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SSIC #5090.3

Southwest Division
Naval Facilities Engineering Command
Contracts Department
1220 Pacific Highway, Room 135
San Diego, CA 92132-5187

Contract No. N68711-92-D-4670

COMPREHENSIVE LONG-TERM ENVIRONMENTAL ACTION NAVY

CLEAN II

SOIL VAPOR EXTRACTION PILOT TEST REPORT - SITE 24 MCAS EL TORO, CALIFORNIA

CTO-0073/0188

October 1996

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ACRONYMS/ABBREVIATIONS

BCT	BRAC Cleanup Team
bgs	below ground surface
BNI	Bechtel National, Inc.
BRAC	Base Realignment and Closure
Cal-EPA	California Environmental Protection Agency
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cfm	cubic feet per minute
CLEAN	Comprehensive Long-Term Environmental Action Navy
CTO	Contract Task Order
DON	Department of the Navy
DQO	data quality objective
DTSC	Department of Toxic Substances Control
FFA	Federal Facilities Agreement
FS	Feasibility Study
µg/L	micrograms per liter
MCAS	Marine Corps Air Station
MSL	mean sea level
OD	outside diameter
PID	photoionization detector
PVC	polyvinyl chloride
RI	Remedial Investigation
RWQCB	(California) Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act (1986)
scfm	standard cubic feet per minute
SVE	soil vapor extraction
SWDIV	Southwest Division Naval Facilities Engineering Command
TCE	trichloroethene
U.S. EPA	United States Environmental Protection Agency
VOC	volatile organic compound
WG	water gauge

ACRONYMS/ABBREVIATIONS (continued)

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Section 1
INTRODUCTION

This report presents the results of the soil vapor extraction (SVE) pilot test that was conducted as part of the Phase II Remedial Investigation (RI)/Feasibility Study (FS) at Site 24, the Volatile Organic Compound (VOC) Source Area, at the Marine Corps Air Station (MCAS) El Toro in Orange County, California. The pilot testing was performed by Bechtel National, Inc. (BNI), on behalf of the U.S. Department of the Navy (DON), Southwest Division Facilities Engineering Command (SWDIV) in accordance with Contact Task Order (CTO)-0073. This CTO was issued under the Comprehensive Long-Term Environmental Action Navy (CLEAN) II Program, contract No. N68711-92-D-4670. This SVE Pilot Test Report is based on SVE pilot testing conducted during May, June and July 1996.

1.1 PURPOSE OF REPORT

The SVE pilot test was designed to fulfill the VOC Source Area data quality objectives (DQOs) (BNI 1995a, 1996a). The DQOs for Site 24 identify a decision to determine whether pilot tests are necessary to evaluate remedial alternatives (BNI 1995). SVE is an applicable remedial technology and has been identified as a presumptive remedy by the United States Environmental Protection Agency (U.S. EPA) for sites with VOC-contaminated soil. The DQO states that inputs affecting the decision to perform pilot testing include the need to identify the technology and its implementability, effectiveness, and cost. Because these characteristics of SVE are dependent on site-specific criteria, a pilot test was conducted. The purpose of this report is to present the methods, findings, and conclusions of the SVE pilot testing at Site 24.

1.2 GUIDANCE AND AGREEMENTS

Guidance to implement the RI/FS is provided in the Installation Restoration Program Manual (DON 1992), which defines how the DON will satisfy guidelines, regulations, and criteria associated with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 and the Superfund Amendments and Reauthorization Act (SARA) of 1986 (DON 1994); the Marine Corps Environmental Compliance and Protection Manual (DON 1990); and the U.S. EPA Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (U.S. EPA 1988).

This report was prepared in accordance with the October 1990 Federal Facilities Agreement (FFA) between the DON, U.S. EPA Region IX, California Department of Health Services (now referred to as the California Environmental Protection Agency [Cal-EPA]), represented by the Department of Toxic Substances Control (DTSC) and the California Regional Water Quality Control Board (RWQCB) Santa Ana Region. The FFA is a cooperative agreement between the DON, U.S. EPA, and Cal-EPA (DTSC and RWQCB Santa Ana Region) that:

- assures environmental impacts are investigated and appropriate response actions are taken to protect public health and the environment;

- establishes a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions;
- facilitates cooperation, exchange of information, and participation of the parties; and
- assures adequate assessment, prompt notification, cooperation, and coordination between federal and state agencies.

The implementation of the FFA is included as one of the responsibilities of the Base Realignment and Closure (BRAC) Cleanup Team (BCT). The BCT consists of representatives from SWDIV, U.S. EPA, and Cal-EPA (DTSC and RWQCB Santa Ana Region). It was established to manage and coordinate environmental restoration and compliance programs related to the closure and disposal of MCAS El Toro by July 1999. In addition, the MCAS El Toro BCT has specified in its mission and vision statement that:

- fast-track remediation of sites is necessary to expedite reuse; and
- restoration and reuse is to be maximized by 1999.

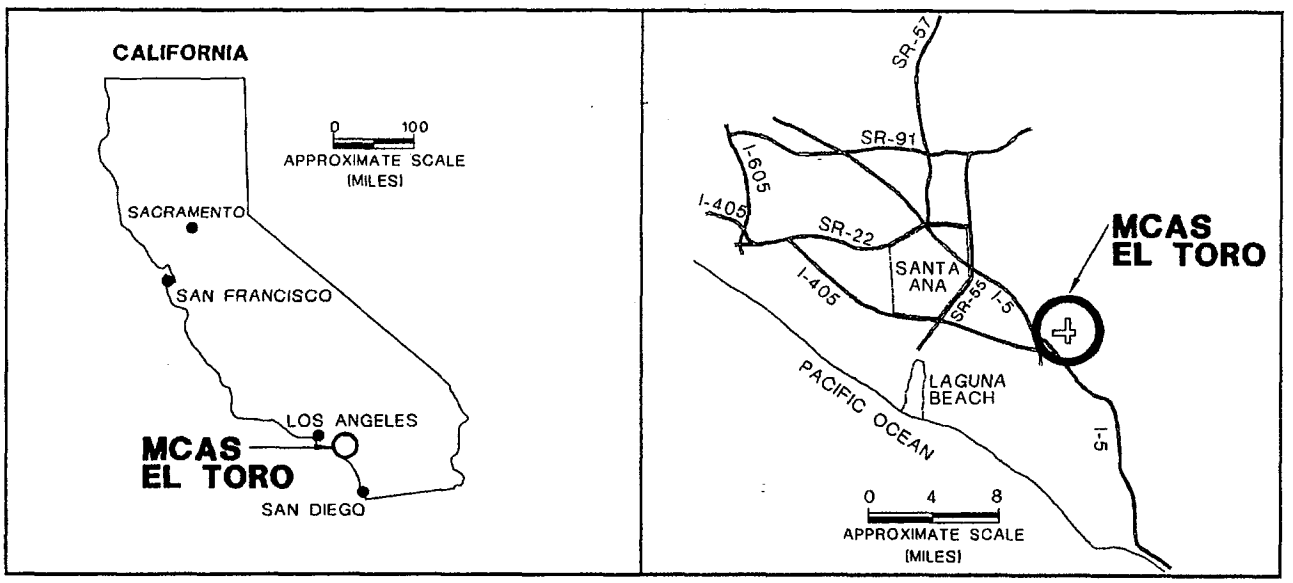
Additional guidance was obtained from the Phase II RI/FS Work Plan (BNI 1995a), Field Sampling Plan (BNI 1995b), Data Quality Assurance Plan (BNI 1995c), Quality Assurance Project Plan (BNI 1995d), Waste Management Plan (BNI 1996e), and Site Specific Health and Safety Plan (BNI 1995f).

