Received: 11/21/96

% Moisture: not dec. _____

Date Analyzed: 11/22/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.

COMPOUND

74-87-3-----	CHLOROMETHANE	5	U
74-83-9-----	BROMOMETHANE	5	U
75-01-4-----	VINYL CHLORIDE	5	U
75-00-3-----	CHLOROETHANE	5	U
75-09-2-----	METHYLENE CHLORIDE	5	U
67-64-1-----	ACETONE	5	U
75-35-4-----	1 1-DICHLOROETHENE	5	U
75-34-3-----	1 1-DICHLOROETHANE	5	U
67-66-3-----	CHLOROFORM	5	U
107-06-2-----	1 2-DICHLOROETHANE	5	U
78-93-3-----	2-BUTANONE	5	U
71-55-6-----	1 1 1-TRICHLOROETHANE	5	U
56-23-5-----	CARBON TETRACHLORIDE	5	U
75-27-4-----	BROMODICHLOROMETHANE	5	U
78-87-5-----	1 2-DICHLOROPROPANE	5	U
79-01-6-----	TRICHLOROETHENE	5	U
124-48-1-----	DIBROMOCHLOROMETHANE	5	U
79-00-5-----	1 1 2-TRICHLOROETHANE	5	U
71-43-2-----	BENZENE	5	U
75-25-2-----	BROMOFORM	5	U
108-10-1-----	4-METHYL-2-PENTANONE	5	U
591-78-6-----	2-HEXANONE	5	U
127-18-4-----	TETRACHLOROETHENE	5	U
108-88-3-----	TOLUENE	5	U
79-34-5-----	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7-----	CHLOROBENZENE	5	U
100-41-4-----	ETHYL BENZENE	5	U
100-42-5-----	STYRENE	5	U
156-59-2-----	cis-1 2-DICHLOROETHENE	5	U
156-60-5-----	trans-1 2-DICHLOROETHENE	5	U
13-302-07-----	m,p-XYLENES	5	U
95-47-6-----	o-XYLENE	5	U
106-93-4-----	1 2-DIBROMOETHANE	5	U
630-20-6-----	1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW121

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27726

Matrix: (soil/water) WATER

Lab Sample ID: 27726.05

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL412.D

Level: (low/med) LOW

Date Received: 11/21/96

% Moisture: not dec. _____

Date Analyzed: 11/22/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	UG/L	Q
96-18-4-----1 2 3-	TRICHLOROPROPANE	5	U
75-71-8-----	DICHLORODIFLUOROMETHANE	5	U
75-69-4-----	TRICHLOROFLUOROMETHANE	5	U
74-95-3-----	DIBROMOMETHANE	5	U
96-12-8-----1 2-	DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----	BROMOBENZENE	5	U
104-51-8-----	n-BUTYLBENZENE	5	U
98-06-6-----	tert-BUTYLBENZENE	5	U
135-98-8-----	sec-BUTYLBENZENE	5	U
95-49-8-----	2-CHLOROTOLUENE	5	U
106-43-4-----	4-CHLOROTOLUENE	5	U
95-50-1-----	1 2-DICHLOROBENZENE	5	U
541-73-1-----	1 3-DICHLOROBENZENE	5	U
106-46-7-----	1 4-DICHLOROBENZENE	5	U
142-28-9-----	1 3-DICHLOROPROPANE	5	U
594-20-7-----	2 2-DICHLOROPROPANE	5	U
563-58-6-----	1 1-DICHLOROPROPENE	5	U
87-68-3-----	HEXACHLOROBUTADIENE	5	U
98-82-8-----	ISOPROPYLBENZENE	5	U
99-87-6-----	p-ISOPROPYLTOLUENE	5	U
91-20-3-----	NAPHTHALENE	5	U
103-65-1-----	n-PROPYLBENZENE	5	U
87-61-6-----	1 2 3-TRICHLOROBENZENE	5	U
120-82-1-----	1 2 4-TRICHLOROBENZENE	5	U
95-63-6-----	1 2 4-TRIMETHYLBENZENE	5	U
108-67-8-----	1 3 5-TRIMETHYLBENZENE	5	U
74-97-5-----	BROMOCHLOROMETHANE	5	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW121

b Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27726

Matrix: (soil/water) WATER

Lab Sample ID: 27726.05

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: FFK419.D

Level: (low/med) LOW

Date Received: 11/21/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/22/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/11/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.2

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl) ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl) ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy) methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	1	J
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW121

b Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27726

Matrix: (soil/water) WATER

Lab Sample ID: 27726.05

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: FFK419.D

Level: (low/med) LOW

Date Received: 11/21/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/22/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/11/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.2

Dilution Factor: 1.0

CAS NO.

COMPOUND

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-94-3-----	1,2,4,5-Tetrachlorobenzene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW122

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27726

Matrix: (soil/water) WATER

Lab Sample ID: 27726.06

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL413.D

Level: (low/med) LOW

Date Received: 11/21/96

% Moisture: not dec. _____

Date Analyzed: 11/22/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	UG/L	Q
74-87-3	CHLOROMETHANE	5	U
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	5	U
67-64-1	ACETONE	5	U
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	5	U
107-06-2	1 2-DICHLOROETHANE	5	U
78-93-3	2-BUTANONE	5	U
71-55-6	1 1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	5	U
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	5	U
124-48-1	DIBROMOCHLOROMETHANE	5	U
79-00-5	1 1 2-TRICHLOROETHANE	5	U
71-43-2	BENZENE	5	U
75-25-2	BROMOFORM	5	U
108-10-1	4-METHYL-2-PENTANONE	5	U
591-78-6	2-HEXANONE	5	U
127-18-4	TETRACHLOROETHENE	5	U
108-88-3	TOLUENE	5	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	5	U
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	5	U
95-47-6	o-XYLENE	5	U
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW122

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27726

Matrix: (soil/water) WATER

Lab Sample ID: 27726.06

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL413.D

Level: (low/med) LOW

Date Received: 11/21/96

% Moisture: not dec. _____

Date Analyzed: 11/22/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.

COMPOUND

CAS NO.	COMPOUND	CONCENTRATION UNITS	Q
96-18-4	1 2 3-TRICHLOROPROPANE	5	U
75-71-8	DICHLORODIFLUOROMETHANE	5	U
75-69-4	TRICHLOROFLUOROMETHANE	5	U
74-95-3	DIBROMOMETHANE	5	U
96-12-8	1 2-DIBROMO-3-CHLOROPROPANE	5	U
108-86-1	BROMOBENZENE	5	U
104-51-8	n-BUTYLBENZENE	5	U
98-06-6	tert-BUTYLBENZENE	5	U
135-98-8	sec-BUTYLBENZENE	5	U
95-49-8	2-CHLOROTOLUENE	5	U
106-43-4	4-CHLOROTOLUENE	5	U
95-50-1	1 2-DICHLOROBENZENE	5	U
541-73-1	1 3-DICHLOROBENZENE	5	U
106-46-7	1 4-DICHLOROBENZENE	5	U
142-28-9	1 3-DICHLOROPROPANE	5	U
594-20-7	2 2-DICHLOROPROPANE	5	U
563-58-6	1 1-DICHLOROPROPENE	5	U
87-68-3	HEXACHLOROBUTADIENE	5	U
98-82-8	ISOPROPYLBENZENE	5	U
99-87-6	p-ISOPROPYLTOLUENE	5	U
91-20-3	NAPHTHALENE	5	U
103-65-1	n-PROPYLBENZENE	5	U
87-61-6	1 2 3-TRICHLOROBENZENE	5	U
120-82-1	1 2 4-TRICHLOROBENZENE	5	U
95-63-6	1 2 4-TRIMETHYLBENZENE	5	U
108-67-8	1 3 5-TRIMETHYLBENZENE	5	U
74-97-5	BROMOCHLOROMETHANE	5	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW122

Site Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27726

Matrix: (soil/water) WATER

Lab Sample ID: 27726.06

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: FFK420.D

Level: (low/med) LOW

Date Received: 11/21/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/22/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/11/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO. COMPOUND UG/L Q

108-95-2-----	Phenol	10	U
111-44-4-----	bis(2-Chloroethyl)ether	10	U
95-57-8-----	2-Chlorophenol	10	U
541-73-1-----	1,3-Dichlorobenzene	10	U
106-46-7-----	1,4-Dichlorobenzene	10	U
100-51-6-----	Benzyl alcohol	10	U
95-50-1-----	1,2-Dichlorobenzene	10	U
95-48-7-----	2-Methylphenol	10	U
108-60-1-----	bis(2-Chloroisopropyl)ether	10	U
106-44-5-----	4-Methylphenol	10	U
621-64-7-----	N-Nitroso-di-n-propylamine	10	U
67-72-1-----	Hexachloroethane	10	U
98-95-3-----	Nitrobenzene	10	U
78-59-1-----	Isophorone	10	U
88-75-5-----	2-Nitrophenol	10	U
105-67-9-----	2,4-Dimethylphenol	10	U
65-85-0-----	Benzoic Acid	50	U
111-91-1-----	bis(2-Chloroethoxy)methane	10	U
120-83-2-----	2,4-Dichlorophenol	10	U
120-82-1-----	1,2,4-Trichlorobenzene	10	U
91-20-3-----	Naphthalene	10	U
106-47-8-----	4-Chloroaniline	10	U
87-68-3-----	Hexachlorobutadiene	10	U
59-50-7-----	4-Chloro-3-methylphenol	10	U
91-57-6-----	2-Methylnaphthalene	10	U
77-47-4-----	Hexachlorocyclopentadiene	10	U
88-06-2-----	2,4,6-Trichlorophenol	10	U
95-95-4-----	2,4,5-Trichlorophenol	50	U
91-58-7-----	2-Chloronaphthalene	10	U
88-74-4-----	2-Nitroaniline	50	U
131-11-3-----	Dimethylphthalate	10	U
208-96-8-----	Acenaphthylene	10	U
606-20-2-----	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW122

Lab Name: SWL-TULSA Contract: FT HOOD
 Lab Code: SWOK Case No.: SAIC SAS No.: SDG No.: 27726
 Matrix: (soil/water) WATER Lab Sample ID: 27726.06
 Sample wt/vol: 1000 (g/mL) ML Lab File ID: FFK420.D
 Level: (low/med) LOW Date Received: 11/21/96
 % Moisture: not dec. 0 dec. Date Extracted: 11/22/96
 Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 12/11/96
 Concentrated Extract Volume: 1000(uL)
 GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2-----	3-Nitroaniline	50	U
83-32-9-----	Acenaphthene	10	U
121-14-2-----	2,4-Dinitrotoluene	10	U
51-28-5-----	2,4-Dinitrophenol	50	U
100-02-7-----	4-Nitrophenol	50	U
132-64-9-----	Dibenzofuran	10	U
84-66-2-----	Diethylphthalate	10	U
7005-72-3-----	4-Chlorophenyl-phenylether	10	U
86-73-7-----	Fluorene	10	U
100-01-6-----	4-Nitroaniline	50	U
534-52-1-----	4,6-Dinitro-2-methylphenol	50	U
86-30-6-----	N-Nitrosodiphenylamine (1)	10	U
101-55-3-----	4-Bromophenylphenylether	10	U
118-74-1-----	Hexachlorobenzene	10	U
87-86-5-----	Pentachlorophenol	50	U
85-01-8-----	Phenanthrene	10	U
120-12-7-----	Anthracene	10	U
84-74-2-----	Di-n-butylphthalate	10	U
206-44-0-----	Fluoranthene	10	U
129-00-0-----	Pyrene	10	U
85-68-7-----	Butylbenzylphthalate	2	J
91-94-1-----	3,3'-Dichlorobenzidine	20	U
56-55-3-----	Benzo(a)anthracene	10	U
218-01-9-----	Chrysene	10	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	3	J
117-84-0-----	Di-n-octylphthalate	10	U
205-99-2-----	Benzo(b)fluoranthene	10	U
207-08-9-----	Benzo(k)fluoranthene	10	U
50-32-8-----	Benzo(a)pyrene	10	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	10	U
53-70-3-----	Dibenz(a,h)anthracene	10	U
191-24-2-----	Benzo(g,h,i)perylene	10	U
110-86-1-----	Pyridine	50	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW122

b Name: SWL-TULSA	Contract: FT HOOD	
Lab Code: SWOK	Case No.: SAIC	SAS No.:
		SDG No.: 27726
Matrix: (soil/water) WATER		Lab Sample ID: 27726.06
Sample wt/vol: 1000 (g/mL) ML		Lab File ID: FFK420.D
Level: (low/med) LOW		Date Received: 11/21/96
% Moisture: not dec. 0 dec.		Date Extracted: 11/22/96
Extraction: (SepF/Cont/Sonc) CONT		Date Analyzed: 12/11/96
Concentrated Extract Volume: 1000(uL)		
GPC Cleanup: (Y/N) N	pH: 7.5	Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-94-3-----	1,2,4,5-Tetrachlorobenzene__	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW123

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.11

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL503.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/02/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	UG/L	Q
74-87-3	CHLOROMETHANE	5	U
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	5	U
67-64-1	ACETONE	5	U
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	5	U
107-06-2	1 2-DICHLOROETHANE	5	U
78-93-3	2-BUTANONE	5	U
71-55-6	1 1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	5	U
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	5	U
124-48-1	DIBROMOCHLOROMETHANE	5	U
79-00-5	1 1 2-TRICHLOROETHANE	5	U
71-43-2	BENZENE	5	U
75-25-2	BROMOFORM	5	U
108-10-1	4-METHYL-2-PENTANONE	5	U
591-78-6	2-HEXANONE	5	U
127-18-4	TETRACHLOROETHENE	5	U
108-88-3	TOLUENE	5	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	5	U
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	5	U
95-47-6	o-XYLENE	5	U
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW123

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.11

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL503.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/02/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
96-18-4-----1 2 3-	TRICHLOROPROPANE	5	U
75-71-8-----	DICHLORODIFLUOROMETHANE	5	U
75-69-4-----	TRICHLOROFLUOROMETHANE	5	U
74-95-3-----	DIBROMOMETHANE	5	U
96-12-8-----1 2-	DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----	BROMOBENZENE	5	U
104-51-8-----n-	BUTYLBENZENE	5	U
98-06-6-----tert-	BUTYLBENZENE	5	U
135-98-8-----sec-	BUTYLBENZENE	5	U
95-49-8-----2-	CHLOROTOLUENE	5	U
106-43-4-----4-	CHLOROTOLUENE	5	U
95-50-1-----1 2-	DICHLOROBENZENE	5	U
541-73-1-----1 3-	DICHLOROBENZENE	5	U
106-46-7-----1 4-	DICHLOROBENZENE	5	U
142-28-9-----1 3-	DICHLOROPROPANE	5	U
594-20-7-----2 2-	DICHLOROPROPANE	5	U
563-58-6-----1 1-	DICHLOROPROPENE	5	U
87-68-3-----	HEXACHLOROBUTADIENE	5	U
98-82-8-----	ISOPROPYLBENZENE	5	U
99-87-6-----p-	ISOPROPYLTOLUENE	5	U
91-20-3-----	NAPHTHALENE	5	U
103-65-1-----n-	PROPYLBENZENE	5	U
87-61-6-----1 2 3-	TRICHLOROBENZENE	5	U
120-82-1-----1 2 4-	TRICHLOROBENZENE	5	U
95-63-6-----1 2 4-	TRIMETHYLBENZENE	5	U
108-67-8-----1 3 5-	TRIMETHYLBENZENE	5	U
74-97-5-----	BROMOCHLOROMETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW124

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.12

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL504.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/02/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.

COMPOUND

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	CHLOROMETHANE	5	U
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	5	U
67-64-1	ACETONE	8	
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	5	U
107-06-2	1 2-DICHLOROETHANE	5	U
78-93-3	2-BUTANONE	5	U
71-55-6	1 1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	5	U
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	5	U
124-48-1	DIBROMOCHLOROMETHANE	5	U
79-00-5	1 1 2-TRICHLOROETHANE	5	U
71-43-2	BENZENE	5	U
75-25-2	BROMOFORM	5	U
108-10-1	4-METHYL-2-PENTANONE	5	U
591-78-6	2-HEXANONE	5	U
127-18-4	TETRACHLOROETHENE	5	U
108-88-3	TOLUENE	5	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	5	U
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	5	U
95-47-6	o-XYLENE	5	U
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW124

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.12

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL504.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/02/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	UG/L	Q
96-18-4-----	1 2 3-TRICHLOROPROPANE	5	U
75-71-8-----	DICHLORODIFLUOROMETHANE	5	U
75-69-4-----	TRICHLOROFLUOROMETHANE	5	U
74-95-3-----	DIBROMOMETHANE	5	U
96-12-8-----	1 2-DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----	BROMOBENZENE	5	U
104-51-8-----	n-BUTYLBENZENE	5	U
98-06-6-----	tert-BUTYLBENZENE	5	U
135-98-8-----	sec-BUTYLBENZENE	5	U
95-49-8-----	2-CHLOROTOLUENE	5	U
106-43-4-----	4-CHLOROTOLUENE	5	U
95-50-1-----	1 2-DICHLOROBENZENE	5	U
541-73-1-----	1 3-DICHLOROBENZENE	5	U
106-46-7-----	1 4-DICHLOROBENZENE	5	U
142-28-9-----	1 3-DICHLOROPROPANE	5	U
594-20-7-----	2 2-DICHLOROPROPANE	5	U
563-58-6-----	1 1-DICHLOROPROPENE	5	U
87-68-3-----	HEXACHLOROBUTADIENE	5	U
98-82-8-----	ISOPROPYLBENZENE	5	U
99-87-6-----	p-ISOPROPYLTOLUENE	5	U
91-20-3-----	NAPHTHALENE	5	U
103-65-1-----	n-PROPYLBENZENE	5	U
87-61-6-----	1 2 3-TRICHLOROBENZENE	5	U
120-82-1-----	1 2 4-TRICHLOROBENZENE	5	U
95-63-6-----	1 2 4-TRIMETHYLBENZENE	5	U
108-67-8-----	1 3 5-TRIMETHYLBENZENE	5	U
74-97-5-----	BROMOCHLOROMETHANE	5	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW124

Lab Name: SWL-TULSA

Contract: ST.HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) WATER

Lab Sample ID: 27702.10

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3688.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/10/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.8

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl) ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl) ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy) methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW124

Lab Name: SWL-TULSA

Contract: ST.HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) WATER

Lab Sample ID: 27702.10

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3688.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/10/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.8

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene	10	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW125

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.13

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL505.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.

COMPOUND

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg)	UG/L	Q
74-87-3	CHLOROMETHANE	5		U
74-83-9	BROMOMETHANE	5		U
75-01-4	VINYL CHLORIDE	5		U
75-00-3	CHLOROETHANE	5		U
75-09-2	METHYLENE CHLORIDE	5		U
67-64-1	ACETONE	4		J
75-35-4	1 1-DICHLOROETHENE	5		U
75-34-3	1 1-DICHLOROETHANE	5		U
67-66-3	CHLOROFORM	5		U
107-06-2	1 2-DICHLOROETHANE	5		U
78-93-3	2-BUTANONE	5		U
71-55-6	1 1-TRICHLOROETHANE	5		U
56-23-5	CARBON TETRACHLORIDE	5		U
75-27-4	BROMODICHLOROMETHANE	5		U
78-87-5	1 2-DICHLOROPROPANE	5		U
79-01-6	TRICHLOROETHENE	5		U
124-48-1	DIBROMOCHLOROMETHANE	5		U
79-00-5	1 1 2-TRICHLOROETHANE	5		U
71-43-2	BENZENE	5		U
75-25-2	BROMOFORM	5		U
108-10-1	4-METHYL-2-PENTANONE	5		U
591-78-6	2-HEXANONE	5		U
127-18-4	TETRACHLOROETHENE	5		U
108-88-3	TOLUENE	5		U
79-34-5	1 1 2 2-TETRACHLOROETHANE	5		U
108-90-7	CHLOROBENZENE	5		U
100-41-4	ETHYL BENZENE	5		U
100-42-5	STYRENE	5		U
156-59-2	cis-1 2-DICHLOROETHENE	5		U
156-60-5	trans-1 2-DICHLOROETHENE	5		U
13-302-07	m,p-XYLENES	5		U
95-47-6	o-XYLENE	5		U
106-93-4	1 2-DIBROMOETHANE	5		U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5		U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW125

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.13

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: UL505.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/03/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.

COMPOUND

Q

96-18-4-----1 2 3-TRICHLOROPROPANE	5	U
75-71-8-----DICHLORODIFLUOROMETHANE	5	U
75-69-4-----TRICHLOROFLUOROMETHANE	5	U
74-95-3-----DIBROMOMETHANE	5	U
96-12-8-----1 2-DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----BROMOBENZENE	5	U
104-51-8-----n-BUTYLBENZENE	5	U
98-06-6-----tert-BUTYLBENZENE	5	U
135-98-8-----sec-BUTYLBENZENE	5	U
95-49-8-----2-CHLOROTOLUENE	5	U
106-43-4-----4-CHLOROTOLUENE	5	U
95-50-1-----1 2-DICHLOROBEZENE	5	U
541-73-1-----1 3-DICHLOROBEZENE	5	U
106-46-7-----1 4-DICHLOROBEZENE	5	U
142-28-9-----1 3-DICHLOROPROPANE	5	U
594-20-7-----2 2-DICHLOROPROPANE	5	U
563-58-6-----1 1-DICHLOROPROPENE	5	U
87-68-3-----HEXACHLOROBUTADIENE	5	U
98-82-8-----ISOPROPYLBENZENE	5	U
99-87-6-----p-ISOPROPYLTOLUENE	5	U
91-20-3-----NAPHTHALENE	5	U
103-65-1-----n-PROPYLBENZENE	5	U
87-61-6-----1 2 3-TRICHLOROBEZENE	5	U
120-82-1-----1 2 4-TRICHLOROBEZENE	5	U
95-63-6-----1 2 4-TRIMETHYLBENZENE	5	U
108-67-8-----1 3 5-TRIMETHYLBENZENE	5	U
74-97-5-----BROMOCHLOROMETHANE	5	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW125

Site Name: SWL-TULSA

Contract: ST.HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27702

Matrix: (soil/water) WATER

Lab Sample ID: 27702.11

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3689.D

Level: (low/med) LOW

Date Received: 11/20/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/21/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/10/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene	10	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW126

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.25

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16823.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/04/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION	Q
74-87-3	CHLOROMETHANE	5	U
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	3	J
67-64-1	ACETONE	32	U
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	2	J
107-06-2	1 2-DICHLOROETHANE	2	J
78-93-3	2-BUTANONE	15	U
71-55-6	1 1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	4	J
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	5	U
124-48-1	DIBROMOCHLOROMETHANE	5	U
79-00-5	1 1 2-TRICHLOROETHANE	5	U
71-43-2	BENZENE	5	U
75-25-2	BROMOFORM	3	J
108-10-1	4-METHYL-2-PENTANONE	2	J
591-78-6	2-HEXANONE	5	U
127-18-4	TETRACHLOROETHENE	5	U
108-88-3	TOLUENE	7	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	4	J
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	22	U
95-47-6	o-XYLENE	12	U
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW126

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.25

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16823.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/04/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
96-18-4-----	1 2 3-TRICHLOROPROPANE	5	U
75-71-8-----	DICHLORODIFLUOROMETHANE	5	U
75-69-4-----	TRICHLOROFLUOROMETHANE	5	U
74-95-3-----	DIBROMOMETHANE	5	U
96-12-8-----	1 2-DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----	BROMOBENZENE	5	U
104-51-8-----	n-BUTYLBENZENE	5	U
98-06-6-----	tert-BUTYLBENZENE	5	U
135-98-8-----	sec-BUTYLBENZENE	5	U
95-49-8-----	2-CHLOROTOLUENE	5	U
106-43-4-----	4-CHLOROTOLUENE	5	U
95-50-1-----	1 2-DICHLOROBENZENE	5	U
541-73-1-----	1 3-DICHLOROBENZENE	5	U
106-46-7-----	1 4-DICHLOROBENZENE	5	U
142-28-9-----	1 3-DICHLOROPROPANE	5	U
594-20-7-----	2 2-DICHLOROPROPANE	5	U
563-58-6-----	1 1-DICHLOROPROPENE	5	U
87-68-3-----	HEXACHLOROBUTADIENE	5	U
98-82-8-----	ISOPROPYLBENZENE	5	U
99-87-6-----	p-ISOPROPYLTOLUENE	5	U
91-20-3-----	NAPHTHALENE	6	U
103-65-1-----	n-PROPYLBENZENE	2	J
87-61-6-----	1 2 3-TRICHLOROBENZENE	5	U
120-82-1-----	1 2 4-TRICHLOROBENZENE	5	U
95-63-6-----	1 2 4-TRIMETHYLBENZENE	36	U
108-67-8-----	1 3 5-TRIMETHYLBENZENE	5	U
74-97-5-----	BROMOCHLOROMETHANE	5	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW126

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.25

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3769.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.4

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.