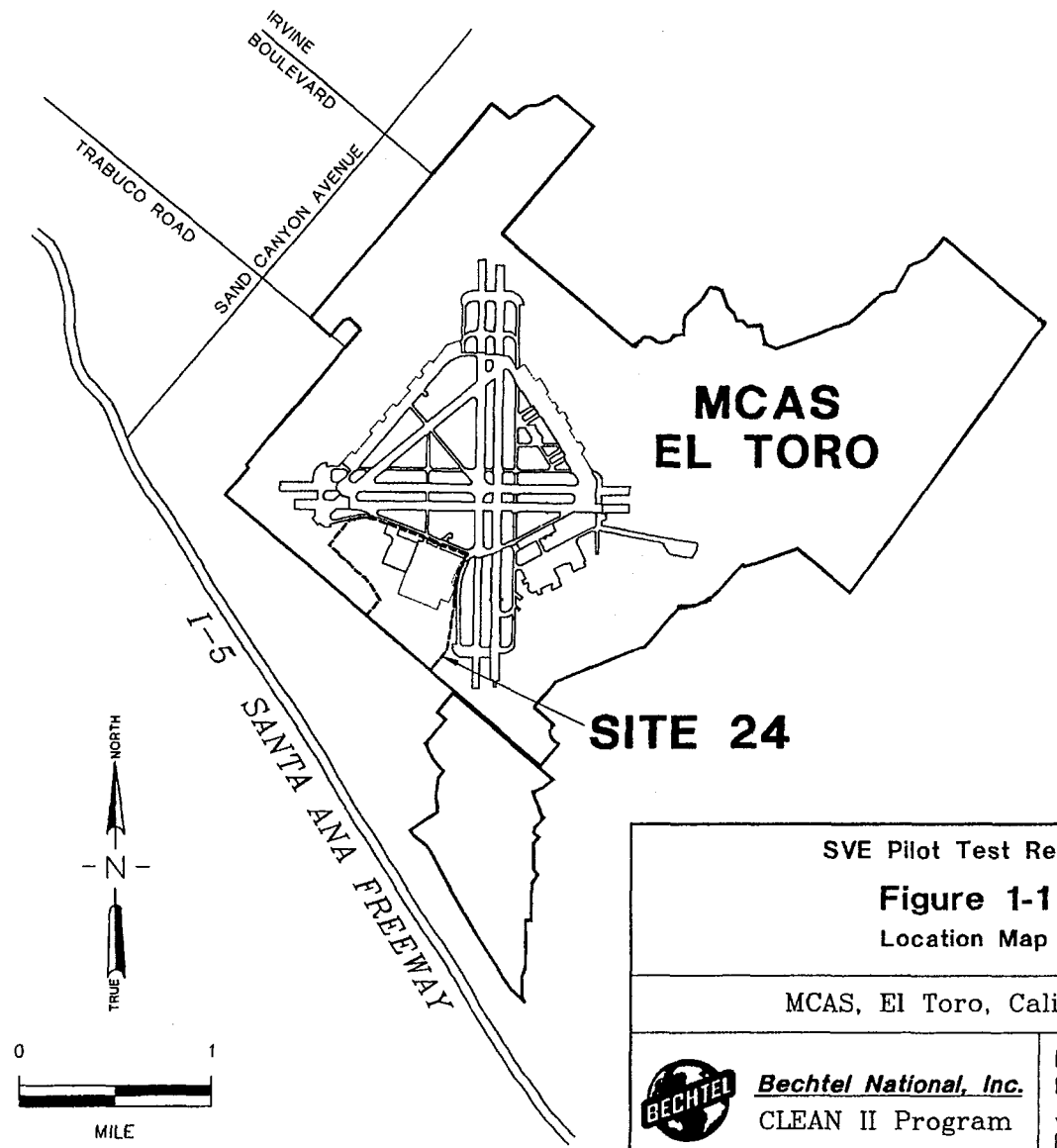
1.3 SITE DESCRIPTION

This subsection briefly describes the site. For a more complete description, please see the Phase II RI report (BNI 1996b). MCAS El Toro lies in a semiurban agricultural area in southern California, approximately 8 miles southeast of the city of Santa Ana and 12 miles northeast of the city of Laguna Beach (Figure 1-1). Land northwest of MCAS El Toro is used for agricultural purposes. The land to the south and northeast is used mainly for commercial, light industrial, and residential purposes. Surrounding residential areas are the cities of Lake forest, Irvine, and Laguna Hills.

Site 24 encompasses approximately 200 acres in the southwestern quadrant of MCAS El Toro (Figure 1-2). The site slopes to the west from an elevation of about 320 feet above mean sea level (MSL) at the intersection of the east-west and north-south runways to approximately 240 feet above MSL near the end of the east-west runway. The site includes multiple buildings that are used for aircraft maintenance and flight-operations support, supply and storage facilities, and a limited amount of administrative office space. The aircraft maintenance facilities (Buildings 295, 296, and 297) dominate the eastern portion of the site. Regional VOC groundwater contamination, consisting primarily of trichloroethene (TCE) extends from Site 24 to approximately 3 miles west of the Station boundary.

The Phase II RI demonstrated that VOC-contaminated soil beneath Site 24 is the source of the regional VOC groundwater contamination (BNI 1996b). The highest reported





SVE Pilot Test Report

Figure 1-1

Location Map

MCAS, El Toro, California

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concentrations of TCE in soil gas are beneath Buildings 296 and 297. The SVE pilot test was conducted at the north end of Building 297.

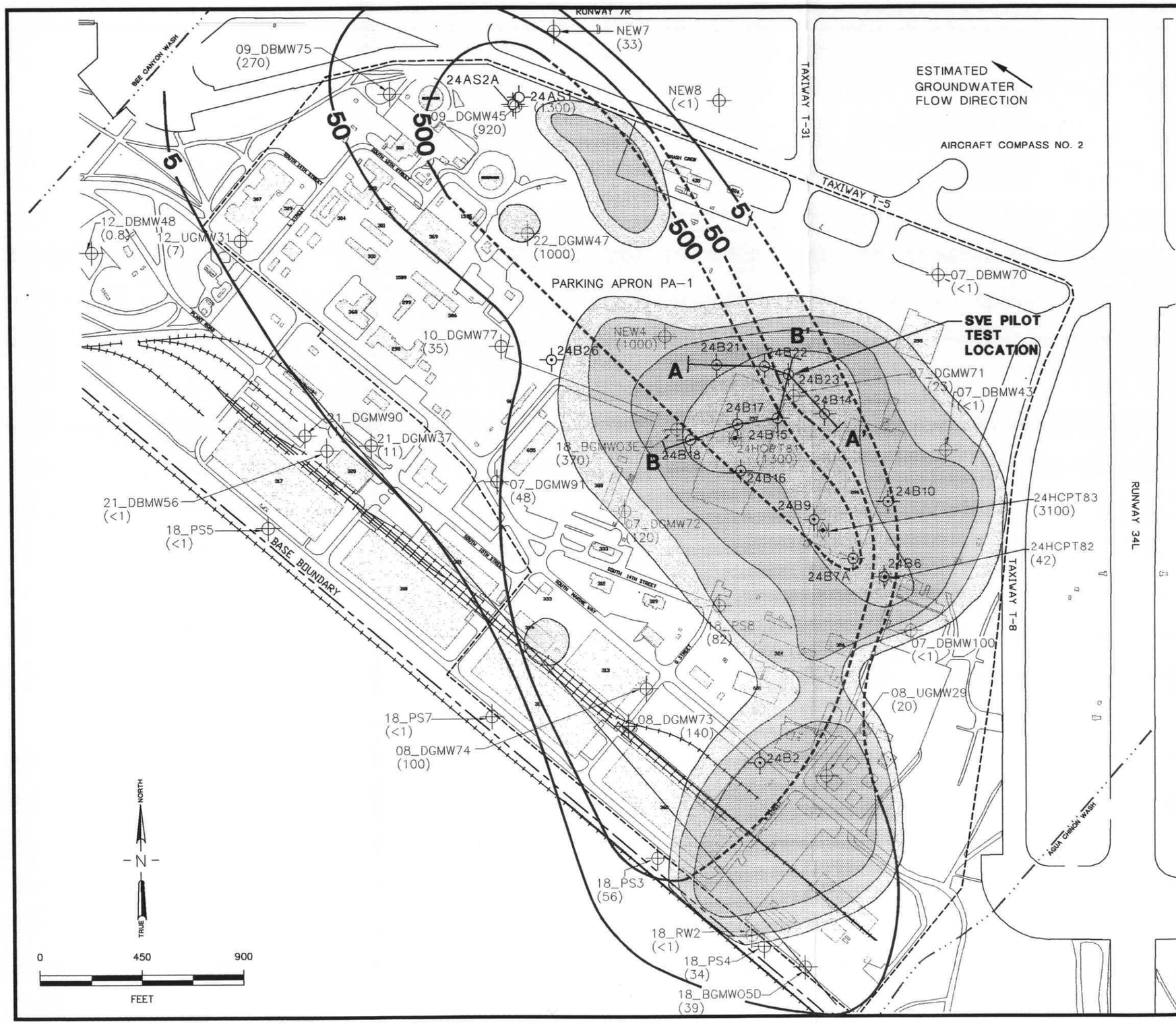
1.4 REMEDIAL TECHNOLOGY DESCRIPTION

SVE technology is a U.S. EPA-approved presumptive remedy for sites with VOC-contaminated soil (U.S. EPA 1993). It is a remedial technique that removes contaminants from unsaturated soil by inducing air flow through the soil matrix. In soil contaminated with VOCs, an equilibrium is established among the dissolved, adsorbed, and vapor phases. SVE works by drawing relatively cleaner air into the soil, thereby upsetting the equilibrium between phases. To reestablish the equilibrium, a mass transfer of VOCs occurs from the dissolved and adsorbed phases to the vapor phase. Once in the vapor phase, the SVE equipment removes VOC vapor from the soil. There are a number of treatment options for the discharged soil gas, including carbon adsorption, and catalytic or thermal oxidation.

1.5 SOIL VAPOR EXTRACTION PILOT TEST OBJECTIVES

The SVE pilot test objectives included the following (BNI 1996a):

- evaluating the feasibility of using SVE to remove VOCs from contaminated soil beneath Site 24;
- evaluating SVE radius of influence;
- estimating the mass of VOCs removed from the contaminated soil during the pilot test;
- estimating the VOC removal versus time and overall effectiveness of SVE at the test site;
- assessing soil gas for parameters such as VOCs, oxygen, and carbon dioxide;
- establishing operating parameters to optimize SVE performance; and
- collecting sufficient data to estimate the cost of full-scale operation.



LEGEND

- BUILDING OR PAD
- STREAMS OR WASH
- IMPROVED ROADS
- RAILROAD
- PHASE II UNIT BOUNDARY
- BASE BOUNDARY
- A — A' GEOLOGIC CROSS-SECTION A-A'
- —500— ISOCONCENTRATION CONTOUR OF TCE IN GROUNDWATER (µg/L) (FROM SAMPLES COLLECTED JULY 1992 TO JANUARY 1993. RESULTS IN TABLE C-1 PHASE I T.M.)
- --500-- REDEFINED ISOCONCENTRATION CONTOUR OF TCE IN GROUNDWATER (µg/L) (FROM PHASE II RI SAMPLES COLLLECTED OCTOBER 1995 TO JANUARY 1996)

SOIL GAS CONCENTRATIONS NEAR WATER TABLE:

- 1.0 TO 5.0 µg/L TCE
- 5.0 TO 50.0 µg/L TCE
- 50.0 TO 500.0 µg/L TCE
- GREATER THAN 500.0 µg/L TCE

EXISTING:

- MONITORING WELL (WITH HIGHEST TCE CONCENTRATION IN µg/L)
- AIR SPARGING WELL
- HYDROPUNCH SAMPLE (WITH HIGHEST TCE CONCENTRATION IN µg/L)
- SOIL VAPOR EXTRACTION WELL

SVE Pilot Test Report

Figure 1-2

Site Plan

MCAS, El Toro, California

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Section 2
FIELD METHODS AND PROCEDURES

This section describes the field methods and procedures that were used to conduct the SVE pilot test.

2.1 SOIL VAPOR EXTRACTION SYSTEM DESCRIPTION

The SVE system consisted of a trailer-mounted Sutorbilt Legend™ Model 4LP blower, 15-horsepower electric motor, moisture knockout pot, and 200-pound activated-carbon canister filters. The SVE system as-built diagram is shown on Figure 2-1. The blower was equipped with a dilution air valve to draw clean air into the blower inlet, and a recirculation system to recirculate the blower exhaust to the blower inlet. Pressure, temperature, and airflow gauges were used to monitor the system performance.

Vadose well 24SVE1 was connected to the blower using 2-inch-diameter polyvinyl chloride (PVC) pipe and flexible tubing. Vacuum and airflow were monitored at the wellhead. Soil gas extracted from vadose well 24SVE1 passed through a moisture knockout pot before entering the blower. A sample port to monitor the soil gas VOC concentration was installed upstream of the moisture knockout pot. Soil gas exiting the blower was treated using nine 200-pound activated-carbon filters connected as shown in Figure 2-1. Sample ports to monitor temperature, pressure, and VOC concentration are also shown on Figure 2-1.

2.2 SOIL VAPOR EXTRACTION SYSTEM PERFORMANCE MONITORING

This subsection describes the methods used to monitor the SVE system performance.

2.2.1 Wellhead Pressure

Negative pressure was measured at the wellhead using a 2-inch-diameter pressure gauge with a 0- to 60-inch water scale. Pressure at the wellhead was compared to pressure at the blower to estimate head loss due to piping and the moisture knockout pot.

2.2.2 Volumetric Airflow

Airflow was measured at the wellhead using a King™ variable-area flowmeter with a zero to 245 cubic feet per minute (cfm) scale.

2.2.3 Soil Gas Sampling

Soil gas samples were collected from a sample port near the wellhead, upstream of the moisture knockout pot and blower. To collect the soil gas sample, a 1-liter Tedlar bag was placed inside a vacuum chamber and connected to the sample valve using a new length of Teflon tubing. Negative pressure was then applied to the vacuum chamber with

a portable vacuum pump. The sample valve was then opened for approximately 45 seconds to fill the Tedlar bag. Figure 2-2 illustrates the vacuum chamber used for sampling.

2.2.4 Soil Gas Temperature

Soil gas temperature was monitored with a direct-reading temperature gauge both upstream and downstream of the blower. Volumetric airflow was adjusted to maintain the temperature exiting the blower. In general, the effluent soil gas temperature was maintained below 200 degrees Fahrenheit. These data are included in Appendix A.

2.2.5 Carbon Canister Pressure

The 200-pound activated-carbon canisters used during the pilot test are rated for a maximum pressure of 12 pounds per square inch. Three carbon canisters were connected in parallel, and three of these canister sets were connected in series to form a nine-canister treatment unit (Figure 2-1). Pressure monitoring ports were installed at each canister and monitored with a 2-inch-diameter pressure gauge.

2.2.6 Effluent Soil Gas Sampling

Soil gas monitoring ports were installed at the exhaust of each carbon canister and at the exhaust stack of the final carbon canister. Soil gas samples were collected directly by connecting 1-liter Tedlar bags to the sample ports with a new length of Teflon tubing. The vacuum chamber was not required for sampling because soil gas at the carbon canisters and the exhaust stack was under positive pressure. Carbon canisters were replaced when breakthrough was indicated.

2.2.7 Remote Vacuum Monitoring

Remote vacuum was measured at nearby vadose wells and piezometers using Magnehelic™ gauges with scales from zero to 1 inch of water, and zero to 5 inches of water. Before the pilot test was initiated, the vadose wells were fitted with slipcaps with a stopcock valve. The slipcaps were placed over the vadose well openings and sealed with a silicone sealant. The stopcock valves were threaded onto the slipcaps and sealed with Teflon tape. With the stopcock valve closed, the vacuum in the vadose well remained stabilized. The remote vacuum measurement was taken by connecting the vacuum gauge to the stopcock valve, opening the valve, and recording the measurement. By keeping the vadose wells sealed, remote vacuum measurements could be collected relatively quickly.