COMPOUND

Q

108-95-2	Phenol	3	J
111-44-4	bis(2-Chloroethyl) ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl) ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	2	J
111-91-1	bis(2-Chloroethoxy) methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	5	J
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW126

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.25

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3769.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.4

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene	10	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SM
1/29/99

2921SW127

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.42

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16819.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/04/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND		Q
74-87-3	CHLOROMETHANE	5	U
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	2	J
67-64-1	ACETONE	47	
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	5	U
107-06-2	1 2-DICHLOROETHANE	5	U
78-93-3	2-BUTANONE	16	
71-55-6	1 1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	2	J
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	5	U
124-48-1	DIBROMOCHLOROMETHANE	3	J
79-00-5	1 1 2-TRICHLOROETHANE	5	U
71-43-2	BENZENE	5	U
75-25-2	BROMOFORM	1	J
108-10-1	4-METHYL-2-PENTANONE	10	
591-78-6	2-HEXANONE	5	U
127-18-4	TETRACHLOROETHENE	5	U
108-88-3	TOLUENE	4	J
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	3	J
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	24	
95-47-6	o-XYLENE	10	
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET *CM*

EPA SAMPLE NO.

1/29/99

29 SW127

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.42

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16819.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/04/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION	UNIT
96-18-4	1 2 3-TRICHLOROPROPANE	5	U
75-71-8	DICHLORODIFLUOROMETHANE	5	U
75-69-4	TRICHLOROFLUOROMETHANE	5	U
74-95-3	DIBROMOMETHANE	5	U
96-12-8	1 2-DIBROMO-3-CHLOROPROPANE	5	U
108-86-1	BROMOBENZENE	5	U
104-51-8	n-BUTYLBENZENE	5	U
98-06-6	tert-BUTYLBENZENE	5	U
135-98-8	sec-BUTYLBENZENE	5	U
95-49-8	2-CHLOROTOLUENE	5	U
106-43-4	4-CHLOROTOLUENE	5	U
95-50-1	1 2-DICHLOROBENZENE	5	U
541-73-1	1 3-DICHLOROBENZENE	5	U
106-46-7	1 4-DICHLOROBENZENE	5	U
142-28-9	1 3-DICHLOROPROPANE	5	U
594-20-7	2 2-DICHLOROPROPANE	5	U
563-58-6	1 1-DICHLOROPROPENE	5	U
87-68-3	HEXACHLOROBUTADIENE	5	U
98-82-8	ISOPROPYLBENZENE	5	U
99-87-6	p-ISOPROPYLTOLUENE	3	J
91-20-3	NAPHTHALENE	9	
103-65-1	n-PROPYLBENZENE	2	J
87-61-6	1 2 3-TRICHLOROBENZENE	5	U
120-82-1	1 2 4-TRICHLOROBENZENE	5	U
95-63-6	1 2 4-TRIMETHYLBENZENE	44	
108-67-8	1 3 5-TRIMETHYLBENZENE	5	U
74-97-5	BROMOCHLOROMETHANE	5	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET *SM*

EPA SAMPLE NO.

1/29/99

2921SW127

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.42

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3779.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.4

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.

COMPOUND

Q

108-95-2-----	Phenol	10	U
111-44-4-----	bis(2-Chloroethyl) ether	10	U
95-57-8-----	2-Chlorophenol	10	U
541-73-1-----	1,3-Dichlorobenzene	10	U
106-46-7-----	1,4-Dichlorobenzene	10	U
100-51-6-----	Benzyl alcohol	10	U
95-50-1-----	1,2-Dichlorobenzene	10	U
95-48-7-----	2-Methylphenol	10	U
108-60-1-----	bis(2-Chloroisopropyl) ether	10	U
106-44-5-----	4-Methylphenol	23	
621-64-7-----	N-Nitroso-di-n-propylamine	10	U
67-72-1-----	Hexachloroethane	10	U
98-95-3-----	Nitrobenzene	10	U
78-59-1-----	Isophorone	10	U
88-75-5-----	2-Nitrophenol	10	U
105-67-9-----	2,4-Dimethylphenol	1	J
65-85-0-----	Benzoic Acid	50	U
111-91-1-----	bis(2-Chloroethoxy) methane	10	U
120-83-2-----	2,4-Dichlorophenol	10	U
120-82-1-----	1,2,4-Trichlorobenzene	10	U
91-20-3-----	Naphthalene	10	U
106-47-8-----	4-Chloroaniline	10	U
87-68-3-----	Hexachlorobutadiene	10	U
59-50-7-----	4-Chloro-3-methylphenol	10	U
91-57-6-----	2-Methylnaphthalene	10	U
77-47-4-----	Hexachlorocyclopentadiene	10	U
88-06-2-----	2,4,6-Trichlorophenol	10	U
95-95-4-----	2,4,5-Trichlorophenol	50	U
91-58-7-----	2-Chloronaphthalene	10	U
88-74-4-----	2-Nitroaniline	50	U
131-11-3-----	Dimethylphthalate	10	U
208-96-8-----	Acenaphthylene	10	U
606-20-2-----	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: SWL-TULSA

Contract: FT HOOD

SM
1/29/99 2927SW127

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.42

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3779.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.4

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2-----	3-Nitroaniline	50	U
83-32-9-----	Acenaphthene	10	U
121-14-2-----	2,4-Dinitrotoluene	10	U
51-28-5-----	2,4-Dinitrophenol	50	U
100-02-7-----	4-Nitrophenol	50	U
132-64-9-----	Dibenzofuran	10	U
84-66-2-----	Diethylphthalate	10	U
7005-72-3-----	4-Chlorophenyl-phenylether	10	U
86-73-7-----	Fluorene	10	U
100-01-6-----	4-Nitroaniline	50	U
534-52-1-----	4,6-Dinitro-2-methylphenol	50	U
86-30-6-----	N-Nitrosodiphenylamine (1)	2	J
101-55-3-----	4-Bromophenylphenylether	10	U
118-74-1-----	Hexachlorobenzene	10	U
87-86-5-----	Pentachlorophenol	50	U
85-01-8-----	Phenanthrene	10	U
120-12-7-----	Anthracene	10	U
84-74-2-----	Di-n-butylphthalate	10	U
206-44-0-----	Fluoranthene	10	U
129-00-0-----	Pyrene	10	U
85-68-7-----	Butylbenzylphthalate	10	U
91-94-1-----	3,3'-Dichlorobenzidine	20	U
56-55-3-----	Benzo(a)anthracene	10	U
218-01-9-----	Chrysene	10	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	3	J
117-84-0-----	Di-n-octylphthalate	10	U
205-99-2-----	Benzo(b)fluoranthene	10	U
207-08-9-----	Benzo(k)fluoranthene	10	U
50-32-8-----	Benzo(a)pyrene	10	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	10	U
53-70-3-----	Dibenz(a,h)anthracene	10	U
191-24-2-----	Benzo(g,h,i)perylene	10	U
110-86-1-----	Pyridine	50	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SM
1/29/99

2927SW127

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.42

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3779.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.4

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene	10	U
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW128

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.24

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16822.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/04/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION	Q
74-87-3	CHLOROMETHANE	5	U
74-83-9	BROMOMETHANE	5	U
75-01-4	VINYL CHLORIDE	5	U
75-00-3	CHLOROETHANE	5	U
75-09-2	METHYLENE CHLORIDE	3	J
67-64-1	ACETONE	120	U
75-35-4	1 1-DICHLOROETHENE	5	U
75-34-3	1 1-DICHLOROETHANE	5	U
67-66-3	CHLOROFORM	5	U
107-06-2	1 2-DICHLOROETHANE	5	U
78-93-3	2-BUTANONE	56	U
71-55-6	1 1 1-TRICHLOROETHANE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U
75-27-4	BROMODICHLOROMETHANE	1	J
78-87-5	1 2-DICHLOROPROPANE	5	U
79-01-6	TRICHLOROETHENE	5	U
124-48-1	DIBROMOCHLOROMETHANE	1	J
79-00-5	1 1 2-TRICHLOROETHANE	5	U
71-43-2	BENZENE	5	U
75-25-2	BROMOFORM	5	U
108-10-1	4-METHYL-2-PENTANONE	45	U
591-78-6	2-HEXANONE	5	U
127-18-4	TETRACHLOROETHENE	5	U
108-88-3	TOLUENE	5	J
79-34-5	1 1 2 2-TETRACHLOROETHANE	5	U
108-90-7	CHLOROBENZENE	5	U
100-41-4	ETHYL BENZENE	1	J
100-42-5	STYRENE	5	U
156-59-2	cis-1 2-DICHLOROETHENE	5	U
156-60-5	trans-1 2-DICHLOROETHENE	5	U
13-302-07	m,p-XYLENES	8	J
95-47-6	o-XYLENE	4	U
106-93-4	1 2-DIBROMOETHANE	5	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW128

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.24

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: K16822.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. _____

Date Analyzed: 12/04/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.

COMPOUND

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
96-18-4-----1 2 3-	TRICHLOROPROPANE	5	U
75-71-8-----	DICHLORODIFLUOROMETHANE	5	U
75-69-4-----	TRICHLOROFLUOROMETHANE	5	U
74-95-3-----	DIBROMOMETHANE	5	U
96-12-8-----1 2-	DIBROMO-3-CHLOROPROPANE	5	U
108-86-1-----	BROMOBENZENE	5	U
104-51-8-----	n-BUTYLBENZENE	5	U
98-06-6-----	tert-BUTYLBENZENE	5	U
135-98-8-----	sec-BUTYLBENZENE	5	U
95-49-8-----2-	CHLOROTOLUENE	5	U
106-43-4-----4-	CHLOROTOLUENE	5	U
95-50-1-----1 2-	DICHLOROBENZENE	5	U
541-73-1-----1 3-	DICHLOROBENZENE	5	U
106-46-7-----1 4-	DICHLOROBENZENE	5	U
142-28-9-----1 3-	DICHLOROPROPANE	5	U
594-20-7-----2 2-	DICHLOROPROPANE	5	U
563-58-6-----1 1-	DICHLOROPROPENE	5	U
87-68-3-----	HEXACHLOROBUTADIENE	5	U
98-82-8-----	ISOPROPYLBENZENE	5	U
99-87-6-----p-	ISOPROPYLTOLUENE	5	U
91-20-3-----	NAPHTHALENE	6	
103-65-1-----n-	PROPYLBENZENE	5	U
87-61-6-----1 2 3-	TRICHLOROBENZENE	5	U
120-82-1-----1 2 4-	TRICHLOROBENZENE	5	U
95-63-6-----1 2 4-	TRIMETHYLBENZENE	8	
108-67-8-----1 3 5-	TRIMETHYLBENZENE	3	J
74-97-5-----	BROMOCHLOROMETHANE	5	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW128

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.24

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3768.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.

COMPOUND

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl) ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	4	J
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl) ether	10	U
106-44-5	4-Methylphenol	2	J
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy) methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	1	J
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW128

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

NOT USED

Matrix: (soil/water) WATER

Lab Sample ID: 27758.24

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: M3768.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 0 dec.

Date Extracted: 11/25/96

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 12/12/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2-----	3-Nitroaniline	50	U
83-32-9-----	Acenaphthene	10	U
121-14-2-----	2,4-Dinitrotoluene	10	U
51-28-5-----	2,4-Dinitrophenol	50	U
100-02-7-----	4-Nitrophenol	50	U
132-64-9-----	Dibenzofuran	10	U
84-66-2-----	Diethylphthalate	10	U
7005-72-3-----	4-Chlorophenyl-phenylether	10	U
86-73-7-----	Fluorene	10	U
100-01-6-----	4-Nitroaniline	50	U
534-52-1-----	4,6-Dinitro-2-methylphenol	50	U
86-30-6-----	N-Nitrosodiphenylamine (1)	10	U
101-55-3-----	4-Bromophenylphenylether	10	U
118-74-1-----	Hexachlorobenzene	10	U
87-86-5-----	Pentachlorophenol	50	U
85-01-8-----	Phenanthrene	10	U
120-12-7-----	Anthracene	10	U
84-74-2-----	Di-n-butylphthalate	2	J
206-44-0-----	Fluoranthene	10	U
129-00-0-----	Pyrene	10	U
85-68-7-----	Butylbenzylphthalate	10	U
91-94-1-----	3,3'-Dichlorobenzidine	20	U
56-55-3-----	Benzo(a)anthracene	10	U
218-01-9-----	Chrysene	10	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	4	J
117-84-0-----	Di-n-octylphthalate	2	J
205-99-2-----	Benzo(b)fluoranthene	10	U
207-08-9-----	Benzo(k)fluoranthene	10	U
50-32-8-----	Benzo(a)pyrene	10	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	10	U
53-70-3-----	Dibenz(a,h)anthracene	10	U
191-24-2-----	Benzo(g,h,i)perylene	10	U
110-86-1-----	Pyridine	50	U

DU

U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW128RE

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.24RE

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: FFK544.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 0 dec.

Date Extracted: 12/13/96

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 12/17/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	UG/L	Q
99-09-2-----	3-Nitroaniline	50	U
83-32-9-----	Acenaphthene	10	U
121-14-2-----	2,4-Dinitrotoluene	10	U
51-28-5-----	2,4-Dinitrophenol	50	U
100-02-7-----	4-Nitrophenol	50	U
132-64-9-----	Dibenzofuran	10	U
84-66-2-----	Diethylphthalate	10	U
7005-72-3-----	4-Chlorophenyl-phenylether	10	U
86-73-7-----	Fluorene	10	U
100-01-6-----	4-Nitroaniline	50	U
534-52-1-----	4,6-Dinitro-2-methylphenol	50	U
86-30-6-----	N-Nitrosodiphenylamine (1)	10	U
101-55-3-----	4-Bromophenylphenylether	10	U
118-74-1-----	Hexachlorobenzene	10	U
87-86-5-----	Pentachlorophenol	50	U
85-01-8-----	Phenanthrene	10	U
120-12-7-----	Anthracene	10	U
84-74-2-----	Di-n-butylphthalate	3	J
206-44-0-----	Fluoranthene	10	U
129-00-0-----	Pyrene	10	U
85-68-7-----	Butylbenzylphthalate	10	U
91-94-1-----	3,3'-Dichlorobenzidine	20	U
56-55-3-----	Benzo(a)anthracene	10	U
218-01-9-----	Chrysene	10	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	5	J
117-84-0-----	Di-n-octylphthalate	3	J
205-99-2-----	Benzo(b)fluoranthene	10	U
207-08-9-----	Benzo(k)fluoranthene	10	U
50-32-8-----	Benzo(a)pyrene	10	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	10	U
53-70-3-----	Dibenz(a,h)anthracene	10	U
191-24-2-----	Benzo(g,h,i)perylene	10	U
110-86-1-----	Pyridine	50	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

29SW128RE

Lab Name: SWL-TULSA

Contract: FT HOOD

Lab Code: SWOK

Case No.: SAIC

SAS No.:

SDG No.: 27758

Matrix: (soil/water) WATER

Lab Sample ID: 27758.24RE

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: FFK544.D

Level: (low/med) LOW

Date Received: 11/23/96

% Moisture: not dec. 0 dec.

Date Extracted: 12/13/96

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 12/17/96

Concentrated Extract Volume: 1000(uL)

GPC Cleanup: (Y/N) N

pH: 7.5

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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95-94-3-----	1,2,4,5-Tetrachlorobenzene	10	U
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APPENDIX B

Fort Hood RFI Background Soils Data

Ft. Hood RCRA Facility Investigation
FH-BKG Fort Hood Background
Analytical Results

Station: SB101 Background Soil Boring SB101

Sample ID: FH000-SB10112-10-96/2.0-2.5 (BKSB101)

Sample Depth: 2.0-2.5 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/10/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	3	0.41	MG/KG		
Barium	21.3	0.10	MG/KG	*	J
Cadmium	0.12	0.05	MG/KG	B	
Chromium	5.1	0.10	MG/KG	E*	J
Lead	6	0.17	MG/KG	EN*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.37	0.37	MG/KG	U	U
Silver	0.24	0.24	MG/KG	U	U

Sample ID: FH000-SB10212-10-96/4.0-4.7 (BKSB102)

Sample Depth: 4.0-4.7 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/10/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	2	0.39	MG/KG		
Barium	8	0.10	MG/KG	*	J
Cadmium	0.05	0.05	MG/KG	B	
Chromium	10.3	0.10	MG/KG	E*	J
Lead	5	0.17	MG/KG	EN*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.36	0.36	MG/KG	U	U
Silver	0.23	0.23	MG/KG	U	U

Sample ID: FH000-SB10312-10-96/10.5-11.0 (BKSB103)

Sample Depth: 10.5-11.0 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/10/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	9.1	0.42	MG/KG		
Barium	14.7	0.10	MG/KG	*	J
Cadmium	0.05	0.05	MG/KG	U	U
Chromium	10.1	0.10	MG/KG	E*	J
Lead	9.5	0.18	MG/KG	EN*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.38	0.38	MG/KG	U	U
Silver	0.24	0.24	MG/KG	U	U

Ft. Hood RCRA Facility Investigation

FH-BKG Fort Hood Background

Analytical Results

Station: SB102 Background Soil Boring SB102

Sample ID: FH000-SB12112-12-96/0.0-1.5 (BKSB121)

Sample Depth: 0.0-1.5 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/12/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	4.1	0.38	MG/KG		
Barium	24	0.09	MG/KG		
Cadmium	0.18	0.05	MG/KG	B	
Chromium	6.3	0.09	MG/KG		
Lead	10.2	0.16	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.34	0.34	MG/KG	U	U
Silver	0.22	0.22	MG/KG	U	U

Sample ID: FH000-SB12212-12-96/14.0-14.5 (BKSB122)

Sample Depth: 14.0-14.5 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/12/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	3.2	0.36	MG/KG		
Barium	6.1	0.09	MG/KG		
Cadmium	0.06	0.04	MG/KG	B	
Chromium	4.9	0.09	MG/KG		
Lead	4.1	0.15	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.33	0.33	MG/KG	U	U
Silver	0.21	0.21	MG/KG	U	U

Sample ID: FH000-SB12312-12-96/19.0-19.5 (BKSB123)

Sample Depth: 19.0-19.5 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/12/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	3.8	0.36	MG/KG		
Barium	5.5	0.09	MG/KG		
Cadmium	0.08	0.04	MG/KG	B	
Chromium	4.3	0.09	MG/KG		
Lead	3.8	0.15	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.33	0.33	MG/KG	U	U
Silver	0.21	0.21	MG/KG	U	U

Sample ID: FH000-SB20212-12-96/0.0-1.5 (BKSB202)

Sample Depth: 0.0-1.5 FT

Matrix: Soil

Field Sample Type: Field Duplicate

Collected: 12/12/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	4.2	0.37	MG/KG		
Barium	18.2	0.09	MG/KG		
Cadmium	0.12	0.04	MG/KG	B	
Chromium	5.9	0.09	MG/KG		
Lead	4.5	0.16	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.34	0.34	MG/KG	U	U
Silver	0.21	0.21	MG/KG	U	U

Ft. Hood RCRA Facility Investigation
FH-BKG Fort Hood Background
Analytical Results

Station: SB103 Background Soil Boring SB103

Sample ID: FH000-SB10412-10-96/0.0-1.5 (BKSB104)

Sample Depth: 0.0-1.5 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/10/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	6.2	0.35	MG/KG		
Barium	28.2	0.08	MG/KG	*	J
Cadmium	0.15	0.04	MG/KG	B	
Chromium	3.1	0.08	MG/KG	E*	J
Lead	5.3	0.15	MG/KG	EN*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.32	0.32	MG/KG	U	U
Silver	0.2	0.20	MG/KG	U	U

Sample ID: FH000-SB10512-10-96/4.0-6.0 (BKSB105)

Sample Depth: 4.0-6.0 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/10/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	4.3	0.36	MG/KG		
Barium	23.4	0.09	MG/KG	*	J
Cadmium	0.11	0.04	MG/KG	B	
Chromium	4	0.09	MG/KG	E*	J
Lead	3.9	0.15	MG/KG	EN*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.33	0.33	MG/KG	U	U
Silver	0.21	0.21	MG/KG	U	U

Sample ID: FH000-SB10612-10-96/9.0-9.4 (BKSB106)

Sample Depth: 9.0-9.4 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/10/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	4.4	0.37	MG/KG		
Barium	43.7	0.09	MG/KG	*	J
Cadmium	0.16	0.04	MG/KG	B	
Chromium	7.6	0.09	MG/KG	E*	J
Lead	5	0.16	MG/KG	EN*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.33	0.33	MG/KG	U	U
Silver	0.21	0.21	MG/KG	U	U

Sample ID: FH000-SB10712-10-96/14.0-15.0 (BKSB107)

Sample Depth: 14.0-15.0 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/10/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	53	0.39	MG/KG		
Barium	1350	0.09	MG/KG	*	J
Cadmium	0.35	0.05	MG/KG	B	
Chromium	5.1	0.09	MG/KG	E*	J
Lead	6.1	0.17	MG/KG	EN*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.36	0.36	MG/KG	U	U
Silver	0.23	0.23	MG/KG	U	U

Ft. Hood RCRA Facility Investigation

FH-BKG Fort Hood Background

Analytical Results

Station: SB104 Background Soil Boring SB104

Sample ID: FH000-SB10812-11-96/0.0-1.0 (BKSB108)

Sample Depth: 0.0-1.0 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/11/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	6	0.40	MG/KG		
Barium	72.4	0.10	MG/KG	*	J
Cadmium	0.2	0.05	MG/KG	B	
Chromium	12.9	0.10	MG/KG	E*	J
Lead	9.8	0.17	MG/KG	EN*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.37	0.37	MG/KG	U	U
Silver	0.23	0.23	MG/KG	U	U

Sample ID: FH000-SB10912-11-96/4.0-5.0 (BKSB109)

Sample Depth: 4.0-5.0 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/11/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	3.5	0.38	MG/KG		
Barium	155	0.09	MG/KG	*	J
Cadmium	0.07	0.05	MG/KG	B	
Chromium	6.5	0.09	MG/KG	E*	J
Lead	3.2	0.16	MG/KG	EN*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.34	0.34	MG/KG	U	U
Silver	0.22	0.22	MG/KG	U	U

Sample ID: FH000-SB11012-11-96/11.0-11.5 (BKSB110)

Sample Depth: 11.0-11.5 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/11/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	4.8	0.40	MG/KG		
Barium	24.1	0.10	MG/KG	*	J
Cadmium	0.06	0.05	MG/KG	B	
Chromium	16.6	0.10	MG/KG	E*	J
Lead	7.8	0.17	MG/KG	EN*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.36	0.36	MG/KG	U	U
Silver	0.23	0.23	MG/KG	U	U

Sample ID: FH000-SB11112-11-96/18.0-18.5 (BKSB111)

Sample Depth: 18.0-18.5 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/11/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	5.2	0.38	MG/KG		
Barium	7.2	0.09	MG/KG	*	J
Cadmium	0.05	0.05	MG/KG	B	
Chromium	6.2	0.09	MG/KG	E*	J
Lead	5.3	0.16	MG/KG	EN*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.35	0.35	MG/KG	U	U
Silver	0.22	0.22	MG/KG	U	U