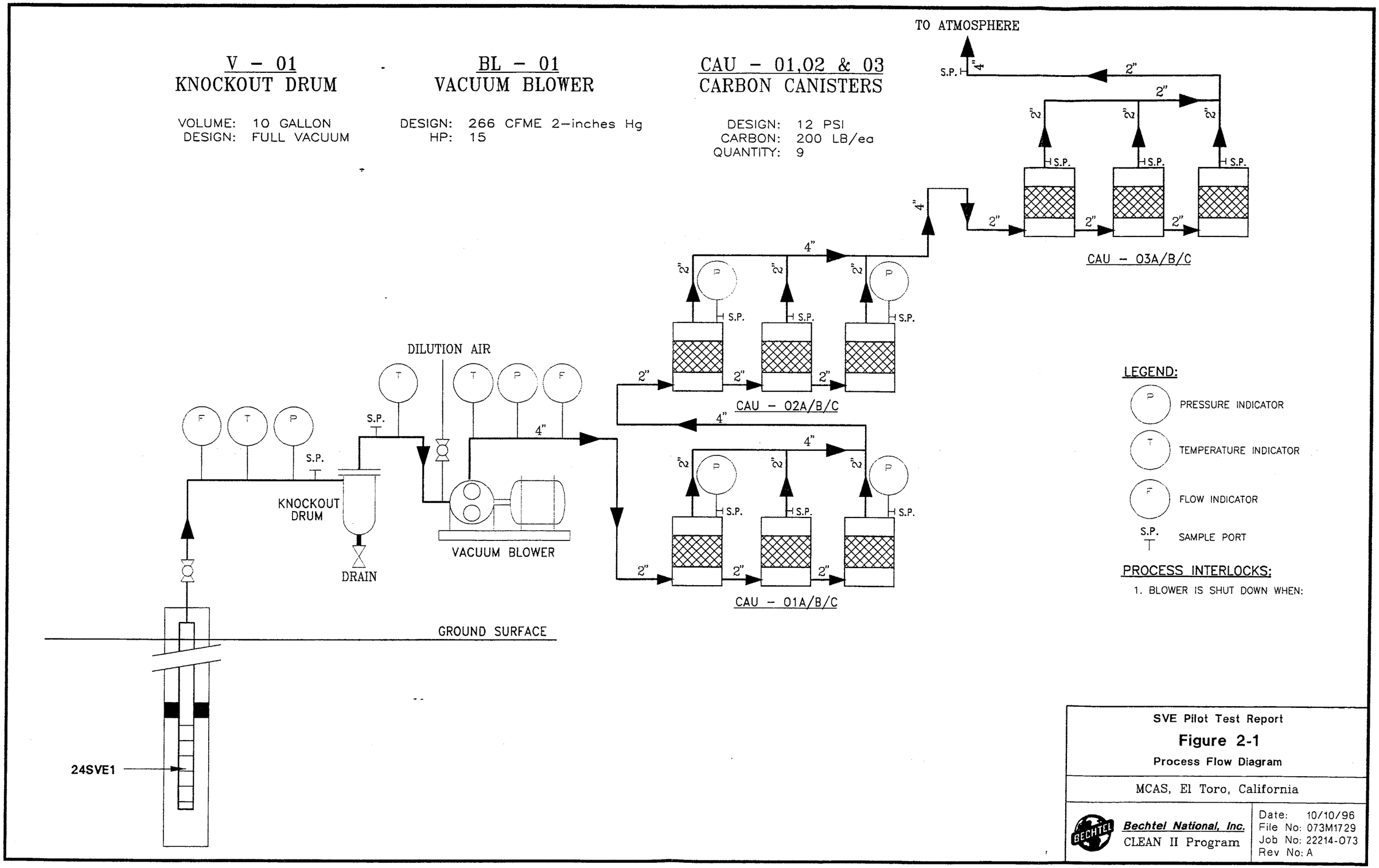
V - 01
KNOCKOUT DRUM
VOLUME: 10 GALLON
DESIGN: FULL VACUUM
BL - 01
VACUUM BLOWER
DESIGN: 266 CFME 2-inches Hg
HP: 15
CAU - 01,02 & 03
CARBON CANISTERS
DESIGN: 12 PSI
CARBON: 200 LB/ea
QUANTITY: 9
TO ATMOSPHERE
CAU - 03A/B/C
CAU - 02A/B/C
CAU - 01A/B/C
DILUTION AIR
KNOCKOUT DRUM
DRAIN
VACUUM BLOWER
GROUND SURFACE
24SVE1
S.P.
LEGEND:
PRESSURE INDICATOR
TEMPERATURE INDICATOR
FLOW INDICATOR
SAMPLE PORT
PROCESS INTERLOCKS:
1. BLOWER IS SHUT DOWN WHEN:
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Figure 2-1
Process Flow Diagram
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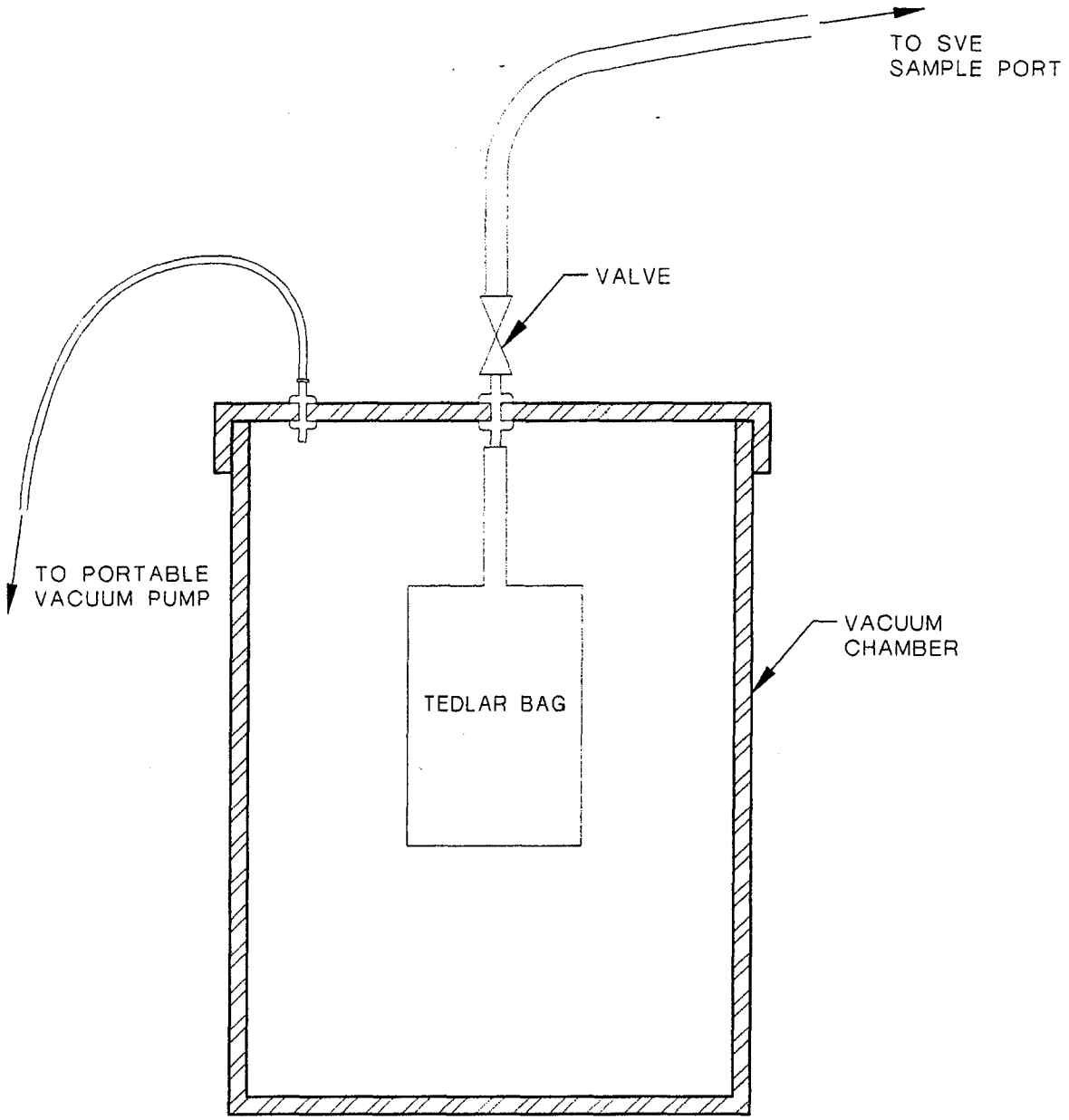

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Figure 2-2

Vacuum Chamber Used to Collect Soil Gas Samples

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Section 3
SOIL CONDITIONS

This section provides a description of physical and chemical soil conditions relative to the SVE pilot test.

3.1 PHYSICAL SOIL PROPERTIES

Soil encountered beneath Site 24 generally consists of a matrix of Holocene Age fine overbank deposits and coarse-grained stream channel deposits. These soils are alluvial fan deposits generated from the Santa Ana Mountains to the east. At depths greater than the thickness of the vadose zone, Holocene alluvial materials conformably overlie Pleistocene Age sediments.