Ft. Hood RCRA Facility Investigation

FH-BKG Fort Hood Background

Analytical Results

Station:	SB105	Background Soil Boring SB105				
Sample ID:	FH000-SB11212-11-96/1.0-1.5 (BKSB112)		Sample Depth:	1.0-1.5 FT		
Matrix:	Soil		Field Sample Type:	Grab		
			Collected:	12/11/96		
Metals		Result	Detection Limit	Units	Qualifiers	
					Lab	Data
Arsenic		1.6	0.35	MG/KG		
Barium		6.6	0.09	MG/KG	*	J
Cadmium		0.04	0.04	MG/KG	U	U
Chromium		4	0.09	MG/KG	E*	J
Lead		1.5	0.15	MG/KG	EN*	J
Mercury		0.04	0.04	MG/KG	U	U
Selenium		0.32	0.32	MG/KG	U	U
Silver		0.2	0.20	MG/KG	U	U
Sample ID: FH000-SB11312-11-96/4.0-5.0 (BKSB113)			Sample Depth:	4.0-5.0 FT		
Matrix: Soil			Field Sample Type:	Grab	Collected: 12/11/96	
Metals		Result	Detection Limit	Units	Qualifiers	
					Lab	Data
Arsenic		5.7	0.40	MG/KG		
Barium		20.5	0.10	MG/KG	*	J
Cadmium		0.07	0.05	MG/KG	B	
Chromium		8.9	0.10	MG/KG	E*	J
Lead		6	0.17	MG/KG	EN*	J
Mercury		0.04	0.04	MG/KG	U	U
Selenium		0.36	0.36	MG/KG	U	U
Silver		0.23	0.23	MG/KG	U	U
Sample ID: FH000-SB11412-11-96/11.0-12.0 (BKSB114)			Sample Depth:	11.0-12.0 FT		
Matrix: Soil			Field Sample Type:	Grab	Collected: 12/11/96	
Metals		Result	Detection Limit	Units	Qualifiers	
					Lab	Data
Arsenic		5.2	0.42	MG/KG		
Barium		25.2	0.10	MG/KG	*	J
Cadmium		0.05	0.05	MG/KG	U	U
Chromium		20.3	0.10	MG/KG	E*	J
Lead		7.7	0.18	MG/KG	EN*	J
Mercury		0.04	0.04	MG/KG	U	U
Selenium		0.38	0.38	MG/KG	U	U
Silver		0.24	0.24	MG/KG	U	U
Sample ID: FH000-SB11512-11-96/15.0-15.5 (BKSB115)			Sample Depth:	15.0-15.5 FT		
Matrix: Soil			Field Sample Type:	Grab	Collected: 12/11/96	
Metals		Result	Detection Limit	Units	Qualifiers	
					Lab	Data
Arsenic		5.3	0.36	MG/KG		
Barium		10.6	0.09	MG/KG	*	J
Cadmium		0.06	0.04	MG/KG	B	
Chromium		7.3	0.09	MG/KG	E*	J
Lead		5.1	0.15	MG/KG	EN*	J
Mercury		0.04	0.04	MG/KG	U	U
Selenium		0.32	0.32	MG/KG	U	U
Silver		0.2	0.20	MG/KG	U	U

Ft. Hood RCRA Facility Investigation
FH-BKG Fort Hood Background
Analytical Results

Sample ID: FH000-SB11612-11-96/22.0-22.5 (BKSB116)

Sample Depth: 22.0-22.5 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/11/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	11.6	0.37	MG/KG		
Barium	4.9	0.09	MG/KG	*	J
Cadmium	0.2	0.04	MG/KG	B	
Chromium	2.7	0.09	MG/KG	E*	J
Lead	5.6	0.16	MG/KG	EN*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.33	0.33	MG/KG	U	U
Silver	0.21	0.21	MG/KG	U	U

Ft. Hood RCRA Facility Investigation
FH-BKG Fort Hood Background
Analytical Results

Station: SB106 Background Soil Boring SB106

Sample ID: FH000-SB11712-12-96/0.0-1.0 (BKSB117)

Sample Depth: 0.0-1.0 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/12/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	4.4	0.37	MG/KG		
Barium	27.9	0.09	MG/KG	*	J
Cadmium	0.18	0.04	MG/KG	B	
Chromium	5.7	0.09	MG/KG	E*	J
Lead	8.3	0.16	MG/KG	EN*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.33	0.33	MG/KG	U	U
Silver	0.21	0.21	MG/KG	U	U

Sample ID: FH000-SB11812-12-96/9.0-9.5 (BKSB118)

Sample Depth: 9.0-9.5 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/12/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	2.6	0.37	MG/KG		
Barium	4.4	0.09	MG/KG	*	J
Cadmium	0.19	0.04	MG/KG	B	
Chromium	2.2	0.09	MG/KG	E*	J
Lead	3.7	0.16	MG/KG	EN*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.34	0.34	MG/KG	U	U
Silver	0.21	0.21	MG/KG	U	U

Sample ID: FH000-SB11912-12-96/14.0-14.5 (BKSB119)

Sample Depth: 14.0-14.5 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/12/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	0.66	0.37	MG/KG	B	
Barium	3	0.09	MG/KG		
Cadmium	0.06	0.04	MG/KG	B	
Chromium	2.1	0.09	MG/KG		
Lead	1.3	0.16	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.33	0.33	MG/KG	U	U
Silver	0.21	0.21	MG/KG	U	U

Sample ID: FH000-SB12012-12-96/19.0-20.0 (BKSB120)

Sample Depth: 19.0-20.0 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/12/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	0.44	0.35	MG/KG	B	
Barium	2	0.08	MG/KG		
Cadmium	0.04	0.04	MG/KG	U	U
Chromium	0.93	0.08	MG/KG	B	
Lead	0.72	0.15	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.32	0.32	MG/KG	U	U
Silver	0.2	0.20	MG/KG	U	U

Ft. Hood RCRA Facility Investigation

FH-BKG Fort Hood Background

Analytical Results

Sample ID: FH000-SB20112-12-96/0.0-1.0

(BKS201)

Sample Depth: 0.0-1.0 FT

Matrix: Soil

Field Sample Type: Field Duplicate

Collected: 12/12/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	4.4	0.36	MG/KG		
Barium	17.9	0.09	MG/KG		
Cadmium	0.14	0.04	MG/KG	B	
Chromium	2.6	0.09	MG/KG		
Lead	5.9	0.15	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.33	0.33	MG/KG	U	U
Silver	0.21	0.21	MG/KG	U	U

Ft. Hood RCRA Facility Investigation
FH-BKG Fort Hood Background
Analytical Results

Station: SB107 Background Soil Boring SB107

Sample ID: FH000-SB12412-12-96/0.0-1.0 (BKSB124)

Sample Depth: 0.0-1.0 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/12/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	6	0.37	MG/KG		
Barium	19.3	0.09	MG/KG		
Cadmium	0.11	0.04	MG/KG	B	
Chromium	7.2	0.09	MG/KG		
Lead	4.5	0.16	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.34	0.34	MG/KG	U	U
Silver	0.21	0.21	MG/KG	U	U

Sample ID: FH000-SB12512-12-96/4.0-4.5 (BKSB125)

Sample Depth: 4.0-4.5 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/12/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	3.2	0.35	MG/KG		
Barium	18.1	0.09	MG/KG		
Cadmium	0.11	0.04	MG/KG	B	
Chromium	5.1	0.09	MG/KG		
Lead	1.7	0.15	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.36	0.32	MG/KG	B	
Silver	0.2	0.20	MG/KG	U	U

Sample ID: FH000-SB12612-12-96/5.5-6.0 (BKSB126)

Sample Depth: 5.5-6.0 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 12/12/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	2.5	0.36	MG/KG		
Barium	5.4	0.09	MG/KG		
Cadmium	0.06	0.04	MG/KG	B	
Chromium	5.5	0.09	MG/KG		
Lead	1.5	0.15	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.44	0.33	MG/KG	B	
Silver	0.21	0.21	MG/KG	U	U

Sample ID: FH000-SB20312-12-96/0.0-1.0 (BKSB203)

Sample Depth: 0.0-1.0 FT

Matrix: Soil

Field Sample Type: Field Duplicate

Collected: 12/12/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	5.9	0.37	MG/KG		
Barium	39	0.09	MG/KG		
Cadmium	0.17	0.05	MG/KG	B	
Chromium	9.3	0.09	MG/KG		
Lead	6.6	0.16	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.34	0.34	MG/KG	U	U
Silver	0.21	0.21	MG/KG	U	U

Ft. Hood RCRA Facility Investigation

FH-BKG Fort Hood Background

Analytical Results

Station: SB108 Background Soil Boring SB108

Sample ID: FH000-SB135/01-14-97/0.0-1.0 (BKSB135)

Sample Depth: 0.0-1.0 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 01/14/97

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	2.7	0.36	MG/KG		
Barium	15.4	0.09	MG/KG	*	J
Cadmium	0.17	0.04	MG/KG	B*	J
Chromium	6.1	0.09	MG/KG		
Lead	2.5	0.15	MG/KG	*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	1.5	1.5	MG/KG	UWN	R
Silver	0.21	0.21	MG/KG	U	U

Sample ID: FH000-SB136/01-14-97/5.0-5.5 (BKSB136)

Sample Depth: 5.0-5.5 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 01/14/97

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	4.3	0.38	MG/KG		
Barium	14.8	0.09	MG/KG	*	J
Cadmium	0.2	0.05	MG/KG	B*	J
Chromium	8.3	0.09	MG/KG		
Lead	3	0.16	MG/KG	*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.32	0.32	MG/KG	UWN	R
Silver	0.22	0.22	MG/KG	U	U

Sample ID: FH000-SB137/01-14-97/9.0-9.5 (BKSB137)

Sample Depth: 9.0-9.5 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 01/14/97

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	8.2	0.36	MG/KG		
Barium	7.8	0.09	MG/KG	*	J
Cadmium	0.18	0.04	MG/KG	B*	J
Chromium	8.1	0.09	MG/KG		
Lead	2.3	0.15	MG/KG	*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.31	0.31	MG/KG	UWN	R
Silver	0.21	0.21	MG/KG	U	U

Sample ID: FH000-SB138/01-14-97/14.0-14.5 (BKSB138)

Sample Depth: 14.0-14.5 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 01/14/97

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	9.2	0.38	MG/KG		
Barium	12.2	0.09	MG/KG	*	J
Cadmium	0.21	0.05	MG/KG	B*	J
Chromium	11.1	0.09	MG/KG		
Lead	4.1	0.16	MG/KG	*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.32	0.32	MG/KG	UWN	R
Silver	0.22	0.22	MG/KG	U	U

Ft. Hood RCRA Facility Investigation
FH-BKG Fort Hood Background
Analytical Results

Sample ID: FH000-SB139/01-14-97/16.5-17.0 (BKSB139)
 Matrix: Soil

Sample Depth: 16.5-17.0 FT
 Field Sample Type: Grab

Collected: 01/14/97

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	7.6	0.37	MG/KG		
Barium	7.3	0.09	MG/KG	*	J
Cadmium	0.2	0.04	MG/KG	B*	J
Chromium	8.4	0.09	MG/KG		
Lead	3.6	0.16	MG/KG	*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.31	0.31	MG/KG	UWN	R
Silver	0.21	0.21	MG/KG	U	U

Ft. Hood RCRA Facility Investigation

FH-BKG Fort Hood Background

Analytical Results

Station: SB109 Background Soil Boring SB109

Sample ID: FH000-SB140/01-15-97/0.0-1.0 (BKSB140)

Sample Depth: 0.0-1.0 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 01/15/97

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	4.8	0.41	MG/KG		
Barium	108	0.10	MG/KG	*	J
Cadmium	0.79	0.05	MG/KG	*	J
Chromium	16.1	0.10	MG/KG		
Lead	33.2	0.17	MG/KG	*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.35	0.35	MG/KG	UWN	R
Silver	0.24	0.24	MG/KG	U	U

Sample ID: FH000-SB141/01-15-97/4.0-5.0 (BKSB141)

Sample Depth: 4.0-5.0 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 01/15/97

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	5.6	0.43	MG/KG		
Barium	127	0.10	MG/KG	*	J
Cadmium	0.45	0.05	MG/KG	B*	J
Chromium	23.6	0.10	MG/KG		
Lead	12.1	0.18	MG/KG	*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	1.8	1.8	MG/KG	UN	R
Silver	0.25	0.25	MG/KG	U	U

Sample ID: FH000-SB142/01-15-97/9.0-10.0 (BKSB142)

Sample Depth: 9.0-10.0 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 01/15/97

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	3.8	0.44	MG/KG		
Barium	63	0.11	MG/KG	*	J
Cadmium	0.29	0.05	MG/KG	B*	J
Chromium	8.4	0.11	MG/KG		
Lead	5	0.19	MG/KG	*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	1.9	1.9	MG/KG	UWN	R
Silver	0.25	0.25	MG/KG	U	U

Sample ID: FH000-SB143/01-15-97/14.5-15.0 (BKSB143)

Sample Depth: 14.5-15.0 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 01/15/97

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	3.8	0.41	MG/KG		
Barium	39.3	0.10	MG/KG	*	J
Cadmium	0.27	0.05	MG/KG	B*	J
Chromium	12.2	0.10	MG/KG		
Lead	6.6	0.17	MG/KG	*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.35	0.35	MG/KG	UWN	R
Silver	0.24	0.24	MG/KG	U	U

Ft. Hood RCRA Facility Investigation

FH-BKG Fort Hood Background

Analytical Results

Sample ID: FH000-SB144/01-15-97/19.0-19.3 (BKS144)

Sample Depth: 19.0-19.3 FT

Matrix: Soil

Field Sample Type: Grab

Collected: 01/15/97

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	3.7	0.37	MG/KG		
Barium	36.1	0.09	MG/KG	*	J
Cadmium	0.2	0.04	MG/KG	B*	J
Chromium	6.5	0.09	MG/KG		
Lead	4	0.16	MG/KG	*	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.31	0.31	MG/KG	UWN	R
Silver	0.21	0.21	MG/KG	U	U

Ft. Hood RCRA Facility Investigation
FH-BKG Fort Hood Background
Analytical Results

Station: SB110	Background Soil Boring SB110				
Sample ID: FH000-SB12712-13-96/0.0-1.0	(BKSB127)	Sample Depth: 0.0-1.0 FT			
Matrix: Soil		Field Sample Type: Grab		Collected: 12/13/96	
Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	1.9	0.36	MG/KG		
Barium	18.8	0.09	MG/KG		
Cadmium	0.04	0.04	MG/KG	U	U
Chromium	3.7	0.09	MG/KG		
Lead	3.8	0.15	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.33	0.33	MG/KG	U	U
Silver	0.21	0.21	MG/KG	U	U
Sample ID: FH000-SB12812-13-96/4.0-6.0	(BKSB128)	Sample Depth: 4.0-6.0 FT			
Matrix: Soil		Field Sample Type: Grab		Collected: 12/13/96	
Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	3.6	0.38	MG/KG		
Barium	36.3	0.09	MG/KG		
Cadmium	0.05	0.05	MG/KG	U	U
Chromium	8.5	0.09	MG/KG		
Lead	7.5	0.16	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG		
Selenium	0.35	0.35	MG/KG	U	U
Silver	0.22	0.22	MG/KG	U	U
Sample ID: FH000-SB12912-13-96/10.0-11.0	(BKSB129)	Sample Depth: 10.0-11.0 FT			
Matrix: Soil		Field Sample Type: Grab		Collected: 12/13/96	
Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	2.6	0.36	MG/KG		
Barium	26.3	0.09	MG/KG		
Cadmium	0.04	0.04	MG/KG	U	U
Chromium	4.6	0.09	MG/KG		
Lead	4.1	0.15	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.33	0.33	MG/KG	U	U
Silver	0.21	0.21	MG/KG	U	U
Sample ID: FH000-SB13012-13-96/15.0-16.0	(BKSB130)	Sample Depth: 15.0-16.0 FT			
Matrix: Soil		Field Sample Type: Grab		Collected: 12/13/96	
Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	1	0.35	MG/KG	B	
Barium	8.1	0.08	MG/KG		
Cadmium	0.07	0.04	MG/KG	B	
Chromium	1.8	0.08	MG/KG		
Lead	3.1	0.15	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.32	0.32	MG/KG	U	U
Silver	0.2	0.20	MG/KG	U	U

Ft. Hood RCRA Facility Investigation

FH-BKG Fort Hood Background

Analytical Results

Sample ID: FH000-SB13112-13-96/20.0-21.0 (BKSB131) Sample Depth: 20.0-21.0 FT
 Matrix: Soil Field Sample Type: Grab Collected: 12/13/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	5.3	0.38	MG/KG		
Barium	65.9	0.09	MG/KG		
Cadmium	0.15	0.05	MG/KG	B	
Chromium	7.7	0.09	MG/KG		
Lead	10.1	0.16	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.34	0.34	MG/KG	U	U
Silver	0.22	0.22	MG/KG	U	U

Sample ID: FH000-SB13212-13-96/25.0-26.0 (BKSB132) Sample Depth: 25.0-26.0 FT
 Matrix: Soil Field Sample Type: Grab Collected: 12/13/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	4.2	0.37	MG/KG		
Barium	41.7	0.09	MG/KG		
Cadmium	0.04	0.04	MG/KG	U	U
Chromium	5.9	0.09	MG/KG		
Lead	7.8	0.16	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.34	0.34	MG/KG	U	U
Silver	0.21	0.21	MG/KG	U	U

Sample ID: FH000-SB13312-13-96/30.0-31.0 (BKSB133) Sample Depth: 30.0-31.0 FT
 Matrix: Soil Field Sample Type: Grab Collected: 12/13/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	3.2	0.39	MG/KG		
Barium	68.6	0.09	MG/KG		
Cadmium	0.11	0.05	MG/KG	B	
Chromium	4.9	0.09	MG/KG		
Lead	6.3	0.17	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.35	0.35	MG/KG	U	U
Silver	0.22	0.22	MG/KG	U	U

Sample ID: FH000-SB13412-13-96/34.0-34.5 (BKSB134) Sample Depth: 34.0-34.5 FT
 Matrix: Soil Field Sample Type: Grab Collected: 12/13/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	2.9	0.36	MG/KG		
Barium	20.1	0.09	MG/KG		
Cadmium	0.08	0.04	MG/KG	B	
Chromium	1.2	0.09	MG/KG		
Lead	2.3	0.15	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.33	0.33	MG/KG	U	U
Silver	0.21	0.21	MG/KG	U	U

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Analytical Results

Sample ID: FH000-SB20412-13-96/4.0-6.0 (BKS204)

Sample Depth: 4.0-6.0 FT

Matrix: Soil

Field Sample Type: Field Duplicate

Collected: 12/13/96

Metals	Result	Detection Limit	Units	Qualifiers	
				Lab	Data
Arsenic	3.2	0.38	MG/KG		
Barium	31.9	0.09	MG/KG		
Cadmium	0.05	0.05	MG/KG	U	U
Chromium	6.5	0.09	MG/KG		
Lead	7.1	0.16	MG/KG	EN	J
Mercury	0.04	0.04	MG/KG	U	U
Selenium	0.35	0.35	MG/KG	U	U
Silver	0.22	0.22	MG/KG	U	U

APPENDIX C

Fort Hood RFI Background Soil Boring Logs



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Boring FHBKG-SB101

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FHBKG : Background
Start Date : 12/10/96
End Date : 12/10/96
Northing Coord. : 3446458.08 m
Easting Coord. : 61375.50 m UTM 14 North
Total Depth of Boring : 18.5 feet

Drilling Company : Terra-Mar
Driller : Bill Christopher
Designation of Drill : Mobile Drill B-59
Type of Drill Rig : Hollow Stem Auger
Geologist : Jeff DeVaughn
Depth to Bedrock : 15.0 feet
Depth Drilled Into Rock: 3.5 feet
Borehole Diameter : 8 inches
Sampling Equipment : 4.25" Augers
: CME Sampler 5' long

Depth in feet	Surf. Elev. 887.80ft	USCS	GRAPHIC	Water Levels	DESCRIPTION	REMARKS		
0					Topsoil. 0.0-0.5' bgs.; weathered tan limestone.	No sample recovery.		
1	887	CL			CLAY; weathered limestone fragments; damp; soft; moderately plastic; 10YR5/4 yellowish brown.	Sample BKSB101 collected 2.0-2.5' bgs.		
2	886				Same as above; dry.			
3	885				Same as above; dry; more weathered limestone.	Description from soil cuttings.		
4	884							
5	883	CH			CLAY, fat; fewer fragments; damp; firm; highly plastic; mottled 10YR6/6 brownish yellow and 2.5Y7/1 light gray.	Sample BKSB102 collected 4.0-4.7' bgs.		
6	882				Same CLAY as above; more silty; interbedded with weathered limestone; dry.	Description from soil cuttings.		
7	881							
8	880							
9	879	CL						
10	878				Same as above; dry.			
11	877				Silty CLAY; dry; firm; non-plastic; 10YR6/6 brownish yellow.	Sample BKSB103 collected 10.5-11.0' bgs.		
12	876				Same as above; interbedded with tan weathered limestone; dry.			
13	875	LS						
14	874							
15	873				LIMESTONE, weathered; dry; blue-gray.	Description from soil cuttings.		
16	872							
17	871							
18	870				Soil colors from Munsell Soil Color Chart, 1992 Revised Edition.			
19	869				Bottom of Boring @ 18.5' bgs.			
20	868							



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FHBKG : Background
Start Date : 12/12/96
End Date : 12/12/96
Northing Coord. : 3446503.40 m
Easting Coord. : 613980.64 m UTM 14 North
Total Depth of Boring : 19.5 feet

Drilling Company : Terra-Mar
Driller : Bill Christopher
Designation of Drill : Mobile Drill B-59
Type of Drill Rig : Hollow Stem Auger
Geologist : Jeff DeVaughn
Depth to Bedrock : 16.0 feet
Depth Drilled Into Rock: 3.5 feet
Borehole Diameter : 8 inches
Sampling Equipment : 4.25" Augers
: CME Sampler 5' long

Depth in feet	Surf. Elev. 912.28ft	USCS	GRAPHIC	Water Levels	DESCRIPTION	REMARKS
0	912				Topsoil. 0.0-0.4' bgs.	Sample BKSB121, duplicate BKSB202, and split sample BKSB302 collected 0.0-0.5' bgs.
1	911				Silty CLAY; weathered limestone fragments; dry; firm; non-plastic; mottled 10YR5/3 brown and 10YR8/2 very pale brown.	
2	910	CL			Same as above; dry.	Description from soil cuttings.
3	909					
4	908	CL			LIMESTONE, weathered, tan; and Silty Clay interbeds; dry.	
5	907					Zones of limestone and highly indurated silty clay (weathered limestone?); shell fragments; roots; dry; very hard; 2.5Y8/2 pale yellow.
6	906					
7	905					
8	904					
9	903				Same as above; dry.	Description from soil cuttings.
10	902					
11	901	CL			Same as above; dry.	
12	900					
13	899					
14	898				Same as above; dry.	Sample BKSB122 collected 14.0-14.5' bgs.
15	897					Description from soil cuttings.
16	896				LIMESTONE, weathered; dry; blue-gray.	
17	895					
18	894	LS			Same as above; dry.	Sample BKSB123 collected 19.0-19.5' bgs.
19	893				Same as above; dry.	
20					Bottom of Boring @ 19.5' bgs.	Soil colors from Munsell Soil Color Chart, 1992 Revised Edition.