The vadose zone is approximately 110 feet thick in the area of the pilot test. Soil conditions are characterized predominantly by sand and silty sand interbedded with silt and clay. Geologic cross sections are included as Figures 3-1 and 3-2. For illustration purposes, soil types were divided into coarse-grained (silty sand, sand, and gravely sand) and fine-grained soil (silts and clays). The cross sections demonstrate that the vadose zone in the pilot test area is generally coarse-grained. Coarse-grained soil is relatively permeable to air and facilitates the operation of SVE systems by allowing greater airflow in the vadose zone. A relatively clean sand layer above the water table can be seen in boring logs from soil borings 24B15, 24B18, 24B21, 24B22, and 24B23. This layer was targeted for vapor extraction well screens. Higher in the stratigraphic profile, other coarse-grained intervals were also screened as vapor extraction wells or soil gas piezometers. The SVE wells and piezometers provided remote vacuum-monitoring points during the SVE pilot test.

3.2 CHEMICAL SOIL CONDITIONS

TCE soil gas results are presented on the geologic cross-sections (Figures 3-1 and 3-2) and in a three-dimensional format in Figure 3-3. In Figure 3-3, the shallow layer (0 to 30 feet) shows the Phase I soil gas results (Jacobs Engineering 1994). The intermediate and deep layers are based on results from the Phase II RI (BNI 1996). The samples included for contouring in the deep layer are those located closest to the water table (within 26 feet). The intermediate layer is composed of samples ranging from 32 feet to 91 feet below ground surface (bgs). This approach was used to account for the variable depth to the water table at the site (85 to 115 feet bgs). In this way, all the sample locations were selected based on their distance from the water table. Where multiple sample results were available for a given location, the highest concentration was used.

Thirteen samples contained TCE in soil gas at concentrations greater that 500 micrograms per liter (µg/L). The highest TCE soil gas concentration (6,120 µg/L) was located just north of Building 297 at 105 feet bgs (approximately 10 feet above the water table). Soil boring 24B23 was drilled near this location and vadose well 24SVE1 was installed. This well (24SVE1) was used as the extraction well during the SVE pilot test.

In general, soil sampling results from the Phase II RI were consistent with the Phase I RI. The reported concentrations of TCE in soil are relatively low in frequency and concentration. This is to be expected, due to the fact that TCE has a relatively high vapor pressure and tends to volatilize readily in the vadose zone. Furthermore, the soil beneath Site 24 is very low in total organic carbon (BNI 1996). TCE tends to partition into the organic carbon fraction of the soil; thus, low levels of organic carbon do not promote the adsorption of TCE in the soil. Soil sample analytical results for TCE are shown on the geologic cross sections (Figures 3-1 and 3-2).

Based on the analysis presented in the draft Phase II FS for Site 24, approximately 5,700 pounds of TCE are estimated to be present in the vadose zone. The mass of TCE residing in the soil gas phase is estimated to be approximately 1,290 pounds, 3,550 pounds TCE dissolved in soil moisture, and between 80 and 800 pounds of TCE adsorbed to the soil. In general, SVE is facilitated at sites with a major fraction of the VOC in the vapor and dissolved phases. TCE mass transfer occurs relatively quickly from the dissolved phase to the vapor phases. This enhances the ability of SVE to remove TCE from the vadose zone. Mass transfer from the adsorbed phase to the dissolved phase is relatively slower, and this, combined with extraction of VOCs from diffusion-limited low permeability zones tends, to slow the progress of SVE.

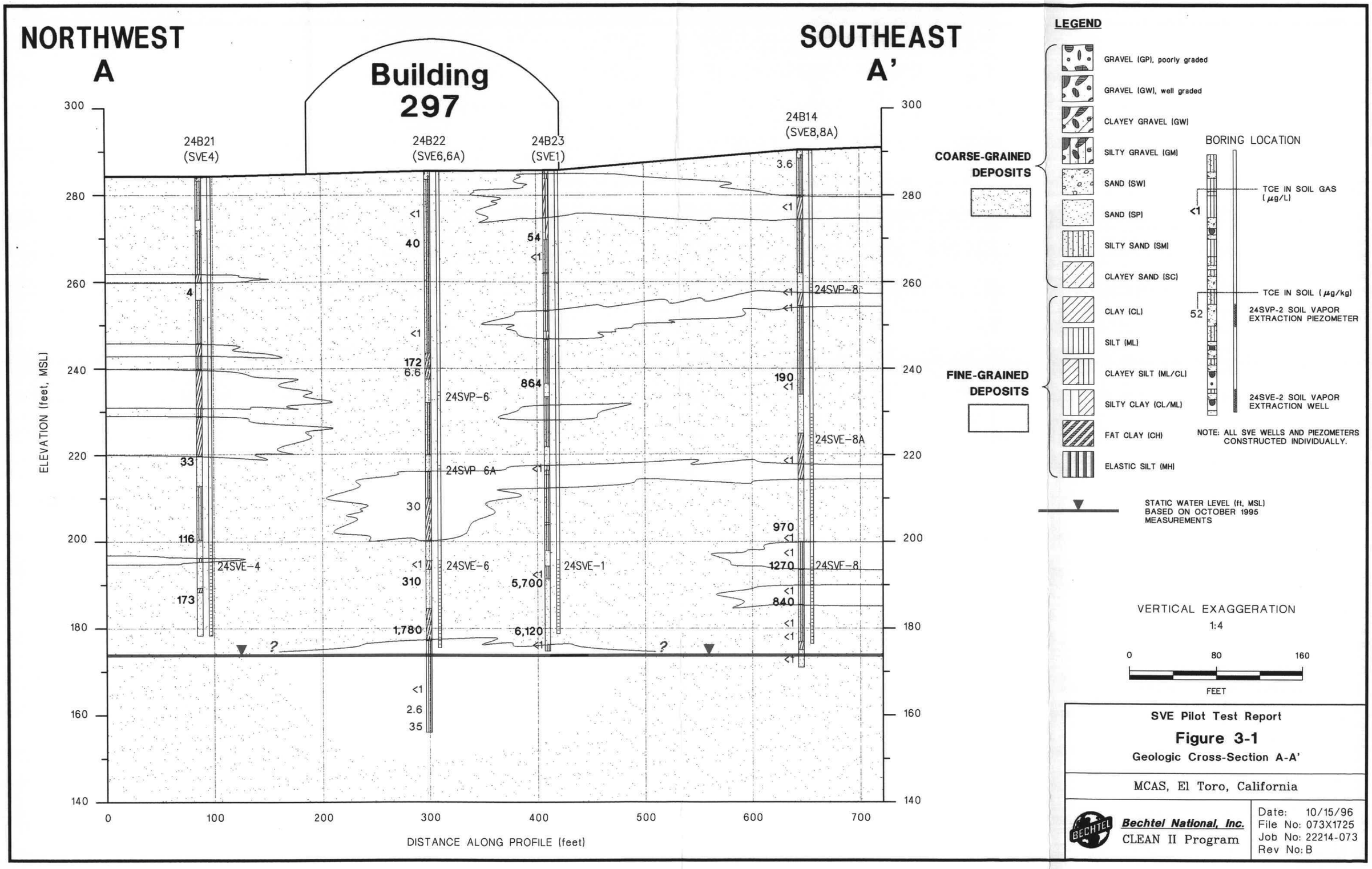

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Figure 3-1

Geologic Cross-Section A-A'

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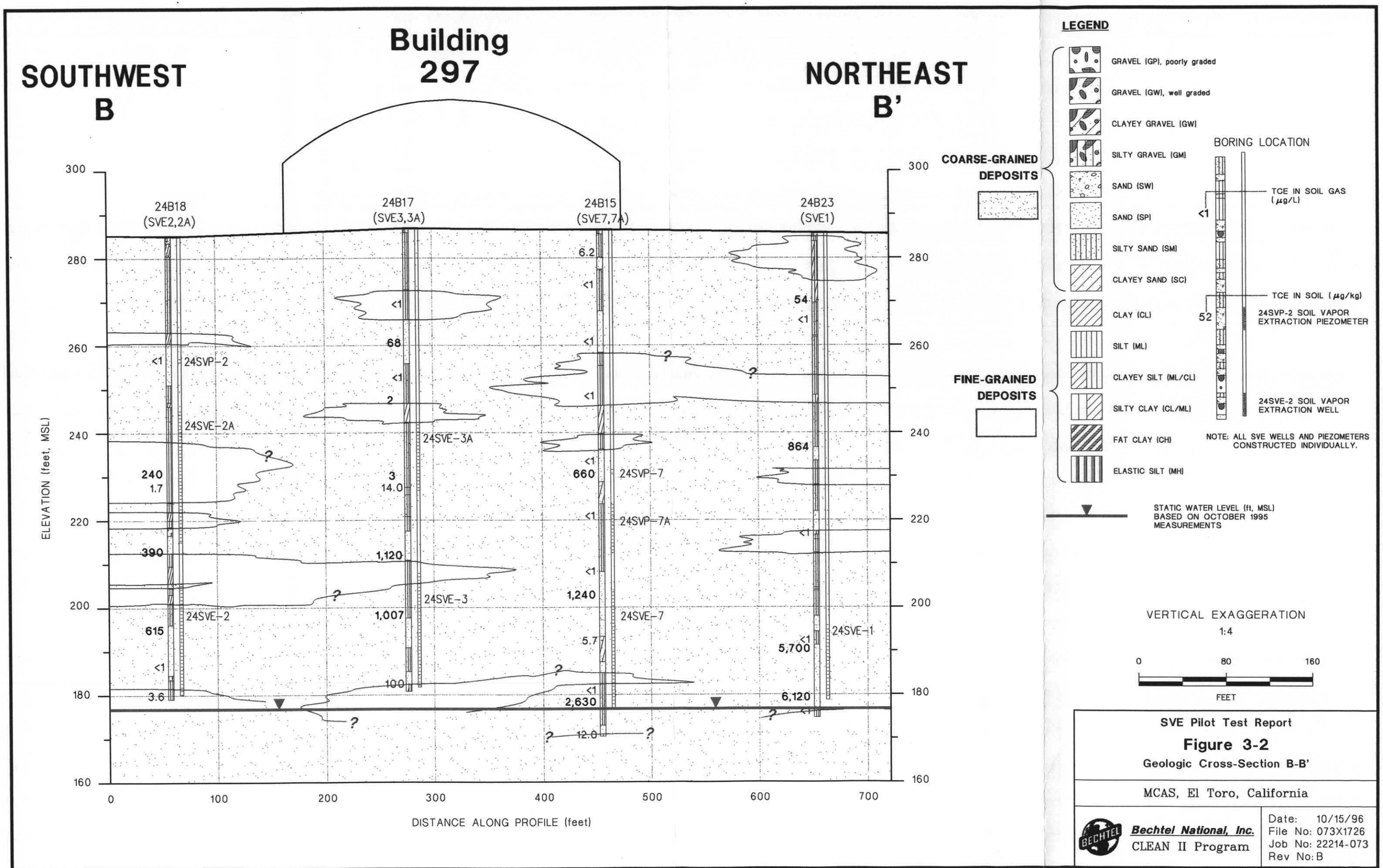

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Figure 3-2

Geologic Cross-Section B-B'

MCAS, El Toro, California

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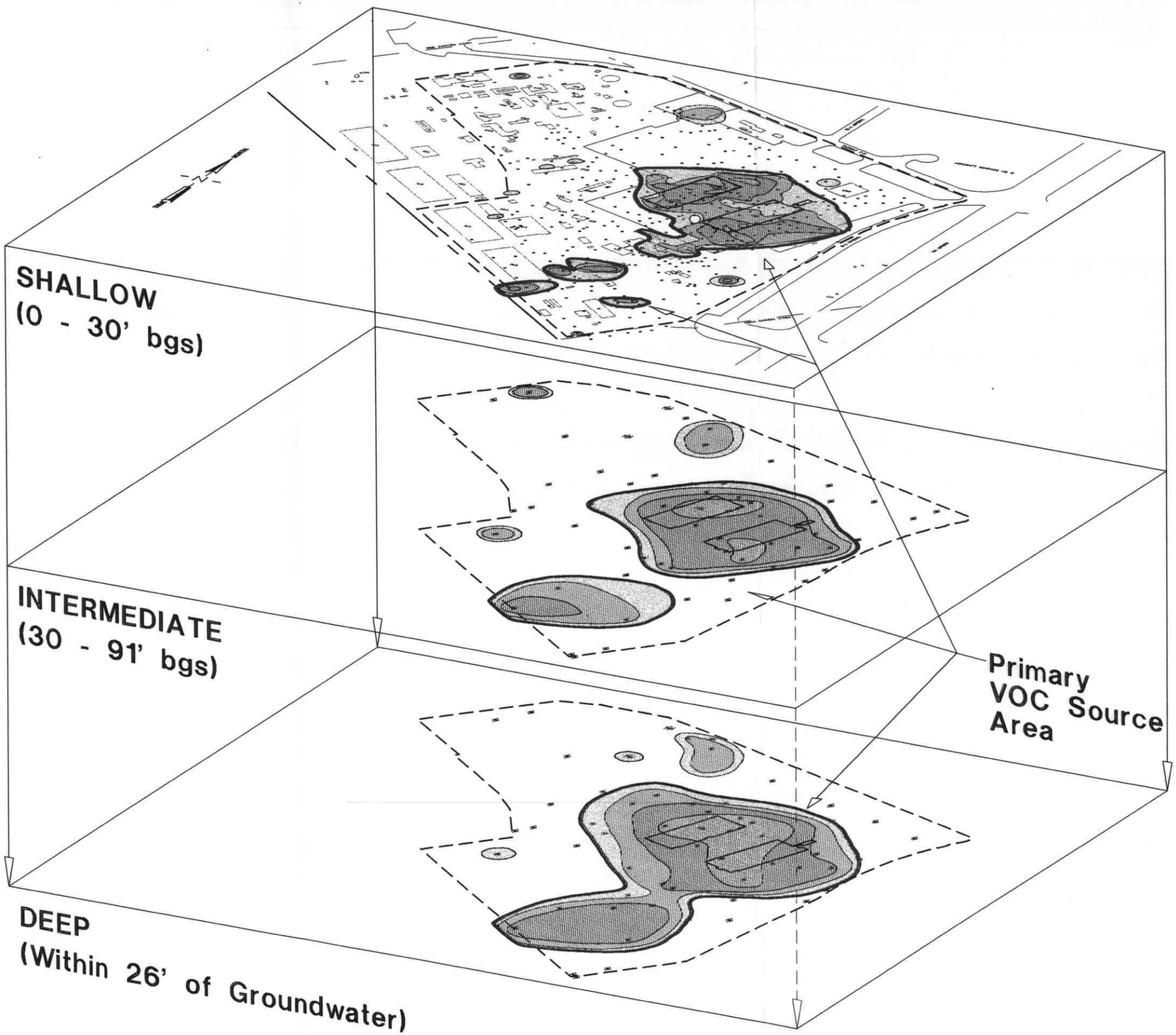

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- 313 — BUILDING OR PAD
- STREAMS OR WASH
- PHASE II UNIT BOUNDARY
- FENCE
- BASE BOUNDARY
- PHASE I SOIL GAS SAMPLE LOCATION
- PHASE II SOIL GAS SAMPLE LOCATIONS

SOIL GAS CONCENTRATIONS

- 1.0 TO 5.0 µg/L
- 5.0 TO 50.0 µg/L
- 50.0 TO 500.0 µg/L
- GREATER THAN 500.0 µg/L
- PRIMARY SOURCE AREA

SVE Pilot Test Report
Figure 3-3
Soil Gas Results - TCE
Site 24

MCAS, El Toro, California

Bechtel National, Inc.
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Section 4
SOIL VAPOR EXTRACTION PILOT TEST RESULTS

This section presents the results of the SVE pilot test. To evaluate the implementability of SVE to remove VOCs from contaminated soil beneath Site 24, the radius of influence, pressure-flow relationship, and VOC mass-removal rate were evaluated.

4.1 SOIL VAPOR EXTRACTION PILOT TEST RADIUS OF INFLUENCE

The radius of influence for well 24SVE1 was estimated by recording the remote vacuum at several nearby SVE wells and preparing a semilog graph of remote-well vacuum versus distance from the extraction well. A straight line was fitted through the data points, and the distance at which the remote-well vacuum is projected to be equal to one percent of the applied vacuum was considered the effective SVE radius of influence. Figure 4-1 shows remote-well vacuum versus distance for an applied pressure of -30 inches of water at vadose well 24SVE1. Based on these data, a radius of influence of approximately 280 feet is estimated. The semilog graph of remote-well vacuum versus distance shown on Figure 4-1. Table 4-1 summarizes the data used to prepare the graph.