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FHBKG : Background
Start Date : 12/10/96
End Date : 12/10/96
Northing Coord. : 3447405.80 m
Easting Coord. : 606690.49 m UTM 14 North
Total Depth of Boring : 17.0 feet

Drilling Company : Terra-Mar
Driller : Bill Christopher
Designation of Drill : Mobile Drill B-59
Type of Drill Rig : Hollow Stem Auger
Geologist : Jeff DeVaughn
Depth to Bedrock : 15.0 feet
Depth Drilled Into Rock: 2.0 feet
Borehole Diameter : 8 inches
Sampling Equipment : 4.25" Augers
: CME Sampler 5' long

Depth in feet	Surf. Elev. 795.26ft	USCS	GRAPHIC	Water Levels	DESCRIPTION	REMARKS
0	795				Topsoil. 0.0-0.2' bgs.; weathered tan limestone.	Sample BKSB104 collected 0.0-0.5' bgs.
1	794	CL			Interbedded Silty and pebbly CLAY; 40% coarse sand to pebble sized angular to subrounded fragments; dry; moderately plastic; thin layers of 10YR8/4 very pale brown and 10YR3/2 very dark grayish brown.	Description from soil cuttings.
2	793				Same as above; no pebbles; dry.	
3	792					
4	791				Same as above; weathered, tan limestone fragments; dry.	
5	790	CL			Same as above; interbeds of limestone; dry.	Sample BKSB105 collected 4.0-4.5' bgs.
6	789				Same as above; dry.	
7	788					
8	787					
9	786	CL			Same as above; dry.	Sample BKSB106 collected 9.0-9.5' bgs.
10	785					
11	784				Same as above; except more medium to coarse sand; dry; soft; non-plastic.	
12	783					
13	782				Same as above; dry.	Description from soil cuttings.
14	781	CL			Silty CLAY; weathered limestone fragments; damp; firm; moderately plastic; mottled 10YR8/2 very pale brown and 10YR6/4 light yellowish brown.	Sample BKSB107 collected 14.0-15.0' bgs.
15	780				LIMESTONE, weathered; dry; blue-gray.	
16	779	LS				
17	778				Bottom of Boring @ 17.0' bgs.	
18	777					
19	776					
20						

Soil colors from Munsell Soil Color Chart, 1992 Revised Edition.



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FHBKG : Background
Start Date : 12/11/96
End Date : 12/11/96
Northing Coord. : 3447780.16 m
Easting Coord. : 613523.75 m UTM 14 North
Total Depth of Boring : 24.0 feet

Drilling Company : Terra-Mar
Driller : Bill Christopher
Designation of Drill : Mobile Drill B-59
Type of Drill Rig : Hollow Stem Auger
Geologist : Jeff DeVaughn
Depth to Bedrock : 24.0 feet
Depth Drilled Into Rock: NA
Borehole Diameter : 8 inches
Sampling Equipment : 4.25" Augers
: CME Sampler 5' long

Depth in feet	Surf. Elev. 896.29	USCS	GRAPHIC	Water Levels	DESCRIPTION	REMARKS
0	896				Topsoil. 0.0-1.0' bgs.; weathered tan limestone.	Sample BKSB108 collected 0.0-1.0' bgs.
1	895				Silty CLAY; trace organics; weathered limestone fragments; damp; soft; low plasticity; 2.5Y7/6 yellow.	
2	894				Same as above.	Description from soil cuttings.
3	893				Same as above; no organics; dry; 10YR7/8 yellow mottle.	Sample BKSB109 collected 4.0-5.0' bgs.
4	892				Same as above; slightly more silty; dry; hard; brittle.	Description from soil cuttings.
5	891	CL				Description from soil cuttings. Hard drilling.
6	890					
7	889					
8	888					
9	887				LIMESTONE, weathered; tan.	
10	886	LS			weathered limestone as above.	
11	885				Silty CLAY as above; dry.	Sample BKSB110 collected 11.0-11.5' bgs.
12	884	CL			Same as above; dry.	Geotechnical sample collected 12.0-13.0' bgs.
13	883				Silty CLAY and weathered LIMESTONE interbeds.	
14	882					Description from soil cuttings.
15	881	CL				
16	880					
17	879					
18	878	CL			Silty CLAY as above; dry.	Sample BKSB111 collected 18.0-18.5' bgs.
19	877				Silty CLAY and weathered LIMESTONE interbeds.	
20	876					Description from soil cuttings.
21	875	CL				
22	874					
23	873				Same as above; dry.	
24	872				Blue-gray weathered limestone fragments; dry.	Soil colors from Munsell Soil Color Chart, 1992 Revised Edition.
24	872	LS			Bottom of Boring at 24.0' bgs.	
25						



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FHBKG : Background
Start Date : 12/11/96
End Date : 12/11/96
Northing Coord. : Not
Easting Coord. : Surveyed
Total Depth of Boring : 24.0 feet

Drilling Company : Terra-Mar
Driller : Bill Christopher
Designation of Drill : Mobile Drill B-59
Type of Drill Rig : Hollow Stem Auger
Geologist : Jeff DeVaughn
Depth to Bedrock : 24.0 feet
Depth Drilled Into Rock: NA
Borehole Diameter : 8 inches
Sampling Equipment : 4.25" Augers
: CME Sampler 5' long

Depth in feet	Surf. Elev. NS	USCS	GRAPHIC	Water Levels	DESCRIPTION	REMARKS
0	0	GP			GRAVEL (graded area).	
1	-1	CL			Silty CLAY; weathered limestone fragments; dry; firm; non-plastic; 2.5Y6/4 light yellowish brown.	Sample BKSB112 collected 1.0-1.5' bgs.
2	-2				Same as above; dry.	Description from soil cuttings.
3	-3	CH			CLAY, fat; dry; firm; highly plastic; mottled 2.5Y6/4 light yellowish brown and 10YR6/6 brownish yellow.	Sample BKSB113 collected 4.0-5.0' bgs.
4	-4				Silty CLAY and LIMESTONE interbeds; dry; firm; 2.5Y6/4 light yellowish brown.	
5	-5	CL				Description from soil cuttings.
6	-6					
7	-7					
8	-8					
9	-9					
10	-10	CL			Same as above; dry.	
11	-11				Same as above; dry; moderately plastic.	Sample BKSB114 collected 11.0-12.0' bgs.
12	-12				Same as above; dry.	Description from soil cuttings.
13	-13	CL			Same as above; more silt; dry; hard; brittle; non-plastic.	Sample BKSB115 collected 15.0-15.5' bgs.
14	-14				Same as above with weathered limestone interbeds.	
15	-15	CL				Description from soil cuttings.
16	-16					
17	-17					
18	-18					
19	-19	CL			Same as above; dry.	Sample BKSB116 collected 22.0-22.5' bgs.
20	-20					
21	-21					
22	-22	LS			Blue-gray weathered limestone; dry; hard drilling to 24.0'.	
23	-23				Bottom of Boring at 24.0' bgs.	Soil colors from Munsell Soil Color Chart, 1992 Revised Edition.
24	-24					
25	-25					



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FHBKG : Background
Start Date : 12/12/96
End Date : 12/12/96
Northing Coord. : Not
Easting Coord. : Surveyed
Total Depth of Boring : 25.5 feet

Drilling Company : Terra-Mar
Driller : Bill Christopher
Designation of Drill : Mobile Drill B-59
Type of Drill Rig : Hollow Stem Auger
Geologist : Jeff DeVaughn
Depth to Bedrock : 25.5 feet
Depth Drilled Into Rock: NA
Borehole Diameter : 8 inches
Sampling Equipment : 4.25" Augers
: CME Sampler 5' long

Depth in feet	Surf. Elev. NS	USCS	GRAPHIC	Water Levels	DESCRIPTION	REMARKS
0	0	CL			Silty CLAY; weathered limestone fragments; dry; firm; non-plastic; mottled 2.5Y7/6 yellow and 10YR6/6 brownish yellow.	Sample BKSB117 collected 0.0-1.0' bgs.
1	-1				Same as above; dry.	Geotechnical sample collected 3.0-4.0' bgs.
2	-2				Same as above with weathered limestone interbeds.	Description from soil cuttings.
3	-3				Same as above with trace sand; dry.	
4	-4	CL				
5	-5					
6	-6					
7	-7	SM			Silty SAND, fine; dry; non-plastic; carbonate (HCL fizz); 2.5Y8/4 pale yellow.	Sample BKSB118 collected 9.0-9.5' bgs.
8	-8				Same as above; dry.	
9	-9				Same as above except color change to 19YR8/2 very pale brown.	
10	-10	SP			Same as above SAND, fine; except no silt.	Sample BKSB119 collected 14.0-14.5' bgs.
11	-11				Same as above; dry.	Description from soil cuttings.
12	-12					
13	-13	SW			SAND, fine; dry; soft; non-carbonate; 2.5Y8/4 pale yellow.	Sample BKSB120 collected 19.0-20.0' bgs.
14	-14				Same as above; dry.	Description from soil cuttings.
15	-15					
16	-16	LS			LIMESTONE, weathered; dry; tan.	Description from soil cuttings.
17	-17					
18	-18				Blue-gray weathered limestone; dry. Bottom of Boring at 25.5' bgs.	
19	-19					Soil colors from Munsell Soil Color Chart, 1992 Revised Edition.
20	-20					
21	-21					
22	-22					
23	-23					
24	-24					
25	-25					
26	-26					
27	-27					
28	-28					
29	-29					
30	-30					



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FHBKG : Background
Start Date : 12/12/96
End Date : 12/12/96
Northing Coord. : 3438421.71 m
Easting Coord. : 612222.83 m UTM 14 North
Total Depth of Boring : 6.0 feet

Drilling Company : Terra-Mar
Driller : Bill Christopher
Designation of Drill : Mobile Drill B-59
Type of Drill Rig : Hollow Stem Auger
Geologist : Jeff DeVaughn
Depth to Bedrock : 1.7 feet
Depth Drilled Into Rock: 4.3 feet
Borehole Diameter : 8 inches
Sampling Equipment : 4.25" Augers
: CME Sampler 5' long

Depth in feet	Surf. Elev. NS	USCS	GRAPHIC	Water Levels	DESCRIPTION	REMARKS
0	0					
1	-1	CL			Silty CLAY; weathered limestone fragments; dry; hard; non-plastic; mottled 10YR6/8 brownish yellow and 10YR6/2 light brownish gray.	Sample BKSB124 collected 0.0-1.0' bgs.
2	-2				LIMESTONE, weathered, fossiliferous; Blue-Gray; 2.5Y6/1 gray.	
3	-3					Description from soil cuttings.
4	-4	LS			Same as above	Sample BKSB125 collected 4.0-4.5' bgs.
5	-5					Description from soil cuttings.
6	-6				Same as above	Sample BKSB126 collected 5.5-6.0' bgs.
6	-6				Bottom of Boring at 6.0' bgs.	
7	-7					
8	-8					Soil colors from Munsell Soil Color Chart, 1992 Revised Edition.
9	-9					
10						



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FHBKG : Background
Start Date : 01/14/97
End Date : 01/14/97
Northing Coord. : Not
Easting Coord. : Surveyed
Total Depth of Boring : 17.0 feet

Drilling Company : Terra-Mar
Driller : Bill Christopher
Designation of Drill : Mobile Drill B-59
Type of Drill Rig : Hollow Stem Auger
Geologist : Jeff DeVaughn
Depth to Bedrock : 15.0 feet
Depth Drilled Into Rock: 2.0 feet
Borehole Diameter : 8 inches
Sampling Equipment : 4.25" Augers
: CME Sampler 5' long

Depth in feet	Surf. Elev. NS	USCS	GRAPHIC	Water Levels	DESCRIPTION	REMARKS
0	0				Topsoil 0.0-0.4'	Sample BKSB135 collected 0.0-1.0' bgs.
1	-1				Silty CLAY; weathered limestone fragments; dry; firm; non-plastic; 10YR6/8 brownish yellow.	
2	-2					
3	-3				Same as above; dry.	Description from soil cuttings.
4	-4					
5	-5				Same as above; dry; mottled with 2.5Y7/3 pale yellow.	Sample BKSB136 collected 5.0-5.5' bgs.
6	-6					
7	-7				Same as above; dry.	Description from soil cuttings.
8	-8	CL				
9	-9				Same as above; dry.	Sample BKSB137 collected 9.0-9.5' bgs.
10	-10					
11	-11					
12	-12				Same as above; dry.	Description from soil cuttings.
13	-13					
14	-14				Same as above; less silty; dry. Same as above; dry.	Sample BKSB138 collected 14.0-14.5' bgs.
15	-15				LIMESTONE, weathered; blue-gray.	
16	-16	LS			Same as above; dry.	Sample BKSB139 collected 16.5-17.0' bgs.
17	-17				Bottom of Boring at 17.0' bgs.	
18	-18					Soil colors from Munsell Soil Color Chart, 1992 Revised Edition.
19	-19					
20						



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FHBKG : Background
Start Date : 01/15/97
End Date : 01/15/97
Northing Coord. : 3471041.79 m
Easting Coord. : 626015.26 m UTM 14 North
Total Depth of Boring : 24.0 feet

Drilling Company : Terra-Mar
Driller : Bill Christopher
Designation of Drill : Mobile Drill B-59
Type of Drill Rig : Hollow Stem Auger
Geologist : Jeff DeVaughn
Depth to Bedrock : Not Encountered
Depth Drilled Into Rock: NA
Borehole Diameter : 8 inches
Sampling Equipment : 4.25" Augers
: CME Sampler 5' long

Depth in feet	Surf. Elev. 730.62ft	USCS	GRAPHIC	Water Levels	DESCRIPTION	REMARKS
0					Silty CLAY; trace roots; trace rock fragments <1cm, angular to subrounded; damp; highly plastic; 5YR2.5/1 black.	Sample BKSB140 collected 0.0-1.0' bgs.
1	730	CL			Same as above; damp.	Description from soil cuttings. Sample BKSB141 collected 4.0-5.0' bgs.
2	729				Same as above; damp.	
3	728				Same as above; damp.	
4	727				Same as above; damp.	
5	726				Same as above; damp.	
6	725				Same as above; damp.	
7	724	CL			Silty CLAY; trace weathered limestone fragments; dry; stiff; non-plastic; 7.5YR6/4 light brown.	Description from soil cuttings. Sample BKSB142 collected 9.0-10.0' bgs.
8	723				Some sand, fine, from 8-9' bgs.	
9	722				Same as above; dry.	
10	721				Same as above except rock fragments (mostly weathered limestone) up to 20% of total matrix.	
11	720				Same as above except rock fragments (mostly weathered limestone) up to 20% of total matrix.	
12	719				Same as above; dry.	
13	718				Same as above; dry.	
14	717				Same as above; dry.	
15	716				Same as above; with limestone fragments up to 40%; also 10% fine sand; dry.	
16	715				Same as above; dry.	
17	714				Same as above; dry.	
18	713				Same as above; dry.	
19	712	Same as above; dry.				
20	711	Same as above; dry.				
21	710	Same as above; dry.				
22	709	Same as above; dry.				
23	708	Same as above; dry.				
24	707	SM			Silty SAND, fine to medium; moist; soft; moderately plastic; 7.5Y6/8 reddish yellow and 7.5 YR7/1 light gray.	Water in hole, attempted sample, no recovery in gravel at 24'
25	706	GP			Bottom of boring at 24.0' bgs. GRAVEL,angular;saturated	Soil colors from Munsell Soil Color Chart, 1992 Revised Edition.



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FHBKG : Background
Start Date : 12/13/96
End Date : 12/13/96
Northing Coord. : 3472081.13 m
Easting Coord. : 626432.83 m UTM 14 North
Total Depth of Boring : 34.5 feet

Drilling Company : Terra-Mar
Driller : Bill Christopher
Designation of Drill : Mobile Drill B-59
Type of Drill Rig : Hollow Stem Auger
Geologist : Jeff DeVaughn
Depth to Bedrock : Not Encountered
Depth Drilled Into Rock: NA
Borehole Diameter : 8 inches
Sampling Equipment : 4.25" Augers
: CME Sampler 5' long

Depth in feet	Surf. Elev. 729.66ft	USCS	GRAPHIC	Water Levels	DESCRIPTION	REMARKS		
0	729	SM			SAND, fine to medium; some silt; damp; soft; non-plastic; 7.5YR5/6 strong brown.	Sample BKSB127 collected 0.0-1.0' bgs.		
1	728				2	727	Same as above; damp to moist.	
3	726	SC			Clayey SAND; damp; firm; moderately plastic; 2.5YR4/6 red.	Sample BKSB128 collected 4.0-6.0' bgs.		
4	725				5	724	Same as above; damp.	
6	723				7	722	Same as above; damp.	
8	721				9	720	Same as above; damp.	Geotechnical sample collected 8.0-9.0' bgs.
10	719				11	718	Same as above; slightly less clay; dry.	Sample BKSB129 collected 10.0-11.0' bgs.
12	717				13	716	Same as above; dry.	
14	715				15	714	Same as above; less clay; dry; color change 5YR5/6 yellowish red.	Sample BKSB130 collected 15.0-16.0' bgs.
16	713				17	712	Same as above; dry;	
18	711				19	710	Same as above; more clay; dry.	
20	709				CL			Silty CLAY; trace sand; trace tan weathered limestone fragments; dry; hard; 7.5YR6/6 reddish yellow.
21	708	22	707	Same as above; dry.				
23	706	24	705	Same as above; dry.				
25	704	26	703	Same as above; dry.				Sample BKSB132 collected 25.0-26.0' bgs.
27	702	28	701	Same as above; with more silt; moist; softer.				
29	700	30	699	Same as above; except very silty; damp; soft.				Sample BKSB133 collected 30.0-31.0' bgs.
31	698	32	697					
33	696	SM						
34	695	GW						
35	694							Silty SAND, fine; trace gravel and coarse sand at bottom; saturated; non-plastic; 7.5Y6/6 reddish yellow.
36	694				SAND, coarse, and GRAVEL, poorly sorted, angular to round; saturated; 1.5 water in hole.			
37	693				Bottom of boring at 34.5' bgs.			
38	692							
39	691							
40	690					Soil colors from Munsell Soil Color Chart, 1992 Revised Edition.		

APPENDIX D

Statistical Calculations

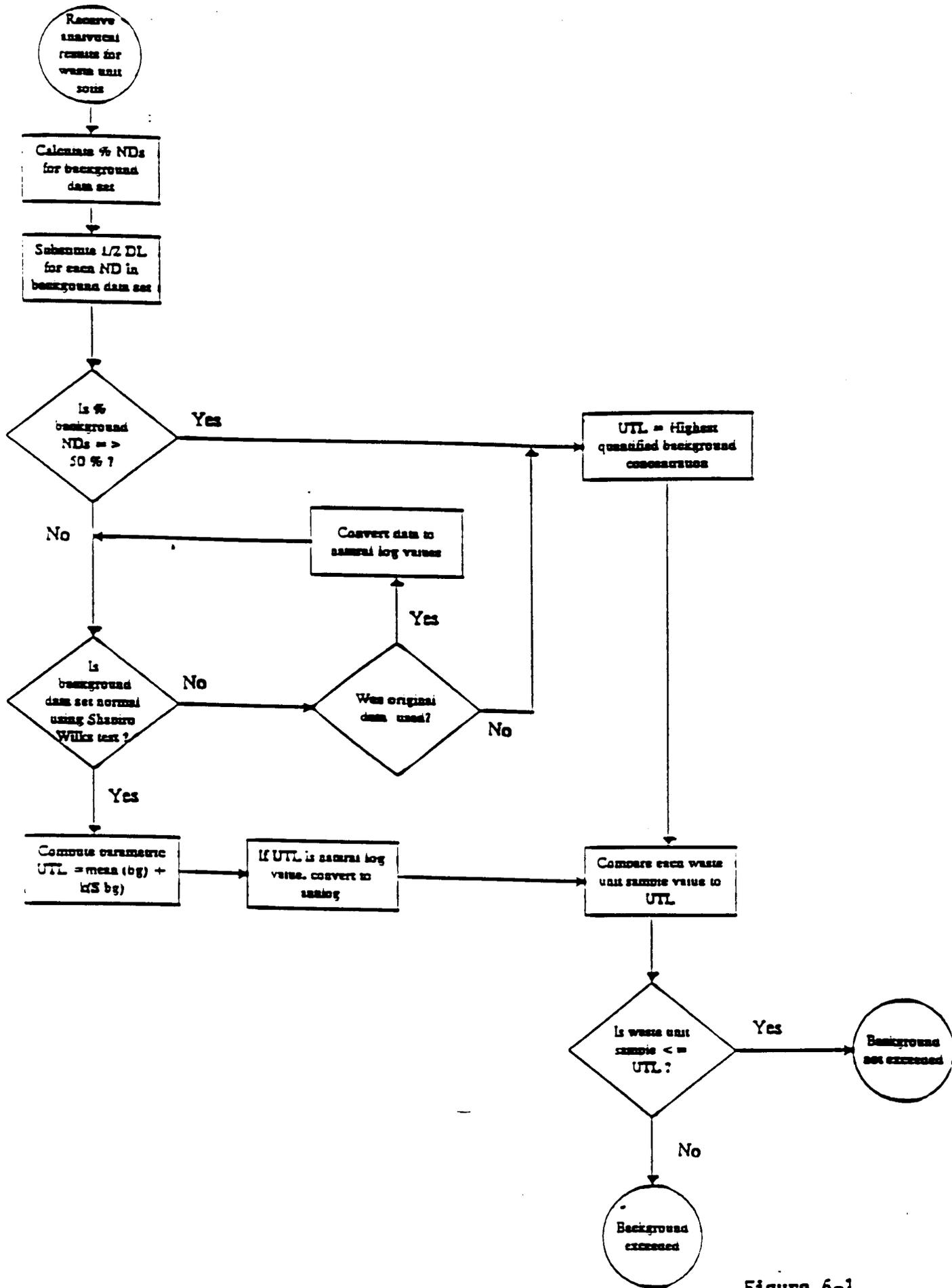
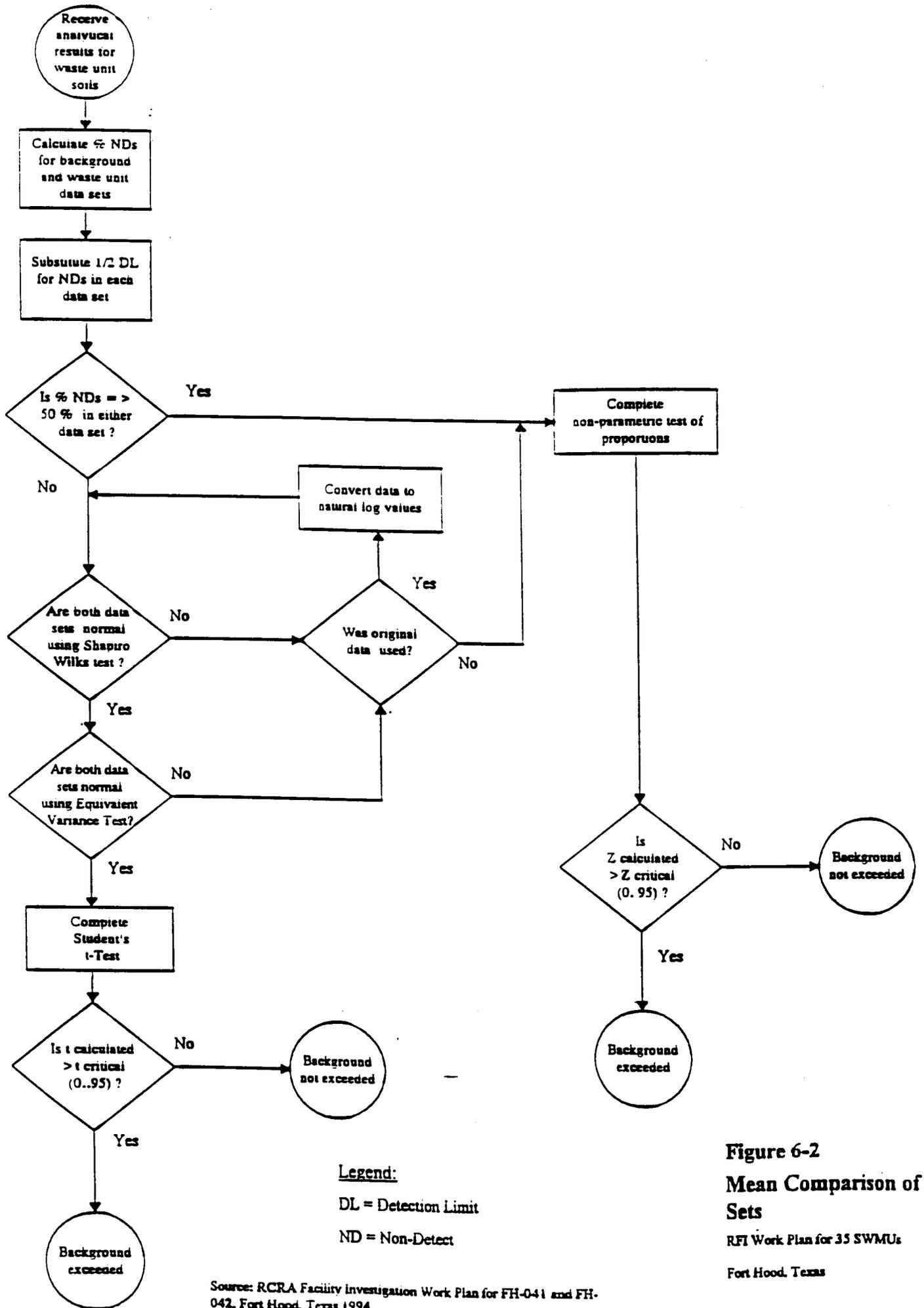


Figure 6-1
 95% Upper Tolerance Limit
 RFI Work Plan for 35 SW
 Fort Hood, Texas



Legend:
 DL = Detection Limit
 ND = Non-Detect

Figure 6-2
Mean Comparison of Sets
 RFI Work Plan for 35 SWMUs
 Fort Hood, Texas

Source: RCRA Facility Investigation Work Plan for FH-041 and FH-042, Fort Hood, Texas 1994.