Table 4-1
Remote-Well Vacuum Measurements

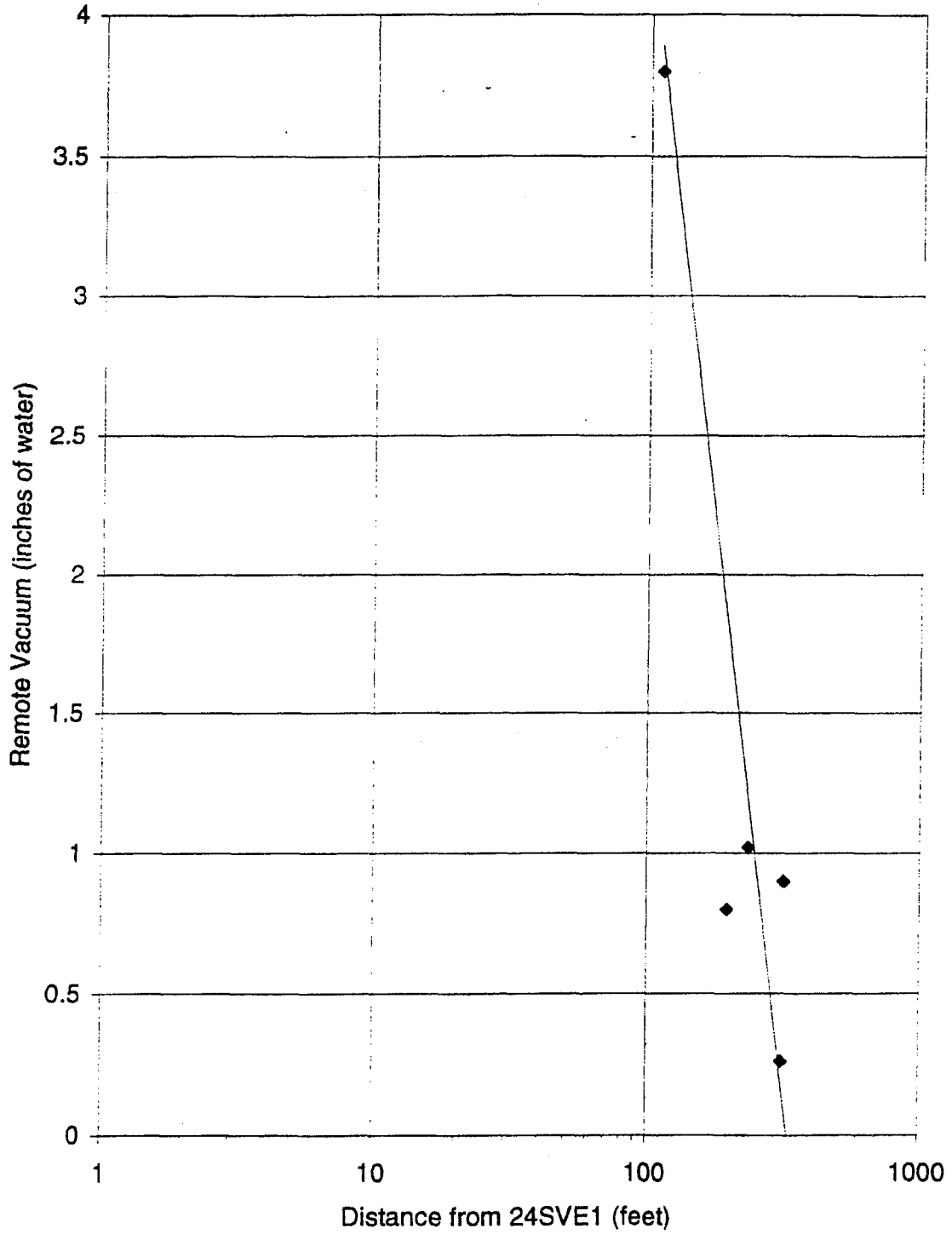
Remote Well Number	Distance from 24SVE1 (feet)	Vacuum (inches of water)
24SVE3	314	0.26
24SVE4	319	0.90
24SVE6	110	3.8
24SVE7	196	0.80
24SVE8	236	1.02

Note: 30 inches of water negative pressure applied at vadose well 24SVE1.

The maximum pressure applied to vadose well 24SVE1 was -30 inches of water, which produced a volumetric airflow of approximately 250 cfm. Appendix A contains remote-well vacuum measurements collected during the SVE step-test that correspond to smaller applied pressures at vadose well 24SVE1. These smaller applied pressures are characterized by smaller volumetric airflow and radius of influences.

4.2 VOLATILE ORGANIC COMPOUND MASS REMOVAL

After collecting data to estimate the radius of influence, the SVE pilot test was continued at an applied pressure of -28 inches of water and airflow of approximately 200 cfm. The volumetric airflow was reduced to increase the soil gas residence time in the activated-carbon filters thereby increasing their efficiency. Soil gas samples were submitted for analyses to monitor soil gas concentration over time (Table 4-2). Figure 4-2 presents a



SVE Pilot Test Report

Figure 4-1

Estimated Radius of Influence - 24SVE1

MCAS, El Toro, California

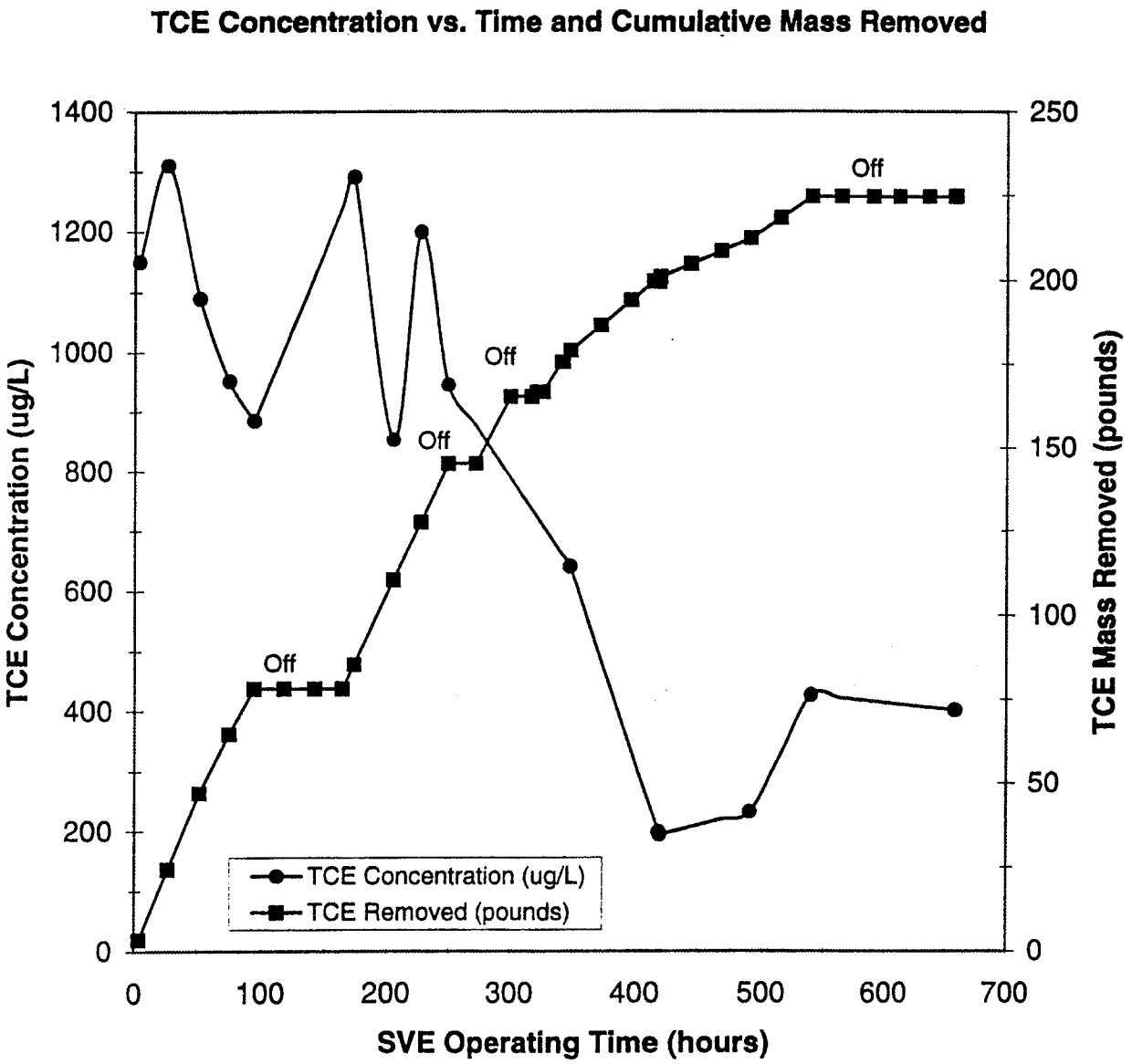
Bechtel National, Inc.
CLEAN II Program

Date: 10/14/96
File No: -
Job No: 22214-073
Rev No: A

Table 4-2
Extracted Soil Gas Analytical Results[a]