95% UTLs

Soil Background 95% UTLs NO DUPLICATES						
smp_id	Mercury		Arsenic	Barium		
	Result (x)	Qual	Result (x)	Result	Qual	Ln(x)
BKSB101	0.04	U	3	21.3	J	3.05870707
BKSB102	0.04	U	2	8	J	2.07944154
BKSB103	0.04	U	9.1	14.7	J	2.68784749
BKSB105	0.04	U	4.3	23.4	J	3.15273602
BKSB106	0.04	U	4.4	43.7	J	3.7773481
BKSB107	0.04	U				
BKSB109	0.04	U	3.5	155	J	5.04342512
BKSB110	0.04	U	4.8	24.1	J	3.18221184
BKSB111	0.04	U	5.2	7.2	J	1.97408103
BKSB113	0.04	U	5.7	20.5	J	3.02042489
BKSB114	0.04	U	5.2	25.2	J	3.22684399
BKSB115	0.04	U	5.3	10.6	J	2.360854
BKSB116	0.04	U	11.6	4.9	J	1.58923521
BKSB118	0.04	U	2.6	4.4	J	1.48160454
BKSB119	0.04	U	0.66	3		1.09861229
BKSB120	0.04	U	0.44	2		0.69314718
BKSB122	0.04	U	3.2	6.1		1.80828877
BKSB123	0.04	U	3.8	5.5		1.70474809
BKSB125	0.04	U	3.2	18.1		2.89591194
BKSB126	0.04	U	2.5	5.4		1.68639895
BKSB128	0.04		3.6	36.3		3.59181774
BKSB129	0.04	U	2.6	26.3		3.26956894
BKSB130	0.04	U	1	8.1		2.09186406
BKSB131	0.04	U	5.3	65.9		4.18813844
BKSB132	0.04	U	4.2	41.7		3.73050113
BKSB133	0.04	U	3.2	68.6		4.22829253
BKSB134	0.04	U	2.9	20.1		3.00071982
BKSB136	0.04	U	4.3	14.8	J	2.69462718
BKSB137	0.04	U	8.2	7.8	J	2.05412373
BKSB138	0.04	U	9.2	12.2	J	2.50143595
BKSB139	0.04	U	7.6	7.3	J	1.98787435
BKSB141	0.04	U	5.6	127	J	4.84418709
BKSB142	0.04	U	3.8	63	J	4.14313473
BKSB143	0.04	U	3.8	39.3	J	3.67122452
BKSB144	0.04	U	3.7	36.1	J	3.58629287
BKSB104	0.04	U	6.2	28.2	J	3.33932198
BKSB108	0.04	U	6	72.4	J	4.2822063
BKSB112	0.04	U	1.6	6.6	J	1.88706965
BKSB117	0.04	U	4.4	27.9	J	3.32862669
BKSB121	0.04	U	4.1	24		3.17805383
BKSB124	0.04	U	6	19.3		2.9601051
BKSB127	0.04	U	1.9	18.8		2.93385687
BKSB135	0.04	U	2.7	15.4	J	2.73436751
BKSB140	0.04	U	4.8	108	J	4.68213123
%nondetects=	0.04	0.95744681			0	
Distribution	D		N			L
Mean	0.04		4.35348837	30.1906977		2.91700954
std dev	0		2.29920368	33.4734423		1.01859487
n	44		43	43		43
K	2.097		2.102	2.102		2.102
UTL	0.04		9.1864145	100.55187		5.058096
UTL(ln)=exp(mean + K(std d						157.29074

95% UTLs

Soil Background							
smp_id	Cadmium				Chromium		
	Result (x)	Qual	1/2 nondetects	Ln(x)	Result (x)	Qual	Ln(x)
BKSB101	0.12		0.12	-2.1202635	5.1	J	1.62924054
BKSB102	0.05		0.05	-2.9957323	10.3	J	2.3321439
BKSB103	0.05	U	0.025	-3.6888795	10.1	J	2.31253542
BKSB105	0.11		0.11	-2.2072749	4	J	1.38629436
BKSB106	0.16		0.16	-1.8325815	7.6	J	2.02814825
BKSB107	0.35		0.35	-1.0498221	5.1	J	1.62924054
BKSB109	0.07		0.07	-2.65926	6.5	J	1.87180218
BKSB110	0.06		0.06	-2.8134107	16.6	J	2.8094027
BKSB111	0.05		0.05	-2.9957323	6.2	J	1.82454929
BKSB113	0.07		0.07	-2.65926	8.9	J	2.18605128
BKSB114	0.05	U	0.025	-3.6888795	20.3	J	3.01062089
BKSB115	0.06		0.06	-2.8134107	7.3	J	1.98787435
BKSB116	0.2		0.2	-1.6094379	2.7	J	0.99325177
BKSB118	0.19		0.19	-1.6607312	2.2	J	0.78845736
BKSB119	0.06		0.06	-2.8134107	2.1		0.74193734
BKSB120	0.04	U	0.02	-3.912023	0.93		-0.0725707
BKSB122	0.06		0.06	-2.8134107	4.9		1.58923521
BKSB123	0.08		0.08	-2.5257286	4.3		1.45861502
BKSB125	0.11		0.11	-2.2072749	5.1		1.62924054
BKSB126	0.06		0.06	-2.8134107	5.5		1.70474809
BKSB128	0.05	U	0.025	-3.6888795	8.5		2.14006616
BKSB129	0.04	U	0.02	-3.912023	4.6		1.5260563
BKSB130	0.07		0.07	-2.65926	1.8		0.58778666
BKSB131	0.15		0.15	-1.89712	7.7		2.04122033
BKSB132	0.04	U	0.02	-3.912023	5.9		1.77495235
BKSB133	0.11		0.11	-2.2072749	4.9		1.58923521
BKSB134	0.08		0.08	-2.5257286	1.2		0.18232156
BKSB136	0.2	J	0.2	-1.6094379	8.3		2.11625551
BKSB137	0.18	J	0.18	-1.7147984	8.1		2.09186406
BKSB138	0.21	J	0.21	-1.5606477	11.1		2.40694511
BKSB139	0.2	J	0.2	-1.6094379	8.4		2.12823171
BKSB141	0.45	J	0.45	-0.7985077	23.6		3.16124671
BKSB142	0.29	J	0.29	-1.2378744	8.4		2.12823171
BKSB143	0.27	J	0.27	-1.3093333	12.2		2.50143595
BKSB144	0.2	J	0.2	-1.6094379	6.5		1.87180218
BKSB104	0.15		0.15	-1.89712	3.1	J	1.13140211
BKSB108	0.2		0.2	-1.6094379	12.9	J	2.55722731
BKSB112	0.04	U	0.02	-3.912023	4	J	1.38629436
BKSB117	0.18		0.18	-1.7147984	5.7	J	1.74046617
BKSB121	0.18		0.18	-1.7147984	6.3		1.84054963
BKSB124	0.11		0.11	-2.2072749	7.2		1.97408103
BKSB127	0.04	U	0.02	-3.912023	3.7		1.30833282
BKSB135	0.17	J	0.17	-1.7719568	6.1		1.80828877
BKSB140	0.79	J	0.79	-0.2357223	16.1		2.77881927
%nondetects=		0.19148936				0	
Distribution				L			L
Mean	0.14545455			-2.343338	7.31886364		1.78668026
std dev	0.13475999			0.92656476	4.7817999		0.68062712
n	44			44	44		44
K	2.097			2.097	2.097		2.097
UTL	0.4280462			-0.400332	17.346298		3.2139553
UTL(ln)=exp(me				0.6700977			24.87729

95% UTLs

Soil Background	Lead		Selenium		Silver		
smp_id	Result (x)	Qual	Ln(x)	Result (x)	Qual	Result (x)	Qual
BKSB101	6	J	1.79175947	0.37	U	0.24	U
BKSB102	5	J	1.60943791	0.36	U	0.23	U
BKSB103	9.5	J	2.2512918	0.38	U	0.24	U
BKSB105	3.9	J	1.36097655	0.33	U	0.21	U
BKSB106	5	J	1.60943791	0.33	U	0.21	U
BKSB107	6.1	J	1.80828877	0.36	U	0.23	U
BKSB109	3.2	J	1.16315081	0.34	U	0.22	U
BKSB110	7.8	J	2.05412373	0.36	U	0.23	U
BKSB111	5.3	J	1.66770682	0.35	U	0.22	U
BKSB113	6	J	1.79175947	0.36	U	0.23	U
BKSB114	7.7	J	2.04122033	0.38	U	0.24	U
BKSB115	5.1	J	1.62924054	0.32	U	0.2	U
BKSB116	5.6	J	1.7227666	0.33	U	0.21	U
BKSB118	3.7	J	1.30833282	0.34	U	0.21	U
BKSB119	1.3	J	0.26236426	0.33	U	0.21	U
BKSB120	0.72	J	-0.3285041	0.32	U	0.2	U
BKSB122	4.1	J	1.41098697	0.33	U	0.21	U
BKSB123	3.8	J	1.33500107	0.33	U	0.21	U
BKSB125	1.7	J	0.53062825	0.36		0.2	U
BKSB126	1.5	J	0.40546511	0.44		0.21	U
BKSB128	7.5	J	2.01490302	0.35	U	0.22	U
BKSB129	4.1	J	1.41098697	0.33	U	0.21	U
BKSB130	3.1	J	1.13140211	0.32	U	0.2	U
BKSB131	10.1	J	2.31253542	0.34	U	0.22	U
BKSB132	7.8	J	2.05412373	0.34	U	0.21	U
BKSB133	6.3	J	1.84054963	0.35	U	0.22	U
BKSB134	2.3	J	0.83290912	0.33	U	0.21	U
BKSB136	3	J	1.09861229	0.32	R	0.22	U
BKSB137	2.3	J	0.83290912	0.31	R	0.21	U
BKSB138	4.1	J	1.41098697	0.32	R	0.22	U
BKSB139	3.6	J	1.28093385	0.31	R	0.21	U
BKSB141	12.1	J	2.49320545	1.8	R	0.25	U
BKSB142	5	J	1.60943791	1.9	R	0.25	U
BKSB143	6.6	J	1.88706965	0.35	R	0.24	U
BKSB144	4	J	1.38629436	0.31	R	0.21	U
BKSB104	5.3	J	1.66770682	0.32	U	0.2	U
BKSB108	9.8	J	2.28238239	0.37	U	0.23	U
BKSB112	1.5	J	0.40546511	0.32	U	0.2	U
BKSB117	8.3	J	2.11625551	0.33	U	0.21	U
BKSB121	10.2	J	2.32238772	0.34	U	0.22	U
BKSB124	4.5	J	1.5040774	0.34	U	0.21	U
BKSB127	3.8	J	1.33500107	0.33	U	0.21	U
BKSB135	2.5	J	0.91629073	1.5	R	0.21	U
BKSB140	33.2	J	3.50254988	0.35	R	0.24	U
%nondetects=		0					
Distribution			L	D		D	
Mean	5.77318182		1.52441844	—	0.345	0.21795455	
std dev	4.99838289		0.67810106	0.02427744		0.01390659	
n	44		44				
K	2.097		2.097				
UTL	16.254791		2.9463964				
UTL(ln)=exp(me			19.037227				

Shapiro Wilk for Barium

	Bkgd Conc (xi) (mg/kg)	Ordered Conc. x(i)	Reverse Ordered x(n-i+1)	Difference x(n- i+1)-x(i)	a(n-i+1)	b(i)
BKSB101	21.3	2	155	153	0.3894	59.5782
BKSB102	8	3	127	124	0.2684	33.2816
BKSB103	14.7	4.4	108	103.6	0.2334	24.18024
BKSB105	23.4	4.9	72.4	67.5	0.2078	14.0265
BKSB106	43.7	5.4	68.6	63.2	0.1871	11.82472
BKSB107		5.5	65.9	60.4	0.1695	10.2378
BKSB109	155	6.1	63	56.9	0.1539	8.75691
BKSB110	24.1	6.6	43.7	37.1	0.1398	5.18658
BKSB111	7.2	7.2	41.7	34.5	0.1269	4.37805
BKSB113	20.5	7.3	39.3	32	0.1149	3.6768
BKSB114	25.2	7.8	36.3	28.5	0.1035	2.94975
BKSB115	10.6	8	36.1	28.1	0.0927	2.60487
BKSB116	4.9	8.1	28.2	20.1	0.0824	1.65624
BKSB118	4.4	10.6	27.9	17.3	0.0724	1.25252
BKSB119	3	12.2	26.3	14.1	0.0628	0.88548
BKSB120	2	14.7	25.2	10.5	0.0534	0.5607
BKSB122	6.1	14.8	24.1	9.3	0.0442	0.41106
BKSB123	5.5	15.4	24	8.6	0.0352	0.30272
BKSB125	18.1	18.1	23.4	5.3	0.0263	0.13939
BKSB126	5.4	18.8	21.3	2.5	0.0175	0.04375
BKSB128	36.3	19.3	20.5	1.2	0.0087	0.01044
BKSB129	26.3	20.1	20.1	0	0	0
BKSB130	8.1	20.5	19.3	-1.2		0
BKSB131	65.9	21.3	18.8	-2.5		0
BKSB132	41.7	23.4	18.1	-5.3		
BKSB133	68.6	24	15.4	-8.6	sum Bi=	185.94432
BKSB134	20.1	24.1	14.8	-9.3		
BKSB136	14.8	25.2	14.7	-10.5	W(0.05,43)	0.943
BKSB137	7.8	26.3	12.2	-14.1	W=	0.73470973
BKSB138	12.2	27.9	10.6	-17.3		
BKSB139	7.3	28.2	8.1	-20.1		
BKSB141	127	36.1	8	-28.1		
BKSB142	63	36.3	7.8	-28.5		
BKSB143	39.3	39.3	7.3	-32		
BKSB144	36.1	41.7	7.2	-34.5		
BKSB104	28.2	43.7	6.6	-37.1		
BKSB108	72.4	63	6.1	-56.9		
BKSB112	6.6	65.9	5.5	-60.4		
BKSB117	27.9	68.6	5.4	-63.2		
BKSB121	24	72.4	4.9	-67.5		
BKSB124	19.3	108	4.4	-103.6		
BKSB127	18.8	127	3	-124		
BKSB135	15.4	155	2	-153		
BKSB140	108			0		
Sum of xi	1298.2					
Mean	30.19069767					
n=	43					
sum of xi^2	86253.36					
1/n=	0.023255814					
xi=(sum xi)^2	1685323.24					
d=	47059.79628					
W=	0.734709728					
W(0.05,43)=	0.943					
W<W(0.5,43), distribution is not Normal						

Shapiro Wilk for Barium

	ln of ordered Conc. x(i)		ln of Reverse Order x(n-i+1)	Difference x(n-i+1)-x(i)	a(n-i+1)	b(i)
	0.693147181	0.48045301	5.043425117	4.35027794	0.3894	1.693998228
	1.098612289	1.20694896	4.844187086	3.7455748	0.2684	1.005312276
	1.481604541	2.19515202	4.682131227	3.20052669	0.2334	0.747002929
	1.589235205	2.52566854	4.282206299	2.69297109	0.2078	0.559599393
	1.686398954	2.84394143	4.228292535	2.54189358	0.1871	0.475588289
	1.704748092	2.90616606	4.188138442	2.48339035	0.1695	0.420934664
	1.808288771	3.26990828	4.143134726	2.33484596	0.1539	0.359332793
	1.887069649	3.56103186	3.777348102	1.89027845	0.1398	0.264260928
	1.974081026	3.8969959	3.730501129	1.7564201	0.1269	0.222889711
	1.987874348	3.95164442	3.671224519	1.68335017	0.1149	0.193416935
	2.054123734	4.21942431	3.591817741	1.53769401	0.1035	0.15915133
	2.079441542	4.32407713	3.586292865	1.50685132	0.0927	0.139685118
	2.091864062	4.37589525	3.339321978	1.24745792	0.0824	0.102790532
	2.360854001	5.57363161	3.328626689	0.96777269	0.0724	0.070066743
	2.501435952	6.25718182	3.269568939	0.76813299	0.0628	0.048238752
	2.687847494	7.22452415	3.226843995	0.5389965	0.0534	0.028782413
	2.694627181	7.26101564	3.18221184	0.48758466	0.0442	0.021551242
	2.734367509	7.47676568	3.17805383	0.44368632	0.0352	0.015617758
	2.895911938	8.38630595	3.152736022	0.25682408	0.0263	0.006754473
	2.93385687	8.60751613	3.058707073	0.1248502	0.0175	0.002184879
	2.960105096	8.76222218	3.020424886	0.06031979	0.0087	0.000524782
	3.000719815	9.00431941	3.000719815	0		0
	3.020424886	9.12296649	2.960105096	-0.0603198		0
	3.058707073	9.35568896	2.93385687	-0.1248502		0
	3.152736022	9.93974443	2.895911938	-0.2568241		
	3.17805383	10.1000261	2.734367509	-0.4436863		6.537684167
	3.18221184	10.1264722	2.694627181	-0.4875847		
	3.226843995	10.4125222	2.687847494	-0.5389965	W(0.05,43)	0.943
	3.269568939	10.690081	2.501435952	-0.768133	W(ln)=	0.98083423
	3.328626689	11.0797556	2.360854001	-0.9677727		
	3.339321978	11.1510713	2.091864062	-1.2474579		
	3.586292865	12.8614965	2.079441542	-1.5068513		
	3.591817741	12.9011547	2.054123734	-1.537694		
	3.671224519	13.4778895	1.987874348	-1.6833502		
	3.730501129	13.9166387	1.974081026	-1.7564201		
	3.777348102	14.2683587	1.887069649	-1.8902785		
	4.143134726	17.1655654	1.808288771	-2.334846		
	4.188138442	17.5405036	1.704748092	-2.4833903		
	4.228292535	17.8784578	1.686398954	-2.5418936		
	4.282206299	18.3372908	1.589235205	-2.6929711		
	4.682131227	21.9223528	1.481604541	-3.2005267		
	4.844187086	23.4661485	1.098612289	-3.7455748		
	5.043425117	25.4361369	0.693147181	-4.3502779		
Sum of xi	125.4314103		125.4314103			
Mean	2.917009542					
n=	43					
sum of xi^2	409.4611119					
1/n=	0.023255814					
xi=(sum xi)^	15733.03869					
d=	43.57649126					
W(ln)=	0.98083423					
W(0.05,43)	0.943					
W>W(0.5,43), distribution is lognormal						

Shapiro Wilk for Cadmium

smp_id	Cadmium	(xi) ²	Ordered Conc. x(i)	Reverse Ordered x(n-i+1)	Difference x(n-i+1)-x(i)	a(n-i+1)	b(i)	smp_id
BKSB101	0.12	0.0144	0.02	0.79	0.77	0.3872	0.298144	BKSB101
BKSB102	0.05	0.0025	0.02	0.45	0.43	0.2667	0.114681	BKSB102
BKSB103	0.025	0.00063	0.02	0.35	0.33	0.2323	0.076659	BKSB103
BKSB104	0.15	0.0225	0.02	0.29	0.27	0.2072	0.055944	BKSB104
BKSB105	0.11	0.0121	0.02	0.27	0.25	0.1868	0.0467	BKSB105
BKSB106	0.16	0.0256	0.025	0.21	0.185	0.1695	0.031358	BKSB106
BKSB107	0.35	0.1225	0.025	0.2	0.175	0.1542	0.026985	BKSB107
BKSB108	0.2	0.04	0.025	0.2	0.175	0.1405	0.024588	BKSB108
BKSB109	0.07	0.0049	0.05	0.2	0.15	0.1278	0.01917	BKSB109
BKSB110	0.06	0.0036	0.05	0.2	0.15	0.116	0.0174	BKSB110
BKSB111	0.05	0.0025	0.06	0.2	0.14	0.1049	0.014686	BKSB111
BKSB112	0.02	0.0004	0.06	0.19	0.13	0.0943	0.012259	BKSB112
BKSB113	0.07	0.0049	0.06	0.18	0.12	0.0842	0.010104	BKSB113
BKSB114	0.025	0.00063	0.06	0.18	0.12	0.0745	0.00894	BKSB114
BKSB115	0.06	0.0036	0.06	0.18	0.12	0.0651	0.007812	BKSB115
BKSB116	0.2	0.04	0.07	0.17	0.1	0.056	0.0056	BKSB116
BKSB117	0.18	0.0324	0.07	0.16	0.09	0.0471	0.004239	BKSB117
BKSB118	0.19	0.0361	0.07	0.15	0.08	0.0383	0.003064	BKSB118
BKSB119	0.06	0.0036	0.08	0.15	0.07	0.0296	0.002072	BKSB119
BKSB120	0.02	0.0004	0.08	0.12	0.04	0.0211	0.000844	BKSB120
BKSB121	0.18	0.0324	0.11	0.11	0	0.0126	0	BKSB121
BKSB122	0.06	0.0036	0.11	0.11	0	0.0042	0	BKSB122
BKSB123	0.08	0.0064	0.11	0.11	0	0	0	BKSB123
BKSB124	0.11	0.0121	0.11	0.11	0	0	0	BKSB124
BKSB125	0.11	0.0121	0.12	0.08	-0.04			BKSB125
BKSB126	0.06	0.0036	0.15	0.08	-0.07	Sum of b=	0.781248	BKSB126
BKSB127	0.02	0.0004	0.15	0.07	-0.08			BKSB127
BKSB128	0.025	0.00063	0.16	0.07	-0.09	W=	0.744801	BKSB128
BKSB129	0.02	0.0004	0.17	0.07	-0.1	W(0.05,44)	0.944	BKSB129
BKSB130	0.07	0.0049	0.18	0.06	-0.12			BKSB130
BKSB131	0.15	0.0225	0.18	0.06	-0.12			BKSB131
BKSB132	0.02	0.0004	0.18	0.06	-0.12			BKSB132
BKSB133	0.11	0.0121	0.19	0.06	-0.13			BKSB133
BKSB134	0.08	0.0064	0.2	0.06	-0.14			BKSB134
BKSB135	0.17	0.0289	0.2	0.05	-0.15			BKSB135
BKSB136	0.2	0.04	0.2	0.05	-0.15			BKSB136
BKSB137	0.18	0.00063	0.2	0.025	-0.175			BKSB137
BKSB138	0.21	0.0225	0.2	0.025	-0.175			BKSB138
BKSB139	0.2	0.0121	0.21	0.025	-0.185			BKSB139
BKSB140	0.79	0.0256	0.27	0.02	-0.25			BKSB140
BKSB141	0.45	0.1225	0.29	0.02	-0.27			BKSB141
BKSB142	0.29	0.04	0.35	0.02	-0.33			BKSB142
BKSB143	0.27	0.0049	0.45	0.02	-0.43			BKSB143
BKSB144	0.2	0.0036	0.79	0.02	-0.77			BKSB144
Sum of xi	6.225							Sum of xi
Mean	0.14147727							Mean
n=	44							n=
sum of xi ²	1.700175							sum of xi ²
1/n=	0.02272727							1/n=
xi=(sum xi) ²	38.750625							xi=(sum xi) ²
d=	0.81947898							d=
W=	0.7448006							W=
W(0.05,44)=	0.944							W(0.05,44)=
W<W(0.5,44), the distribution is not normal								W<W(0.5,44),

Shapiro Wilk for Cadmium

ln of ordered Conc. x(i)	ln(xi)^2	ln of Reverse Order x(n-i+1)	Difference x(n-i+1)-x(i)	a(n-i+1)	b(i)
-3.912023005	15.303924	-0.2357223	3.67630067	0.3872	1.42346362
-3.912023005	15.303924	-0.7985077	3.11351531	0.2667	0.83037453
-3.912023005	15.303924	-1.0498221	2.86220088	0.2323	0.66488926
-3.912023005	15.303924	-1.2378744	2.67414865	0.2072	0.5540836
-3.912023005	15.303924	-1.3093333	2.60268969	0.1868	0.48618243
-3.688879454	13.607832	-1.5606477	2.12823171	0.1695	0.36073527
-3.688879454	13.607832	-1.6094379	2.07944154	0.1542	0.32064989
-3.688879454	13.607832	-1.6094379	2.07944154	0.1405	0.29216154
-2.995732274	8.9744119	-1.6094379	1.38629436	0.1278	0.17716842
-2.995732274	8.9744119	-1.6094379	1.38629436	0.116	0.16081015
-2.813410717	7.9152799	-1.6094379	1.2039728	0.1049	0.12629675
-2.813410717	7.9152799	-1.6607312	1.15267951	0.0943	0.10869768
-2.813410717	7.9152799	-1.7147984	1.09861229	0.0842	0.09250315
-2.813410717	7.9152799	-1.7147984	1.09861229	0.0745	0.08184662
-2.813410717	7.9152799	-1.7147984	1.09861229	0.0651	0.07151966
-2.659260037	7.0716639	-1.7719568	0.8873032	0.056	0.04968898
-2.659260037	7.0716639	-1.8325815	0.82667857	0.0471	0.03893656
-2.659260037	7.0716639	-1.89712	0.76214005	0.0383	0.02918996
-2.525728644	6.3793052	-1.89712	0.62860866	0.0296	0.01860682
-2.525728644	6.3793052	-2.1202635	0.40546511	0.0211	0.00855531
-2.207274913	4.8720625	-2.2072749	0	0.0126	0
-2.207274913	4.8720625	-2.2072749	0	0.0042	0
-2.207274913	4.8720625	-2.2072749	0	0	0
-2.207274913	4.8720625	-2.2072749	0	0	0
-2.120263536	4.4955175	-2.5257286	-0.40546511		
-1.897119985	3.5990642	-2.5257286	-0.62860866	Sum of b=	5.8963602
-1.897119985	3.5990642	-2.65926	-0.76214005		
-1.832581464	3.3583548	-2.65926	-0.82667857	W=	0.94177684
-1.771956842	3.139831	-2.65926	-0.8873032	W(0.05,44)	0.944
-1.714798428	2.9405336	-2.8134107	-1.09861229		
-1.714798428	2.9405336	-2.8134107	-1.09861229		
-1.660731207	2.7580281	-2.8134107	-1.15267951		
-1.609437912	2.5902904	-2.8134107	-1.2039728		
-1.609437912	2.5902904	-2.9957323	-1.38629436		
-1.609437912	2.5902904	-2.9957323	-1.38629436		
-1.609437912	2.5902904	-3.6888795	-2.07944154		
-1.609437912	2.5902904	-3.6888795	-2.07944154		
-1.560647748	2.4356214	-3.6888795	-2.12823171		
-1.30933332	1.7143537	-3.912023	-2.60268969		
-1.237874356	1.5323329	-3.912023	-2.67414865		
-1.049822124	1.1021265	-3.912023	-2.86220088		
-0.798507696	0.6376145	-3.912023	-3.11351531		
-0.235722334	0.055565	-3.912023	-3.67630067		
-103.106874					
-2.343338046					
44					
278.5307172					
0.022727273					
10631.02747					
36.91645655					
0.941776836					
0.944					
The distribution is approximately lognormal					

Shapiro Wilk Chromium

smp_id	Chromium	Ordered Conc. x(i)	Reverse Ordered x(n-i+1)	Difference x(n-i+1)-x(i)	a(n-i+1)	b(i)
BKSB101	5.1	0.93	23.6	22.67	0.3872	8.777824
BKSB102	10.3	1.2	20.3	19.1	0.2667	5.09397
BKSB103	10.1	1.8	16.6	14.8	0.2323	3.43804
BKSB104	3.1	2.1	16.1	14	0.2072	2.9008
BKSB105	4	2.2	12.9	10.7	0.1868	1.99876
BKSB106	7.6	2.7	12.2	9.5	0.1695	1.61025
BKSB107	5.1	3.1	11.1	8	0.1542	1.2336
BKSB108	12.9	3.7	10.3	6.6	0.1405	0.9273
BKSB109	6.5	4	10.1	6.1	0.1278	0.77958
BKSB110	16.6	4	8.9	4.9	0.116	0.5684
BKSB111	6.2	4.3	8.5	4.2	0.1049	0.44058
BKSB112	4	4.6	8.4	3.8	0.0943	0.35834
BKSB113	8.9	4.9	8.4	3.5	0.0842	0.2947
BKSB114	20.3	4.9	8.30	3.4	0.0745	0.2533
BKSB115	7.3	5.1	8.1	3	0.0651	0.1953
BKSB116	2.7	5.1	7.7	2.6	0.056	0.1456
BKSB117	5.7	5.1	7.6	2.5	0.0471	0.11775
BKSB118	2.2	5.5	7.3	1.8	0.0383	0.06894
BKSB119	2.1	5.7	7.2	1.5	0.0296	0.0444
BKSB120	0.93	5.9	6.5	0.6	0.0211	0.01266
BKSB121	6.3	6.1	6.5	0.4	0.0126	0.00504
BKSB122	4.9	6.2	6.3	0.1	0.0042	0.00042
BKSB123	4.3	6.3	6.2	-0.1	0	0
BKSB124	7.2	6.5	6.1	-0.4	0.0037	-0.00148
BKSB125	5.1	6.5	5.9	-0.6	Sum of b=	29.264074
BKSB126	5.5	7.2	5.7	-1.5		
BKSB127	3.7	7.3	5.5	-1.8	W=	0.87100033
BKSB128	8.5	7.6	5.1	-2.5	W(0.05,45)	0.945
BKSB129	4.6	7.7	5.1	-2.6		
BKSB130	1.8	8.1	5.1	-3		
BKSB131	7.7	8.30	4.9	-3.4		
BKSB132	5.9	8.4	4.9	-3.5		
BKSB133	4.9	8.4	4.6	-3.8		
BKSB134	1.2	8.5	4.3	-4.2		
BKSB135	6.1	8.9	4	-4.9		
BKSB136	8.30	10.1	4	-6.1		
BKSB137	8.1	10.3	3.7	-6.6		
BKSB138	11.1	11.1	3.1	-8		
BKSB139	8.4	12.2	2.7	-9.5		
BKSB140	16.1	12.9	2.2	-10.7		
BKSB141	23.6	16.1	2.1	-14		
BKSB142	8.4	16.6	1.8	-14.8		
BKSB143	12.2	20.3	1.2	-19.1		
BKSB144	6.5	23.6	0.93	-22.67		
Sum of x _i	322.03					
Mean	7.31886364					
n=	44					
sum of x _i ²	3340.1149					
1/n=	0.02272727					
x _i -(sum xi) ²	103703.321					
d=	983.221243					
W=	0.87100033					
W(0.05,44)=	0.944					
W<W(0.5,45), the distribution is not normal						

Shapiro Wilk Chromium

smpl_id	ln of ordered Conc. x(i)	ln(xi)^2	ln of Reverse Order x(n-i+1)	Difference x(n-i+1)-x(i)	a(n-i+1)	b(i)
BKSB101	-0.07257069	0.00526651	3.161246712	3.2338174	0.3872	1.2521341
BKSB102	0.182321557	0.03324115	3.010620886	2.82829933	0.2667	0.75430743
BKSB103	0.587786665	0.34549316	2.809402695	2.22161603	0.2323	0.5160814
BKSB104	0.741937345	0.55047102	2.778819272	2.03688193	0.2072	0.42204194
BKSB105	0.78845736	0.62166501	2.557227311	1.76876995	0.1868	0.33040623
BKSB106	0.993251773	0.98654908	2.501435952	1.50818418	0.1695	0.25563722
BKSB107	1.131402111	1.28007074	2.406945108	1.275543	0.1542	0.19668873
BKSB108	1.30833282	1.71173477	2.332143895	1.02381108	0.1405	0.14384546
BKSB109	1.386294361	1.92181206	2.312535424	0.92624106	0.1278	0.11837361
BKSB110	1.386294361	1.92181206	2.186051277	0.79975692	0.116	0.0927718
BKSB111	1.458615023	2.12755778	2.140066163	0.68145114	0.1049	0.07148422
BKSB112	1.526056303	2.32884784	2.128231706	0.6021754	0.0943	0.05678514
BKSB113	1.589235205	2.52566854	2.128231706	0.5389965	0.0842	0.04538351
BKSB114	1.589235205	2.52566854	2.116255515	0.52702031	0.0745	0.03926301
BKSB115	1.62924054	2.65442474	2.091864062	0.46262352	0.0651	0.03011679
BKSB116	1.62924054	2.65442474	2.041220329	0.41197979	0.056	0.02307087
BKSB117	1.62924054	2.65442474	2.028148247	0.39890771	0.0471	0.01878855
BKSB118	1.704748092	2.90616606	1.987874348	0.28312626	0.0383	0.01084374
BKSB119	1.740466175	3.02922251	1.974081026	0.23361485	0.0296	0.006915
BKSB120	1.774952351	3.15045585	1.871802177	0.09684983	0.0211	0.00204353
BKSB121	1.808288771	3.26990828	1.871802177	0.06351341	0.0126	0.00080027
BKSB122	1.824549292	3.32898012	1.840549633	0.01600034	0.0042	6.7201E-05
BKSB123	1.840549633	3.38762295	1.824549292	-0.0160003	0	0
BKSB124	1.871802177	3.50364339	1.808288771	-0.0635134		0
BKSB125	1.871802177	3.50364339	1.774952351	-0.0968498	Sum of b=	4.38784974
BKSB126	1.974081026	3.8969959	1.740466175	-0.2336149		
BKSB127	1.987874348	3.95164442	1.704748092	-0.2831263	W=	0.96653268
BKSB128	2.028148247	4.11338531	1.62924054	-0.3989077	W(0.05,45)	0.945
BKSB129	2.041220329	4.16658043	1.62924054	-0.4119798		
BKSB130	2.091864062	4.37589525	1.62924054	-0.4626235		
BKSB131	2.116255515	4.4785374	1.589235205	-0.5270203		
BKSB132	2.128231706	4.52937019	1.589235205	-0.5389965		
BKSB133	2.128231706	4.52937019	1.526056303	-0.6021754		
BKSB134	2.140066163	4.57988318	1.458615023	-0.6814511		
BKSB135	2.186051277	4.77882018	1.386294361	-0.7997569		
BKSB136	2.312535424	5.34782009	1.386294361	-0.9262411		
BKSB137	2.332143895	5.79338475	1.30833282	-1.0238111		
BKSB138	2.406945108	6.25718182	1.131402111	-1.275543		
BKSB139	2.501435952	6.53941152	0.993251773	-1.5081842		
BKSB140	2.557227311	7.72183655	0.78845736	-1.76877		
BKSB141	2.778819272	7.8927435	0.741937345	-2.0368819		
BKSB142	2.809402695	9.06383812	0.587786665	-2.221616		
BKSB143	3.010620886	9.99348077	0.182321557	-2.8282993		
BKSB144	3.161246712	#REF!	-0.072570693	-3.2338174		
Sum of x _i	78.61393132					
Mean	1.786680257					
n=	44					
sum of x _i ²	160.3778498					
1/n=	0.022727273					
x _i =(sum xi) [^]	6180.150197					
d=	19.91989073					
W=	0.96653268					
W(0.05,44)	0.944					
W>W(0.5,44), the distribution is lognormal						

Shapiro Wilk for Lead

smpl_id	Lead	Ordered Conc. x(i)	Reverse Ordered x(n-i+1)	Difference x(n-i+1)-x(i)	a(n-i+1)	b(i)
BKSB101	6	0.72	33.2	32.48	0.3872	12.57626
BKSB102	5	1.3	12.1	10.8	0.2667	2.88036
BKSB103	9.5	1.5	10.2	8.7	0.2323	2.02101
BKSB104	5.3	1.5	10.1	8.6	0.2072	1.78192
BKSB105	3.9	1.7	9.8	8.1	0.1868	1.51308
BKSB106	5	2.3	9.5	7.2	0.1695	1.2204
BKSB107	6.1	2.3	8.3	6	0.1542	0.9252
BKSB108	9.8	2.5	7.8	5.3	0.1405	0.74465
BKSB109	3.2	3.00	7.8	4.8	0.1278	0.61344
BKSB110	7.8	3.1	7.7	4.6	0.116	0.5336
BKSB111	5.3	3.2	7.5	4.3	0.1049	0.45107
BKSB112	1.5	3.6	6.6	3	0.0943	0.2829
BKSB113	6	3.7	6.3	2.6	0.0842	0.21892
BKSB114	7.7	3.8	6.1	2.3	0.0745	0.17135
BKSB115	5.1	3.8	6	2.2	0.0651	0.14322
BKSB116	5.6	3.9	6	2.1	0.056	0.1176
BKSB117	8.3	4	5.6	1.6	0.0471	0.07536
BKSB118	3.7	4.1	5.3	1.2	0.0383	0.04596
BKSB119	1.3	4.1	5.3	1.2	0.0296	0.03552
BKSB120	0.72	4.1	5.1	1	0.0211	0.0211
BKSB121	10.2	4.5	5	0.5	0.0126	0.0063
BKSB122	4.1	5	5	0	0.0042	0
BKSB123	3.8	5	5	0	0	0
BKSB124	4.5	5	4.5	-0.5		0
BKSB125	1.7	5.1	4.1	-1		
BKSB126	1.5	5.3	4.1	-1.2	Sum of b=	26.37922
BKSB127	3.8	5.3	4.1	-1.2		
BKSB128	7.5	5.6	4	-1.6	W=	0.647733
BKSB129	4.1	6	3.9	-2.1	W(0.05,45)	0.945
BKSB130	3.1	6	3.8	-2.2		
BKSB131	10.1	6.1	3.8	-2.3		
BKSB132	7.8	6.3	3.7	-2.6		
BKSB133	6.3	6.6	3.6	-3		
BKSB134	2.3	7.5	3.2	-4.3		
BKSB135	2.5	7.7	3.1	-4.6		
BKSB136	3.00	7.8	3.00	-4.8		
BKSB137	2.3	7.8	2.5	-5.3		
BKSB138	4.1	8.3	2.3	-6		
BKSB139	3.6	9.5	2.3	-7.2		
BKSB140	33.2	9.8	1.7	-8.1		
BKSB141	12.1	10.1	1.5	-8.6		
BKSB142	5	10.2	1.5	-8.7		
BKSB143	6.6	12.1	1.3	-10.8		
BKSB144	4	33.2	0.72	-32.48		
Sum of xi	254.02					
Mean	5.773182					
n=	44					
sum of xi^2	2540.808					
1/n=	0.022727					
xi=(sum xi)^2	64526.16					
d=	1074.305					
W=	0.647733					
W(0.05,44)=	0.944					
W<W(0.5,44), the distribution is not normal						

Shapiro Wilk for Lead

smpl_id	ln of ordered Conc. x(i)	ln(xi)^2	ln of Reverse Order x(n-i+1)	Difference x(n-i+1)-x(i)	a(n-i+1)	b(i)
BKSB101	-0.328504067	0.107914922	3.502549876	3.83105394	0.3872	1.48338409
BKSB102	0.262364264	0.068835007	2.493205453	2.23084119	0.2667	0.59496534
BKSB103	0.405465108	0.164401954	2.32238772	1.91692261	0.2323	0.44530112
BKSB104	0.405465108	0.164401954	2.312535424	1.90707032	0.2072	0.39514497
BKSB105	0.530628251	0.281566341	2.282382386	1.75175413	0.1868	0.32722767
BKSB106	0.832909123	0.693737607	2.251291799	1.41838268	0.1695	0.24041586
BKSB107	0.832909123	0.693737607	2.116255515	1.28334639	0.1542	0.19789201
BKSB108	0.916290732	0.839588705	2.054123734	1.137833	0.1405	0.15986554
BKSB109	1.098612289	1.206948961	2.054123734	0.95551145	0.1278	0.12211436
BKSB110	1.131402111	1.280070738	2.041220329	0.90981822	0.116	0.10553891
BKSB111	1.16315081	1.352919806	2.014903021	0.85175221	0.1049	0.08934881
BKSB112	1.280933845	1.640791516	1.887069649	0.6061358	0.0943	0.05715861
BKSB113	1.30833282	1.711734767	1.840549633	0.53221681	0.0842	0.04481266
BKSB114	1.335001067	1.782227848	1.808288771	0.4732877	0.0745	0.03525993
BKSB115	1.335001067	1.782227848	1.791759469	0.4567584	0.0651	0.02973497
BKSB116	1.360976553	1.852257178	1.791759469	0.43078292	0.056	0.02412384
BKSB117	1.386294361	1.921812056	1.722766598	0.33647224	0.0471	0.01584784
BKSB118	1.410986974	1.99088424	1.667706821	0.25671985	0.0383	0.00983237
BKSB119	1.410986974	1.99088424	1.667706821	0.25671985	0.0296	0.00759891
BKSB120	1.410986974	1.99088424	1.62924054	0.21825357	0.0211	0.00460515
BKSB121	1.504077397	2.262248815	1.609437912	0.10536052	0.0126	0.00132754
BKSB122	1.609437912	2.590290394	1.609437912	0	0.0042	0
BKSB123	1.609437912	2.590290394	1.609437912	0		0
BKSB124	1.609437912	2.590290394	1.504077397	-0.10536052		0
BKSB125	1.62924054	2.654424736	1.410986974	-0.21825357		
BKSB126	1.667706821	2.781246039	1.410986974	-0.25671985	Sum of b=	4.39150052
BKSB127	1.667706821	2.781246039	1.410986974	-0.25671985		
BKSB128	1.722766598	2.96792475	1.386294361	-0.33647224	W(ln)=	0.97536815
BKSB129	1.791759469	3.210401996	1.360976553	-0.43078292		
BKSB130	1.791759469	3.210401996	1.335001067	-0.4567584	W(0.05,44)	0.944
BKSB131	1.808288771	3.26990828	1.335001067	-0.4732877		
BKSB132	1.840549633	3.387622953	1.30833282	-0.53221681		
BKSB133	1.887069649	3.56103186	1.280933845	-0.6061358		
BKSB134	2.014903021	4.059834182	1.16315081	-0.85175221		
BKSB135	2.041220329	4.166580431	1.131402111	-0.90981822		
BKSB136	2.054123734	4.219424313	1.098612289	-0.95551145		
BKSB137	2.054123734	4.219424313	0.916290732	-1.137833		
BKSB138	2.116255515	4.478537404	0.832909123	-1.28334639		
BKSB139	2.251291799	5.068314762	0.832909123	-1.41838268		
BKSB140	2.282382386	5.209269354	0.530628251	-1.75175413		
BKSB141	2.312535424	5.347820087	0.405465108	-1.90707032		
BKSB142	2.32238772	5.393484723	0.405465108	-1.91692261		
BKSB143	2.493205453	6.216073429	0.262364264	-2.23084119		
BKSB144	3.502549876	12.26785563	-0.328504067	-3.83105394		
Sum of xi	67.07441138					
Mean	1.52441844					
n=	44					
sum of xi^2	122.0217748					
1/n=	0.022727273					
xi=(sum xi)^2	4498.976662					
d=	19.77230523					
W(ln)=	0.975368151					
W(0.05,44)=	0.944					
W>W(0.5,44), the distribution is lognormal						

Shapiro Wilk for Arsenic

smp_id	Arsenic				a(n-i+1)	b(i)
BKSB101	3	0.44	11.6	11.16	0.3894	4.345704
BKSB102	2	0.66	9.2	8.54	0.2684	2.292136
BKSB103	9.1	1	9.1	8.1	0.2334	1.89054
BKSB104	6.2	1.6	8.2	6.6	0.2078	1.37148
BKSB105	4.3	1.9	7.6	5.7	0.1871	1.06647
BKSB106	4.4	2	6.2	4.2	0.1695	0.7119
BKSB108	6	2.5	6	3.5	0.1539	0.53865
BKSB109	3.5	2.6	6	3.4	0.1398	0.47532
BKSB110	4.8	2.6	5.7	3.1	0.1269	0.39339
BKSB111	5.2	2.7	5.6	2.9	0.1149	0.33321
BKSB112	1.6	2.9	5.3	2.4	0.1035	0.2484
BKSB113	5.7	3	5.3	2.3	0.0927	0.21321
BKSB114	5.2	3.2	5.2	2	0.0824	0.1648
BKSB115	5.3	3.2	5.2	2	0.0724	0.1448
BKSB116	11.6	3.2	4.8	1.6	0.0628	0.10048
BKSB117	4.4	3.5	4.8	1.3	0.0534	0.06942
BKSB118	2.6	3.6	4.4	0.8	0.0442	0.03536
BKSB119	0.66	3.7	4.4	0.7	0.0352	0.02464
BKSB120	0.44	3.8	4.3	0.5	0.0263	0.01315
BKSB121	4.1	3.8	4.30	0.5	0.0175	0.00875
BKSB122	3.2	3.8	4.2	0.4	0.0087	0.00348
BKSB123	3.8	4.1	4.1	0	0	0
BKSB124	6	4.2	3.8	-0.4		
BKSB125	3.2	4.3	3.8	-0.5		
BKSB126	2.5	4.30	3.8	-0.5	sum Bi=	14.44529
BKSB127	1.9	4.4	3.7	-0.7		
BKSB128	3.6	4.4	3.6	-0.8	W(0.05,43)	0.943
BKSB129	2.6	4.8	3.5	-1.3	W=	0.939827935
BKSB130	1	4.8	3.2	-1.6		
BKSB131	5.3	5.2	3.2	-2		
BKSB132	4.2	5.2	3.2	-2		
BKSB133	3.2	5.3	3	-2.3		
BKSB134	2.9	5.3	2.9	-2.4		
BKSB135	2.7	5.6	2.7	-2.9		
BKSB136	4.30	5.7	2.6	-3.1		
BKSB137	8.2	6	2.6	-3.4		
BKSB138	9.2	6	2.5	-3.5		
BKSB139	7.6	6.2	2	-4.2		
BKSB140	4.8	7.6	1.9	-5.7		
BKSB141	5.6	8.2	1.6	-6.6		
BKSB142	3.8	9.1	1	-8.1		
BKSB143	3.8	9.2	0.66	-8.54		
BKSB144	3.7	11.6	0.44	-11.16		
Sum of xi	187.2					
Mean	4.3534884					
n=	43					
sum of xi^2	1036.9992					
1/n=	0.0232558					
xi=(sum xi)^2	35043.84					
d=	222.02618					
W=	0.9398279					
W(0.05,43)=	0.943					
W<W(0.5,43), the distribution is approximately normal						

Shapiro Wilk for Arsenic

	ln of ordered Conc. x(i)		ln of Reverse Order x(n-i+1)	Difference x(n-i+1)-x(i)	a(n-i+1)	b(i)
	-0.820980552	0.674009067	2.451005098	3.27198565	0.3894	1.27411121
	-0.415515444	0.172653084	2.219203484	2.63471893	0.2684	0.70715856
	0	0	2.208274414	2.20827441	0.2334	0.51541125
	0.470003629	0.220903412	2.104134154	1.63413053	0.2078	0.33957232
	0.641853886	0.411976411	2.028148247	1.38629436	0.1871	0.25937567
	0.693147181	0.480453014	1.824549292	1.13140211	0.1695	0.19177266
	0.916290732	0.839588705	1.791759469	0.87546874	0.1539	0.13473464
	0.955511445	0.913002122	1.791759469	0.83624802	0.1398	0.11690747
	0.955511445	0.913002122	1.740466175	0.78495473	0.1269	0.09961076
	0.993251773	0.986549085	1.722766598	0.72951482	0.1149	0.08382125
	1.064710737	1.133608953	1.667706821	0.60299608	0.1035	0.06241009
	1.098612289	1.206948961	1.667706821	0.56909453	0.0927	0.05275506
	1.16315081	1.352919806	1.648658626	0.48550782	0.0824	0.04000584
	1.16315081	2.781246039	1.648658626	0.48550782	0.0724	0.03515077
	1.16315081	6.007425991	1.568615918	0.40546511	0.0628	0.02546321
	1.252762968	2.195152016	1.568615918	0.31585295	0.0534	0.01686655
	1.280933845	0.913002122	1.481604541	0.2006707	0.0442	0.00886964
	1.30833282	0.172653084	1.481604541	0.17327172	0.0352	0.00609916
	1.335001067	0.674009067	1.458615023	0.12361396	0.0263	0.00325105
	1.335001067	1.99088424	1.458615023	0.12361396	0.0175	0.00216324
	1.335001067	1.352919806	1.435084525	0.10008346	0.0087	0.00087073
	1.410986974	1.782227848	1.410986974	0		0
	1.435084525	3.210401996	1.335001067	-0.1000835		0
	1.458615023	1.352919806	1.335001067	-0.123614		0
	1.458615023	0.839588705	1.335001067	-0.123614		
	1.481604541	0.411976411	1.30833282	-0.1732717		3.97638115
	1.481604541	1.640791516	1.280933845	-0.2006707		
	1.568615918	0.913002122	1.252762968	-0.3158529	W(0.05,43)	0.943
	1.568615918	0	1.16315081	-0.4054651	W(ln)=	0.91061638
	1.648658626	2.781246039	1.16315081	-0.4855078		
	1.648658626	2.059467595	1.16315081	-0.4855078		
	1.667706821	1.352919806	1.098612289	-0.5690945		
	1.667706821	1.133608953	1.064710737	-0.6029961		
	1.722766598	0.986549085	0.993251773	-0.7295148		
	1.740466175	2.127557784	0.955511445	-0.7849547		
	1.791759469	4.427380539	0.955511445	-0.836248		
	1.791759469	4.924864104	0.916290732	-0.8754687		
	1.824549292	4.113385313	0.693147181	-1.1314021		
	2.028148247	2.460555898	0.641853886	-1.3862944		
	2.104134154	2.96792475	0.470003629	-1.6341305		
	2.208274414	1.782227848	0	-2.2082744		
	2.219203484	1.782227848	-0.415515444	-2.6347189		
	2.451005098	1.711734767	-0.820980552	-3.2719857		
Sum of xi	56.26742214		56.26742214			
Mean	1.308544701					
n=	43					
sum of xi^2	90.99206827					
1/n=	0.023255814					
xi=(sum xi)^2	3166.022794					
d=	17.3636312					
W=	0.910616383					
W(0.05,43)=	0.943					
W<W(0.5,43), the distribution is not lognormal						

APPENDIX E

FH-029 Screening Results

Summary of Detected Analytical Results, Detection Limits and Screening Criteria for FH-029 Samples

Location	Sample ID	Depth	Parameter	Result	PQL	Units	Screening Criteria	Screening Value	Units
SW101	29SD101	--	Arsenic	4.1	0.28	mg/kg	Soil Background	9.2	mg/kg
			Barium	30.9	0.03	mg/kg	Soil Background	157.3	mg/kg
			Cadmium	0.37 B	0.06	mg/kg	Soil Background	0.67	mg/kg
			Chromium	6.3	0.09	mg/kg	Soil Background	24.9	mg/kg
			Lead	4.8	0.19	mg/kg	Soil Background	19	mg/kg
			2-Butanone	0.007	0.006	mg/kg	30 TAC 335 Industrial Soil GWP	511	mg/kg
SW102	29SW102	--	Barium	0.145	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l
			Cadmium	0.022	0.0005	mg/l	30 TAC 335 Groundwater	0.005	mg/l
			Chromium	0.0115	0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l
			Lead	0.0223	0.0017	mg/l	30 TAC 335 Groundwater	0.015	mg/l
			Bis(2-ethylhexyl)phthalate	0.011	0.01	mg/l	30 TAC 335 Groundwater	0.00608	mg/l
			Acetone p-Isopropyltoluene	0.037 0.019	0.005 0.005	mg/l mg/l	30 TAC 335 Groundwater 30 TAC 335 Groundwater	3.65 0.0	mg/l mg/l
SW103	29SW103	--	Barium	0.0237	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l
			Chromium	0.0009 B	0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l
SW104	29SW104	--	Arsenic	0.0031	0.0025	mg/l	30 TAC 335 Groundwater	0.05	mg/l
			Barium	0.0797	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l
			Cadmium	0.0046	0.0005	mg/l	30 TAC 335 Groundwater	0.005	mg/l
			Chromium	0.0009	0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l

Summary of Detected Analytical Results, Detection Limits and Screening Criteria for FH-029 Samples

Location	Sample ID	Depth	Parameter	Result	PQL	Units	Screening Criteria	Screening Value	Units	
SW105	29SD105	--	Arsenic	3.7		mg/kg	Soil Background	9.2	mg/kg	
			Barium	38.6		mg/kg	Soil Background	157.3	mg/kg	
			Cadmium	0.83		mg/kg	Soil Background	0.67	mg/kg	
			Chromium	6.3		mg/kg	Soil Background	24.9	mg/kg	
			Lead	10.3		mg/kg	Soil Background	19	mg/kg	
	29SW105	--	Arsenic	0.003	B	0.0025	mg/l	30 TAC 335 Groundwater	0.05	mg/l
			Barium	0.0946		0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l
			Cadmium	0.0013	B	0.0005	mg/l	30 TAC 335 Groundwater	0.005	mg/l
			Chromium	0.001	B	0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l
			Lead	0.0018	B	0.0017	mg/l	30 TAC 335 Groundwater	0.015	mg/l
			4-Methyl-2-pentanone	0.008		0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			Barium	0.101		0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l
			Cadmium	0.0048		0.0005	mg/l	30 TAC 335 Groundwater	0.005	mg/l
			Chromium	0.0105		0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l
Lead	0.0096		0.0017	mg/l	30 TAC 335 Groundwater	0.015	mg/l			
SW106	29SW106	--	2-Methylnaphthalene	0.017		mg/l	30 TAC 335 Groundwater	0.0	mg/l	
			Naphthalene	0.024		mg/l	30 TAC 335 Groundwater	1.46	mg/l	
			1,2,4-trimethylbenzene	0.034		mg/l	30 TAC 335 Groundwater	0.0	mg/l	
			1,3,5-trimethylbenzene	0.006		mg/l	30 TAC 335 Groundwater	0.0	mg/l	
			Acetone	0.015		mg/l	30 TAC 335 Groundwater	3.65	mg/l	
			Naphthalene	0.049		mg/l	30 TAC 335 Groundwater	1.46	mg/l	
			Arsenic	2.2		0.44	mg/kg	Soil Background	9.2	mg/kg
			Barium	26.3		0.11	mg/kg	Soil Background	157.3	mg/kg
SW107	29SD107	--	Arsenic	2.2		mg/kg	Soil Background	9.2	mg/kg	
			Barium	26.3		mg/kg	Soil Background	157.3	mg/kg	

Summary of Detected Analytical Results, Detection Limits and Screening Criteria for FH-029 Samples

Location	Sample ID	Depth	Parameter	Result	PQL	Units	Screening Criteria	Screening Value	Units	
SW107	29SD107	--	Cadmium	2.9	0.05	mg/kg	Soil Background	0.67	mg/kg	
			Chromium	6.5	0.11	mg/kg	Soil Background	24.9	mg/kg	
			Lead	9.6	0.19	mg/kg	Soil Background	19	mg/kg	
			Bis(2-ethylhexyl)phthalate	1.4	0.44	mg/kg	30 TAC 335 Industrial Soil GWP	2.04	mg/kg	
			Di-n-octyl Phthalate	0.49	0.44	mg/kg	30 TAC 335 Industrial Soil GWP	204	mg/kg	
	29SW107	--	Barium	0.0343	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l	
			Cadmium	0.0007 B	0.0005	mg/l	30 TAC 335 Groundwater	0.005	mg/l	
			Chromium	0.0013 B	0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l	
			Chloromethane	0.01	0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l	
SW108	29SW108	--	Barium	0.0936	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l	
			Cadmium	0.0167	0.0005	mg/l	30 TAC 335 Groundwater	0.005	mg/l	
			Lead	0.0047	0.0017	mg/l	30 TAC 335 Groundwater	0.015	mg/l	
			1,2,4-trimethylbenzene	0.032	0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l	
			1,3,5-trimethylbenzene	0.009	0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l	
			Acetone	0.038	0.005	mg/l	30 TAC 335 Groundwater	3.65	mg/l	
			m,p-Xylene	0.026	0.005	mg/l	30 TAC 335 Groundwater	10	mg/l	
			Naphthalene	0.006	0.005	mg/l	30 TAC 335 Groundwater	1.46	mg/l	
			o-Xylene	0.013	0.005	mg/l	30 TAC 335 Groundwater	10.0	mg/l	
			Toluene	0.008	0.005	mg/l	30 TAC 335 Groundwater	1.0	mg/l	
SW109	29SW109	--	Arsenic	0.0114	0.0033	mg/l	30 TAC 335 Groundwater	0.05	mg/l	
			Barium	0.312	0.0008	mg/l	30 TAC 335 Groundwater	2.0	mg/l	
			Cadmium	0.0403	0.0004	mg/l	30 TAC 335 Groundwater	0.005	mg/l	
			Chromium	0.0352	0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l	
			Lead	0.0413	0.0014	mg/l	30 TAC 335 Groundwater	0.015	mg/l	
			Selenium	0.0049 B	0.0028	mg/l	30 TAC 335 Groundwater	0.05	mg/l	

Summary of Detected Analytical Results, Detection Limits and Screening Criteria for FH-029 Samples

Location	Sample ID	Depth	Parameter	Result	PQL	Units	Screening Criteria	Screening Value	Units
SW109	29SW109	--	1,2,4-trimethylbenzene	0.007	0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			2-Butanone	0.014	0.005	mg/l	30 TAC 335 Groundwater	1.83	mg/l
			Acetone	0.14	0.005	mg/l	30 TAC 335 Groundwater	3.65	mg/l
			Naphthalene	0.008	0.005	mg/l	30 TAC 335 Groundwater	1.46	mg/l
SW110	29SD110	--	Arsenic	3.2	0.39	mg/kg	Soil Background	9.2	mg/kg
			Barium	19.1	0.09	mg/kg	Soil Background	157.3	mg/kg
			Cadmium	0.2 B	0.05	mg/kg	Soil Background	0.67	mg/kg
			Chromium	4.6	0.09	mg/kg	Soil Background	24.9	mg/kg
			Lead	3.4	0.17	mg/kg	Soil Background	19	mg/kg
	29SW110	--	Barium	0.0575	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l
			Chromium	0.0014 B	0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l
			2-Butanone	0.008	0.005	mg/l	30 TAC 335 Groundwater	1.83	mg/l
			Acetone	0.073	0.005	mg/l	30 TAC 335 Groundwater	3.65	mg/l
SW111	29SD111	--	Arsenic	4.4	0.63	mg/kg	Soil Background	9.2	mg/kg
			Barium	72	0.15	mg/kg	Soil Background	157.3	mg/kg
			Cadmium	41.7	0.08	mg/kg	Soil Background	0.67	mg/kg
			Chromium	29.5	0.15	mg/kg	Soil Background	24.9	mg/kg
			Lead	118	0.27	mg/kg	Soil Background	19	mg/kg
			Benzo(b)fluoranthene	3.3	0.62	mg/kg	30 TAC 335 Industrial Soil GWP	0.0	mg/kg
			Bis(2-ethylhexyl)phthalate	12	1.2	mg/kg	30 TAC 335 Industrial Soil GWP	2.04	mg/kg
			Di-n-octyl Phthalate	2.6	0.62	mg/kg	30 TAC 335 Industrial Soil GWP	204	mg/kg
			1,2,4-trimethylbenzene	0.024	0.009	mg/kg	30 TAC 335 Industrial Soil GWP	0.0	mg/kg
			1,3,5-trimethylbenzene	0.015	0.009	mg/kg	30 TAC 335 Industrial Soil GWP	0.0	mg/kg
			2-Butanone	0.048	0.009	mg/kg	30 TAC 335 Industrial Soil GWP	511	mg/kg

Summary of Detected Analytical Results, Detection Limits and Screening Criteria for FH-029 Samples

Location	Sample ID	Depth	Parameter	Result	PQL	Units	Screening Criteria	Screening Value	Units			
SW111	29SD111	--	Acetone	0.26	0.009	mg/kg	30 TAC 335 Industrial Soil GWP	1020	mg/kg			
			m,p-Xylene	0.025	0.009	mg/kg	30 TAC 335 Industrial Soil GWP	1000	mg/kg			
			Naphthalene	0.021	0.009	mg/kg	30 TAC 335 Industrial Soil GWP	409	mg/kg			
			o-Xylene	0.01	0.009	mg/kg	30 TAC 335 Industrial Soil GWP	1000	mg/kg			
	29SW111	--	Barium	0.0263	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l			
			Cadmium	0.0012	B 0.0005	mg/l	30 TAC 335 Groundwater	0.005	mg/l			
			Chromium	0.0016	B 0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l			
SW112	29SW112	--	Barium	0.36	0.0008	mg/l	30 TAC 335 Groundwater	2.0	mg/l			
			Cadmium	0.019	0.0004	mg/l	30 TAC 335 Groundwater	0.005	mg/l			
			Chromium	0.0096	B 0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l			
			Lead	0.0039	0.0014	mg/l	30 TAC 335 Groundwater	0.015	mg/l			
			4-Methylphenol	0.014	0.01	mg/l	30 TAC 335 Groundwater	1.83	mg/l			
			Benzyl Alcohol	0.02	0.01	mg/l	30 TAC 335 Groundwater	0.0	mg/l			
			1,2,4-trimethylbenzene	0.062	0.01	mg/l	30 TAC 335 Groundwater	0.0	mg/l			
			2-Butanone	0.16	0.01	mg/l	30 TAC 335 Groundwater	1.83	mg/l			
			4-Methyl-2-pentanone	0.18	0.01	mg/l	30 TAC 335 Groundwater	0.0	mg/l			
			Acetone	0.36	0.01	mg/l	30 TAC 335 Groundwater	3.65	mg/l			
			Ethylbenzene	0.012	0.01	mg/l	30 TAC 335 Groundwater	0.7	mg/l			
			m,p-Xylene	0.064	0.01	mg/l	30 TAC 335 Groundwater	10	mg/l			
			Naphthalene	0.044	0.01	mg/l	30 TAC 335 Groundwater	1.46	mg/l			
			o-Xylene	0.028	0.01	mg/l	30 TAC 335 Groundwater	10.0	mg/l			
			Toluene	0.038	0.01	mg/l	30 TAC 335 Groundwater	1.0	mg/l			
			SW113	29SW113	--	Arsenic	0.0039	B 0.0033	mg/l	30 TAC 335 Groundwater	0.05	mg/l
						Barium	0.13	0.0008	mg/l	30 TAC 335 Groundwater	2.0	mg/l
Cadmium	0.0208	0.0004				mg/l	30 TAC 335 Groundwater	0.005	mg/l			
Chromium	0.0184	0.0008				mg/l	30 TAC 335 Groundwater	0.1	mg/l			

Summary of Detected Analytical Results, Detection Limits and Screening Criteria for FH-029 Samples

Location	Sample ID	Depth	Parameter	Result	PQL	Units	Screening Criteria	Screening Value	Units
SW113	29SW113	--	Lead	0.0264	0.0014	mg/l	30 TAC 335 Groundwater	0.015	mg/l
			Selenium	0.0067	0.0028	mg/l	30 TAC 335 Groundwater	0.05	mg/l
			Phenol	0.017	0.01	mg/l	30 TAC 335 Groundwater	21.9	mg/l
			1,2,4-trimethylbenzene	0.016	0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			2-Butanone	0.034	0.005	mg/l	30 TAC 335 Groundwater	1.83	mg/l
			4-Methyl-2-pentanone	0.011	0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			Acetone	0.042	0.005	mg/l	30 TAC 335 Groundwater	3.65	mg/l
			m,p-Xylene	0.01	0.005	mg/l	30 TAC 335 Groundwater	10	mg/l
			Naphthalene	0.007	0.005	mg/l	30 TAC 335 Groundwater	1.46	mg/l
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SW114	29SW114	--	Arsenic	0.0032	0.0025	mg/l	30 TAC 335 Groundwater	0.05	mg/l
			Barium	0.0659	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l
			Cadmium	0.0033	0.0005	mg/l	30 TAC 335 Groundwater	0.005	mg/l
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SW115	29SW115	--	Barium	0.0809	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l
			Cadmium	0.0077	0.0005	mg/l	30 TAC 335 Groundwater	0.005	mg/l
			Chromium	0.0144	0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l
			Lead	0.004	0.0017	mg/l	30 TAC 335 Groundwater	0.015	mg/l
			Acetone	0.009	0.005	mg/l	30 TAC 335 Groundwater	3.65	mg/l
			Bromodichloromethane	0.006	0.005	mg/l	30 TAC 335 Groundwater	0.1	mg/l
			Dibromochloromethane	0.007	0.005	mg/l	30 TAC 335 Groundwater	0.1	mg/l
			p-Isopropyltoluene	0.01	0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l
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SW116	29SD116	--	Arsenic	2.4 J	0.38	mg/kg	Soil Background	9.2	mg/kg
			Barium	12.1 J	0.09	mg/kg	Soil Background	157.3	mg/kg
			Cadmium	0.45	0.05	mg/kg	Soil Background	0.67	mg/kg
			Chromium	2.9 J	0.09	mg/kg	Soil Background	24.9	mg/kg

Summary of Detected Analytical Results, Detection Limits and Screening Criteria for FH-029 Samples

Location	Sample ID	Depth	Parameter	Result	PQL	Units	Screening Criteria	Screening Value	Units		
SW116	29SD116	--	Lead	2.8 J	0.16	mg/kg	Soil Background	19	mg/kg		
	29SW116	--	Barium	0.0767	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l		
SW117	29SW117	--	Barium	0.0982	0.0008	mg/l	30 TAC 335 Groundwater	2.0	mg/l		
			Cadmium	0.0033 B	0.0004	mg/l	30 TAC 335 Groundwater	0.005	mg/l		
			Chromium	0.0011 B	0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l		
			Lead	0.002 B	0.0014	mg/l	30 TAC 335 Groundwater	0.015	mg/l		
			Selenium	0.0032 B	0.0028	mg/l	30 TAC 335 Groundwater	0.05	mg/l		
			1,2,4-trimethylbenzene	0.038	0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l		
			2-Butanone	0.012	0.005	mg/l	30 TAC 335 Groundwater	1.83	mg/l		
			Ethylbenzene	0.006	0.005	mg/l	30 TAC 335 Groundwater	0.7	mg/l		
			m,p-Xylene	0.035	0.005	mg/l	30 TAC 335 Groundwater	10	mg/l		
			Naphthalene	0.012	0.005	mg/l	30 TAC 335 Groundwater	1.46	mg/l		
			o-Xylene	0.016	0.005	mg/l	30 TAC 335 Groundwater	10.0	mg/l		
			Toluene	0.022	0.005	mg/l	30 TAC 335 Groundwater	1.0	mg/l		
			Trichloroethene	0.009	0.005	mg/l	30 TAC 335 Groundwater	0.005	mg/l		
			SW118	29SD118	--	Arsenic	5 J	0.48	mg/kg	Soil Background	9.2
Barium	84.3 J	0.12				mg/kg	Soil Background	157.3	mg/kg		
Cadmium	2.9	0.06				mg/kg	Soil Background	0.67	mg/kg		
Chromium	15.5 J	0.12				mg/kg	Soil Background	24.9	mg/kg		
Lead	18.6 J	0.2				mg/kg	Soil Background	19	mg/kg		
Bis(2-ethylhexyl)phthalate	1.1	0.48				mg/kg	30 TAC 335 Industrial Soil GWP	2.04	mg/kg		
Pyrene	0.51	0.48				mg/kg	30 TAC 335 Industrial Soil GWP	310	mg/kg		
29SW118	--	Barium				0.0689	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l
		Cadmium				0.0021 B	0.0005	mg/l	30 TAC 335 Groundwater	0.005	mg/l

Summary of Detected Analytical Results, Detection Limits and Screening Criteria for FH-029 Samples

Location	Sample ID	Depth	Parameter	Result	PQL	Units	Screening Criteria	Screening Value	Units
SW118	29SW118	--	Bis(2-ethylhexyl)phthalate	0.021	0.01	mg/l	30 TAC 335 Groundwater	0.00608	mg/l
			1,2,4-trimethylbenzene	0.022	0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			1,3,5-trimethylbenzene	0.007	0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			2-Butanone	0.013	0.005	mg/l	30 TAC 335 Groundwater	1.83	mg/l
			m,p-Xylene	0.014	0.005	mg/l	30 TAC 335 Groundwater	10	mg/l
			o-Xylene	0.008	0.005	mg/l	30 TAC 335 Groundwater	10.0	mg/l
SW119	29SD119	--	Arsenic	4.8 J	0.42	mg/kg	Soil Background	9.2	mg/kg
			Barium	20.9 J	0.1	mg/kg	Soil Background	157.3	mg/kg
			Cadmium	0.21	0.05	mg/kg	Soil Background	0.67	mg/kg
			Chromium	3.1 J	0.1	mg/kg	Soil Background	24.9	mg/kg
			Lead	3.2 J	0.18	mg/kg	Soil Background	19	mg/kg
	29SW119	--	Arsenic	0.0027 B	0.0025	mg/l	30 TAC 335 Groundwater	0.05	mg/l
			Barium	0.087	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l
			Acetone	0.051	0.005	mg/l	30 TAC 335 Groundwater	3.65	mg/l
SW120	29SD120	--	Arsenic	5.1 J	0.43	mg/kg	Soil Background	9.2	mg/kg
			Barium	60.8 J	0.11	mg/kg	Soil Background	157.3	mg/kg
			Cadmium	0.19	0.05	mg/kg	Soil Background	0.67	mg/kg
			Chromium	10.7 J	0.11	mg/kg	Soil Background	24.9	mg/kg
			Lead	5.9 J	0.18	mg/kg	Soil Background	19	mg/kg
			Selenium	0.41	0.39	mg/kg	Soil Background	0.44	mg/kg
			2-Butanone	0.007	0.006	mg/kg	30 TAC 335 Industrial Soil GWP	511	mg/kg

Summary of Detected Analytical Results, Detection Limits and Screening Criteria for FH-029 Samples

Location	Sample ID	Depth	Parameter	Result	PQL	Units	Screening Criteria	Screening Value	Units
SW120	29SW120	--	Barium	0.0803	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l
			2-Butanone	0.023	0.005	mg/l	30 TAC 335 Groundwater	1.83	mg/l
			4-Methyl-2-pentanone	0.013	0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			Acetone	0.1	0.005	mg/l	30 TAC 335 Groundwater	3.65	mg/l
SW121	29SD121	--	Arsenic	5.5 *	0.44	mg/kg	Sediment Benchmarks	6	mg/kg
			Barium	66.4	0.05	mg/kg	Sediment Benchmarks	0.0	mg/kg
			Cadmium	0.72 B	0.09	mg/kg	Sediment Benchmarks	0.6	mg/kg
			Chromium	13.6	0.14	mg/kg	Sediment Benchmarks	26	mg/kg
			Lead	16.8	0.3	mg/kg	Sediment Benchmarks	30.2	mg/kg
			Bis(2-ethylhexyl)phthalate	1	0.58	mg/kg	Sediment Benchmarks	0.182	mg/kg
			2-Butanone	0.061	0.009	mg/kg	Sediment Benchmarks	0.0	mg/kg
			Acetone	0.18	0.018	mg/kg	Sediment Benchmarks	0.0	mg/kg
			Methylene Chloride	0.022	0.009	mg/kg	Sediment Benchmarks	0.0	mg/kg
			29SW121	--	Barium	0.0412	0.0003	mg/l	30 TAC 335 Groundwater
SW122	29SD122	--	Arsenic	3.1 *	0.36	mg/kg	Sediment Benchmarks	6	mg/kg
			Barium	38.8	0.04	mg/kg	Sediment Benchmarks	0.0	mg/kg
			Cadmium	0.62 B	0.07	mg/kg	Sediment Benchmarks	0.6	mg/kg
			Chromium	9.5	0.12	mg/kg	Sediment Benchmarks	26	mg/kg
			Lead	8.8	0.25	mg/kg	Sediment Benchmarks	30.2	mg/kg
			Bis(2-ethylhexyl)phthalate	0.93	0.48	mg/kg	Sediment Benchmarks	0.182	mg/kg

Summary of Detected Analytical Results, Detection Limits and Screening Criteria for FH-029 Samples

Location	Sample ID	Depth	Parameter	Result	PQL	Units	Screening Criteria	Screening Value	Units
SW122	29SD122	--	2-Butanone	0.01	0.007	mg/kg	Sediment Benchmarks	0.0	mg/kg
			Acetone	0.065	0.007	mg/kg	Sediment Benchmarks	0.0	mg/kg
	29SW122	--	Barium	0.0401	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l
			Chromium	0.001 B	0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l
SW123	29SD123	--	Arsenic	3.3 J	0.48	mg/kg	Soil Background	9.2	mg/kg
			Barium	45.3 J	0.12	mg/kg	Soil Background	157.3	mg/kg
			Cadmium	2.3	0.06	mg/kg	Soil Background	0.67	mg/kg
			Chromium	8.9 J	0.12	mg/kg	Soil Background	24.9	mg/kg
			Lead	8.9 J	0.2	mg/kg	Soil Background	19	mg/kg
	29SW123	--	Barium	0.0374	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l
			Chromium	0.001 B	0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l
		Mercury	0.0001 B	0.0001	mg/l	30 TAC 335 Groundwater	0.002	mg/l	
SW124	29SD124	--	Arsenic	5.3 J	0.58	mg/kg	Soil Background	9.2	mg/kg
			Barium	50.3 J	0.14	mg/kg	Soil Background	157.3	mg/kg
			Cadmium	1.4	0.07	mg/kg	Soil Background	0.67	mg/kg
			Chromium	11.1 J	0.14	mg/kg	Soil Background	24.9	mg/kg
			Lead	12.7 J	0.25	mg/kg	Soil Background	19	mg/kg
			Acetone	0.14	0.009	mg/kg	30 TAC 335 Industrial Soil GWP	1020	mg/kg
	29SW124	--	Barium	0.0496	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l
		Mercury	0.0002 B	0.0001	mg/l	30 TAC 335 Groundwater	0.002	mg/l	

Summary of Detected Analytical Results, Detection Limits and Screening Criteria for FH-029 Samples

Location	Sample ID	Depth	Parameter	Result	PQL	Units	Screening Criteria	Screening Value	Units
SW124	29SW124	--	Acetone	0.008	0.005	mg/l	30 TAC 335 Groundwater	3.65	mg/l
SW125	29SD125	--	Arsenic	6.9 J	0.59	mg/kg	Soil Background	9.2	mg/kg
			Barium	70.7 J	0.14	mg/kg	Soil Background	157.3	mg/kg
			Cadmium	1.1	0.07	mg/kg	Soil Background	0.67	mg/kg
			Chromium	15.3 J	0.14	mg/kg	Soil Background	24.9	mg/kg
			Lead	17.2 J	0.25	mg/kg	Soil Background	19	mg/kg
	29SW125	--	Barium	0.037	0.0003	mg/l	30 TAC 335 Groundwater	2.0	mg/l
			Mercury	0.0002	0.0001	mg/l	30 TAC 335 Groundwater	0.002	mg/l
SW126	29SW126	--	Barium	0.0759	0.0008	mg/l	30 TAC 335 Groundwater	2.0	mg/l
			Cadmium	0.0064	0.0004	mg/l	30 TAC 335 Groundwater	0.005	mg/l
			Chromium	0.0015 B	0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l
			Lead	0.0051	0.0014	mg/l	30 TAC 335 Groundwater	0.015	mg/l
			1,2,4-trimethylbenzene	0.036	0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			2-Butanone	0.015	0.005	mg/l	30 TAC 335 Groundwater	1.83	mg/l
			m,p-Xylene	0.022	0.005	mg/l	30 TAC 335 Groundwater	10	mg/l
			Naphthalene	0.006	0.005	mg/l	30 TAC 335 Groundwater	1.46	mg/l
			o-Xylene	0.012	0.005	mg/l	30 TAC 335 Groundwater	10.0	mg/l
			Toluene	0.007	0.005	mg/l	30 TAC 335 Groundwater	1.0	mg/l
SW127	29SW127	--	Arsenic	0.0035 B	0.0033	mg/l	30 TAC 335 Groundwater	0.05	mg/l
			Barium	0.17	0.0008	mg/l	30 TAC 335 Groundwater	2.0	mg/l
			Cadmium	0.0037 B	0.0004	mg/l	30 TAC 335 Groundwater	0.005	mg/l
			Chromium	0.0032 B	0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l
			Lead	0.0028 B	0.0014	mg/l	30 TAC 335 Groundwater	0.015	mg/l

Summary of Detected Analytical Results, Detection Limits and Screening Criteria for FH-029 Samples

Location	Sample ID	Depth	Parameter	Result	PQL	Units	Screening Criteria	Screening Value	Units
SW127	29SW127	--	4-Methylphenol	0.023	0.01	mg/l	30 TAC 335 Groundwater	1.83	mg/l
			1,2,4-trimethylbenzene	0.044	0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			2-Butanone	0.016	0.005	mg/l	30 TAC 335 Groundwater	1.83	mg/l
			4-Methyl-2-pentanone	0.01	0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l
			Acetone	0.047	0.005	mg/l	30 TAC 335 Groundwater	3.65	mg/l
			m,p-Xylene	0.024	0.005	mg/l	30 TAC 335 Groundwater	10	mg/l
			Naphthalene	0.009	0.005	mg/l	30 TAC 335 Groundwater	1.46	mg/l
			o-Xylene	0.01	0.005	mg/l	30 TAC 335 Groundwater	10.0	mg/l
SW128	29SD128	--	Arsenic	7.4	0.34	mg/kg	Soil Background	9.2	mg/kg
			Barium	93.1	0.04	mg/kg	Soil Background	157.3	mg/kg
			Cadmium	0.45 B	0.07	mg/kg	Soil Background	0.67	mg/kg
			Chromium	15.8	0.11	mg/kg	Soil Background	24.9	mg/kg
			Lead	9.4	0.23	mg/kg	Soil Background	19	mg/kg
			2-Butanone	0.032	0.007	mg/kg	30 TAC 335 Industrial Soil GWP	511	mg/kg
	Acetone	0.11	0.007	mg/kg	30 TAC 335 Industrial Soil GWP	1020	mg/kg		
	29SW128	--	Arsenic	0.0038 B	0.0033	mg/l	30 TAC 335 Groundwater	0.05	mg/l
			Barium	0.205	0.0008	mg/l	30 TAC 335 Groundwater	2.0	mg/l
			Cadmium	0.0241	0.0004	mg/l	30 TAC 335 Groundwater	0.005	mg/l
			Chromium	0.0102	0.0008	mg/l	30 TAC 335 Groundwater	0.1	mg/l
			Lead	0.0177	0.0014	mg/l	30 TAC 335 Groundwater	0.015	mg/l
			Selenium	0.0043 B	0.0028	mg/l	30 TAC 335 Groundwater	0.05	mg/l
1,2,4-trimethylbenzene			0.008	0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l	
2-Butanone			0.056	0.005	mg/l	30 TAC 335 Groundwater	1.83	mg/l	
4-Methyl-2-pentanone			0.045	0.005	mg/l	30 TAC 335 Groundwater	0.0	mg/l	
Acetone			0.12	0.005	mg/l	30 TAC 335 Groundwater	3.65	mg/l	
m,p-Xylene	0.008	0.005	mg/l	30 TAC 335 Groundwater	10	mg/l			
Naphthalene	0.006	0.005	mg/l	30 TAC 335 Groundwater	1.46	mg/l			

APPENDIX F

PAH Position Paper

FH-028

POLYCYCLIC AROMATIC HYDROCARBONS

POSITION PAPER

JULY 14, 1998

INTRODUCTION

Polycyclic (or polynuclear) aromatic hydrocarbons (PAHs) are distributed in surface soil and sediment at FH-028. This is not atypical with respect to PAH contamination because PAHs are one of the most common contaminants in the environment (ASTDR 1994, Edwards 1983; Eisler 1987; LaFamme and Hites 1978; Yang et al. 1991). PAH contamination presents a unique problem in that the concentrations found at FH-028 according to the TNRCC Screening criteria pose unacceptable risks to human health; however, many continuing PAH sources such as emissions from automobiles and tanks and nearby utility poles are more likely contributors to the PAH contamination than past SWMU activities. This questions whether PAHs require remediation in the RCRA corrective action and closure processes and whether any remediation efforts would be effective given the presence of continuing PAH sources.

2. BACKGROUND

PAHs are semi-volatile organic compounds that consist of two or more fused aromatic rings and include chemicals such as anthracene, benzo(a)pyrene (B(a)P), fluoranthene, and naphthalene. PAHs are formed when hydrocarbons undergo incomplete combustion in which hydrogen is consumed in preference to carbon. This results in the production of carbon ring structures that compose PAHs. PAHs exhibit a high degree of thermal stability, meaning they are not affected or broken down by common combustion reaction of incinerations. They are non-polar, high melting point, high boiling point compounds that are insoluble in water. Incomplete combustion of hydrocarbons is a common process; consequently, PAHs are ubiquitously distributed in most environmental media (i.e. air, soil, groundwater, surface water, and sediment) (ASTDR 1994; Edwards 1983; Eisler 1987; LaFlemme and Hites 1978; Yang et al. 1991).

2.1 COMMON SOURCES AND REPORTED CONCENTRATIONS

PAHs are introduced into the environment by both natural and anthropogenic (man-made) combustion processes. Major sources of naturally produced PAHs include volcanic eruptions, forest fires, and microbial production. Anthropogenic activities associated with significant production of PAHs include coke production in the iron and steel industry, catalytic cracking in the petroleum industry, the manufacture of carbon black and coal tar pitch and asphalt, power generation, controlled refuse incineration, woodburning stoves and fireplaces, cigarette smoking, open burning, and emissions from internal combustion engines (ASTDR 1994; Concord 1992; Edwards 1983; Eisler 1987; Menzie et al. 1992; Yang et al. 1991). The high thermal stability of PAHs result in their presence in the combustion products of most systems burning fossil fuels and wood. PAHs are natural components of crude oil, coal, and wood and therefore are released during the combustion of these fuels. As a result, any process involving the heating or combustion of crude oil, petroleum-derived products, coal or wood is a potential source for PAHs. However, properly managed combustors (e.g., modern fossil fuel-burning power plants) that operate at low temperatures (e.g., wood burning fireplaces) are more significant sources of PAHs. In addition to combustion-related sources, the direct application or release of any PAH-containing material, including asphalt, lubricating oil, coal tar, also can introduce PAHs into the environment.

Current literature suggest that the most common anthropogenic source of PAHs in the environment is automobile exhaust (Concord 1994; Edwards 1983; Eisler 1987; Menzie et al. 1992; Munch 1991; Takada et al. 1991; Yang et al. 1991). The high thermal stability of PAH compounds allows them to survive engine combustion and be released into the environment. The natural occurring presence of PAHs in coal and crude oil suggest that some geologic formations also may be sources of PAHs in the environment.

An understanding of the ambient environmental concentrations of PAHs can be obtained from numerous papers that have documented the levels of PAHs found in rural and urban soils. Carcinogenic PAHs have been found in surface soils throughout the world. Whether in an urban area, rural area, or remote forest, PAHs are present. These detections indicate that PAHs are present in most areas even in the absence of activities associated with handling wastes containing PAHs. Urban areas typically have higher soil concentration of carcinogenic PAHs than do rural or forest areas because of the proximity of urban areas to sources of fossil fuel combustion. Reported levels in soil from various environments are discussed below.

Forest Soil. Typical PAH concentrations for forest soil range from 1.5 $\mu\text{g}/\text{kg}$ B(a)P in German beech and spruce forest near Lake Constance to 40 $\mu\text{g}/\text{kg}$ in oak and pine forest in Massachusetts to 240 to 1300 $\mu\text{g}/\text{kg}$ B(a)P in mixed forests in Connecticut and Massachusetts (Edwards 1983). Total PAH concentrations of 7000 $\mu\text{g}/\text{kg}$ have been described for coniferous forest in Maine and 13,000 $\mu\text{g}/\text{kg}$ for an oak forest in Massachusetts (Edwards 1983).

Agricultural Soil. PAH concentrations in agricultural soil vary from 86.6 $\mu\text{g}/\text{kg}$ B(a)P (1,109 $\mu\text{g}/\text{kg}$ total PAHs) for cultivated soil in Canada to 900 $\mu\text{g}/\text{kg}$ B(a)P in a plowed field in Connecticut. Plowed wheat and cotton fields in Russia contained 0.4 and 4.6 $\mu\text{g}/\text{kg}$ B(a)P, respectively (Edwards 1983).

Urban Soil. PAH concentrations in soil in urban areas have been reported at concentrations between 600 and 120,000 $\mu\text{g}/\text{kg}$. Bradley et al. (1994) described total PAH concentrations in Providence, Rhode Island, Boston, Massachusetts, and Springfield, Massachusetts at 16,800, 18,700, and 19,100 $\mu\text{g}/\text{kg}$ (2,900, 4,600, and 4,500 $\mu\text{g}/\text{kg}$ B(a)P), respectively. B(a)P concentration in Moscow ranged from 79.3 to 346.5 $\mu\text{g}/\text{kg}$. Blumer (1961) reports that B(a)P concentration in Cape Cod, Massachusetts soil range from 40 to 1300 $\mu\text{g}/\text{kg}$. Soil from open country near a town in Switzerland contained between 5,000 and 120,000 $\mu\text{g}/\text{kg}$ total PAHs. Soils at the base of a utility poles in British Columbia showed a mean total PAH concentration of 3,076,000 $\mu\text{g}/\text{kg}$, while wood chips/splinters from treated wood poles and rail way ties contained about 62,000,000 and 1,600,000 $\mu\text{g}/\text{kg}$ total PAHs, respectively (Wan 1994).

Soil in Industrial Areas. Soil in industrial areas have been reported to contain between 5.8 and 200,000 $\mu\text{g}/\text{kg}$ B(a)P. Soil from an urban/industrial area in Czechoslovakia contained between 37.7 and 42.1 $\mu\text{g}/\text{kg}$ B(a)P. In Russia, soil from a plastic factory contained between 5.8 and 299.7 $\mu\text{g}/\text{kg}$ B(a)P and soil from an oil refiner contained 200,000 $\mu\text{g}/\text{kg}$ B(a)P. Soil from a German tar plant was found to contain 120,000 $\mu\text{g}/\text{kg}$ B(a)P (Edwards 1983).

Soils near Roads and Highways. Several studies have reported PAH concentrations associated with roads and highways. Eisler (1987) reported between 8,000 to 336,000 $\mu\text{g}/\text{kg}$ total PAHs in road dust. A study of PAH concentrations found a mean concentration of 363 $\mu\text{g}/\text{kg}$ B(a)P (3,346 $\mu\text{g}/\text{kg}$ total PAHs) 0.5 meters from a major arterial road in a residential area in Brisbane, Australia (Yang et al. 1991). In fact, significant concentrations were detected at distances of 15 meters from the road (Yang et al. 1991). Another study sampled soil 0.2 meters from a road where total PAH concentrations ranged from 6,600 to 9,800 $\mu\text{g}/\text{kg}$, while B(a)P concentration ranged from 260 to 450 $\mu\text{g}/\text{kg}$ (Munch 1991). A summary of existing data in a study funded by the Canadian government reported soil concentrations of 3,196 $\mu\text{g}/\text{kg}$ of B(a)P 1 meter from a road and 947 $\mu\text{g}/\text{kg}$ of B(a)P 100 meters from a Canadian road (Concord 1992) indicating that PAH levels decrease with distance from the road. A focused study of PAH concentrations in soil that one might expect to find due to automobile exhaust. B(a)P concentrations in soil ranged from 165 to 3,196 $\mu\text{g}/\text{kg}$, and total PAH concentrations ranged from 20,000 $\mu\text{g}/\text{kg}$ at 1 meter to 8,000 $\mu\text{g}/\text{kg}$ at 600 meters from a road.

2.2 FATE AND TRANSPORT

When released into the atmosphere, PAH compounds will become associated with particulate materials. Their residence time in the atmosphere, and transport to various geographic locations is governed by particulate size, meteorological conditions, and atmospheric reactions (Eisler 1987). Atmospheric reactivity is limited by the lifetime of the particle, which is affected by diffusion, sedimentation, and wet scavenging processes (Concord 1992). Transformation reactions of PAHs include nitration reactions and reactions with ozone and sulphur oxides. However, much of the PAHs released into the atmosphere eventually reach soil and surface water.

Migration of PAHs downward in the soil column is limited by the relatively strong adsorption of PAHs to soil particles (Concord 1992). Site-specific modeling of soil leaching has been conducted at a DOE facility for seven PAHs including B(a)P. The modeling results indicate that hundreds to thousands of years are required for PAHs in soil to migrate to groundwater, and higher molecular weight PAHs such as B(a)P migrate more slowly than lower weight PAHs. In general, the available evidence suggests that downward migration of PAHs in soil is limited and that PAHs do not appear to pose a threat to groundwater.

In surface water, PAHs may disperse into the water column, evaporate, settle out of the water column into bottom sediments, concentrate in aquatic organisms, or degrade (e.g. photochemical or biological oxidation). Once in bottom sediments, PAHs degrade very slowly due to the absence of oxygen and light. As a result of rapid sedimentation and low degradation, sediments tend to accumulate PAH concentrations by a factor of 1000 or more relative to the overlying water (Concord 1992).

2.3 Risk Effects

2.3.1 Human Health Risks from Exposure to PAHs

Human health concerns center on the known or suspected carcinogenic properties as well as potential noncarcinogenic effects of some PAHs. Low molecular weight PAHs have toxic effects, but typically are not carcinogenic. However, high molecular weight PAHs are carcinogenic, but are relatively nontoxic. As a result of the widespread distribution of PAHs, humans are exposed to these compounds nearly everyday (Menzie et al. 1992). Typically, the largest potential dose of carcinogenic PAHs to nonsmokers is through consumption of food (96.2% of total PAH dose/day) (Menzie et al. 1992). Smokers and individuals living in urban environments with high ambient PAH concentrations may receive nearly an equal dose from air (Menzie et al. 1992). Menzie et al. (1992) report that incidental soil ingestion and consumption of drinking water only account for approximately 2.1% of the daily dose, but these are two of the media regulated in the RCRA corrective action process; whereas, food and tobacco smoke are not regulated by this process.

3. POTENTIAL SOURCES OF PAHS AT FH-028

Several of the previously mentioned sources of PAHs apply to past and/or present processes associated with FH-028 facility:

- combustion engines exhaust,
- utility poles and railroad ties (not sure of railroad ties),
- asphalt/paving operations, and
- dust/vegetation control operations (waste oil application).

Combustion Engine Exhaust. Vehicle exhaust is likely a source of PAHs in surface soil and sediment at FH-028. As mentioned previously, concentrations of B(a)P exceeding 3000 $\mu\text{g}/\text{kg}$ have been frequently detected near roads and highways. In addition, emissions from the tanks that frequently travel the roads near the site are likely sources for the contamination. The highest concentration of B(a)P at FH-028 is 2800 $\mu\text{g}/\text{kg}$ at SB-102.

Utility Poles. Treated wood utility poles are present at FH-028. As discussed previously, utility poles can be significant local sources of PAHs. For example soils at the base of utility poles have been shown to contain a mean total PAH concentration of 3,076,000 $\mu\text{g}/\text{kg}$ (Wan 1994). In addition, wood chips/splinters from treated wood poles and railway ties contained about 62,000,000 and 1,600,000 $\mu\text{g}/\text{kg}$ total PAHs, respectively (Wan 1994).

Asphalt/Paving Operations. Asphalt/paving operations include all areas where asphalt pavement has been installed (roads, parking lots, erosion control) and numerous areas where a grave/tar mixture has been installed along roads or buildings.

Dust/Vegetation Control Operations. Although no specific documentation is available which details the use of waste oil in dust and vegetation control, this type of application of waste oil was a common practice. The application of waste oil as a dust control was a common practice in the United States by farmers, resident, government, and industries. No analytical data is available relating to possible PAH concentrations in waste oil used in these types of applications.

4.0 FH-028 CONTAMINANTS OF CONCERN

Based on the most recent sampling event the following potential contaminants of concern and their concentration range at FH-028 are presented below.

Analyte	Range in mg/kg
Arsenic	10.3
Cadmium	0.63 to 5.8
Lead	22.5 to 530
Chromium	138
PAHs	
benzo(a)pyrene	.059 - 2.8
benzo(a)anthracene	.046 - 3.1
benzo(b)fluoranthene	0.84 - 4.6
benzo(g,h,i)perylene	0.4 - 1.6
benzo(k)fluoranthene	0.46 - 3.0
chrysene	0.75 - 4.5
dibenzo(a,h)anthracene	0.44 - 0.66
indeno(1,2,3-cd)pyrene	0.44 - 2.0
phenanthrene	0.43 - 1.1

CONCLUSIONS RELATING TO PAH REMEDIATION AT FH-028

PAHs are widely distributed in the environment and pose toxic and/or carcinogenic health risks to human and ecological receptors. PAHs have been detected in soil and sediment at FH-028; however, the concentrations detected are similar to concentrations detected in many areas outside of the facility boundaries such as other industrial areas and roadway soils as discussed previously. For example, of the B(A)P concentrations detected the highest concentration was 2.8 mg/kg which is less than the literature values for B(a)P in industrial soil. Accordingly, the risk from exposure to PAHs at FH-028 is similar to numerous environmental exposures which occur outside of FH-028.

The nature and concentration of PAHs in soils and sediment are similar to what has been reported by literature in areas that are not hazardous waste sites. PAHs exist in soils in forest, agricultural, rural, industrial, and urban areas. In addition, PAHs are present in most sediments, especially those near urban areas. At this time, US EPA is not requiring mitigation of PAHs at these locations which probably pose similar risk to human health and the environment. Remediating PAHs at FH-028 would reduce PAH levels below those typical at many other locations, but would not reduce risk to the general populations or environment.

At this time, it is possible to attribute most of the PAH contamination to on-site sources including asphalt, tar, automobile and tank exhaust, utility poles, and dust control as likely contributors to the PAH contamination, and these sources are still present at FH-028 and will continue to release PAHs. In addition, PAHs have probably been and continue to be transported to FH-028 from numerous off-site sources via wind dispersal and subsequent deposition. As a result, remediation of PAH contamination now would probably not be a long-term solution due to continuous deposition of PAHs to the environment from both on-site and off-site sources. Consequently, implementation of a RCRA Corrective Action in this area at this time would not reduce the overall risk to human health or the environment. It is recommended that any action for PAHs in surface soil and sediment at FH-028 locations be deferred until facility closure. PAH concentrations and the associated risks will be evaluated at that time for remediation to risk-based levels. However, implementation of surveillance and maintenance activities prior to closure, could be used for evaluation of PAH levels and a significant increase in concentration could warrant remediation at that time.