Sample No.	Date	1,1,2-TCA[b]	1,1-DCE[c]	trans-1,2-DCE[d]	1,1-DCA[e]	cis1,2 DCE[f]	Chloroform	Carbon Tectrachloride	TCE[g]	PCE[h]
73W2355 01	6/10/96	453	293	ND[i] < 1	6	2	2	4	1,150	17
73W2356 01	6/11/96	516	288	2	ND < 50	2	2	3	1,310	14
73W2357 01	6/12/96	374	259	ND < 1	3	ND < 1	ND < 1	2	1,090	5
73W2358 01	6/13/96	277	178	ND	ND < 10	ND < 10	ND	ND < 10	951	ND < 10
73W2360 01	6/14/96	262	173	ND	ND < 50	ND	ND	ND < 50	884	ND < 50
73W2362 01	6/19/96	214	214	ND	ND < 10	ND	ND	ND < 10	853	ND < 10
73W2364 01	6/20/96	98	223	ND	ND	ND	ND	ND	1,199	ND
73W2365 01	6/21/96	63	159	ND	ND	ND	ND	ND	945	ND
73W2366 01	6/25/96	69	109	ND	1	ND	ND	ND < !	641	2
73W2368 01	6/28/96	30	30	ND	ND < 5	ND	ND	ND	194	ND < 5
73W2370 01	7/1/96	87	91	ND	ND	ND	ND	ND	232	ND < 5
73W2371 01	7/3/96	85	69	ND	ND	ND	ND	ND	427	ND <50
73W2373 01	7/8/96	ND < 50	72	ND	ND	ND	ND	ND	402	ND < 50

Notes:
a Sample Location: Well No 24SVE 1
Screen Interval: 91-109
Analysis: U.S. EPA Method 8021
b 1,1,2-TCA– 1,1,2-trichlorotrifluoroethane
c 1,1-DCE – 1,1-dichloroethene
d trans-1,2-DCE – trans1,2-dichloroethene
e 1,1-DCA – 1,1-dichloroethane
f cis-1,2-DCE – cis-1,2-dichloroethene
g TCE – trichloroethene
h PCE – tetrachloroethene
i ND – not detected



SVE Pilot Test Report

Figure 4-2

TCE Concentration vs. Time and Cummulative Mass Removed

MCAS, El Toro, California

Bechtel National, Inc.
CLEAN II Program

Date: 10/15/96
File No: -
Job No: 22214-073
Rev No: A

Table 4-3
Summary of Soil Vapor Extraction Pilot Test Results

Extraction Well 24SVE1	VOC MASS REMOVED (pounds) Trichloroethene	1,1-Dichloroethene	Freon 113[a]	Other VOCs
Airflow: 200 cfm[b] Applied Pressure: -28 inches water Total Duration: 425.44 hours	225	50	55	Negligible

Notes:
[a] Freon 113 – 1,1,2-trichlorotriflurorethane
[b] *cfm – cubic feet per minute*

graph of TCE concentration versus time. The mass of VOCs removed from the extraction well was estimated by multiplying the airflow rate, reference time period, and average VOC concentration during the time period. The data supporting the mass removal calculations are included in Appendix A. Laboratory analytical reports are included in Appendix B. Table 4-3 summarizes the results of the SVE pilot test.

Table 4-4 summarizes the VOC analytical results from effluent (treated) soil gas samples. The sample collected on 14 June indicates that breakthrough was occurring through the activated-carbon filters. The SVE system was turned off on 14 June and restarted 17 June with new carbon canisters. At this time the filtration system was upgraded from six carbon canisters to nine, as shown in Figure 3-1. No further breakthrough was observed. Twenty-one 200-pound carbon canisters were used. Dates of carbon canister change-out are included in Appendix A.

Table 4-4
Treated Soil Gas Analytical Results

Time	Date	Sample No.	Analysis	1,1,2-TCA[a]	1,1-DCE[b]	trans-1,2-DCE[c]	1,1-DCA[d]	cis-1,2-DCE[e]	Chloroform	Carbon Tetrachloride	TCE[f]	PCE[g]
10553	6/14/96	73W2359 01	8021	997	595	ND[h] <1	ND <50	ND <1	ND <1	ND <50	ND <50	ND <50
1450	6/25/96	73W2367 01	8021	ND <1	ND <1	ND <1	ND <1	ND <1	ND <1	ND <1	ND <1	ND <1
1350	6/28/96	73W2369 01	8021	ND <1	ND <1	ND <1	ND <1	ND <1	ND <1	ND <1	ND <1	ND <1

Notes:
[a] 1,1,2-TCA – 1,1,2-trichlorotrifluoroethane
[b] 1,1-DCE – dichloroethene
[c] trans-1,2-DCE – trans-1,2-dichloroethane
[d] 1,1-DCA – dichloroethene
[e] cis-1,2-DCE – cis-1,2-dichloroethene
f TCE – trichloroethene
[g] PCE – tetrachloroethene
[h] ND – not detected

Section 5
CONCLUSIONS AND RECOMMENDATIONS

This section presents the conclusions and recommendations based on the data collection and analysis conducted during the Phase II RI and SVE pilot test.

5.1 CONCLUSIONS

Based on a review of Site 24 boring logs, soil gas analytical results, and SVE system performance monitoring, the following conclusions can be made:

- the vadose zone in the area of Building 297 is generally coarse-grained and facilitates airflow to the SVE system;
- vadose well 24SVE1 produced a radius of influence of approximately 280 feet when operating at 250 cfm and a pressure of -30 inches of water;
- TCE was withdrawn from vadose well 24SVE1 initially at a rate of approximately 20 pounds per day and reduced to approximately 5 pounds per day after 19 days of operation;
- approximately 225 pounds of TCE were removed over the duration of the pilot test;
- other VOCs with significant mass removal were 1,1-dichloroethene at 50 pounds and 1,1,2-trichlorotrifluoroethane (Freon 113) at 55 pounds;
- a system of nine 200-pound activated-carbon canisters provided adequate filtration before discharge of the soil gas to the atmosphere (some carbon canister change-out was required);
- twenty-one 200-pound carbon canisters were used to filter soil gas prior to discharge to the atmosphere;
- SVE is an implementable remedial technology at Site 24.

5.2 RECOMMENDATIONS

Based on the favorable results of the SVE pilot test, the following recommendations are made:

- conduct one-day pilot tests on all existing SVE wells at Site 24 to establish pressure-airflow relationship, radius of influence, and initial VOC vapor concentrations; and
- after analyzing the one-day test results, conduct long-term pilot tests on selected wells, if appropriate.

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Section 6
REFERENCES

Bechtel National, Inc. 1995a. Final Work Plan Phase II Remedial Investigation/Feasibility Study. Marine Corps Air Station El Toro, California.

———. 1995b. Final Field Sampling Plan Phase II Remedial Investigation/Feasibility Study. Marine Corps Air Station El Toro, California.

———. 1995c. Final Data Management Plan Phase II Remedial Investigation/Feasibility Study. Marine Corps Air Station El Toro, California.

———. 1995d. Final Quality Assurance Project Plan Phase II Remedial Investigation/ Feasibility Study. Marine Corps Air Station El Toro, California.

———. 1995e. Final Investigation-Derived Waste Management Plan Phase II Remedial Investigation/Feasibility Study. Marine Corps Air Station El Toro, California.

———. 1995f. Final Site-Specific Risk Assessment Plan Supplement Phase II Remedial Investigation/Feasibility Study. Marine Corps Air Station El Toro, California.

———. 1996a. Draft Soil Vapor Extraction Pilot Test Work Plan. Marine Corps Air Station El Toro, California.

———. 1996b. Draft Final Phase II Remedial Investigation Report, Operable Unit 2A – Site 24. Marine Corps Air Station El Toro, California.

BNI. *See* Bechtel National, Inc.

DON. *See* U.S. Department of the Navy.

Jacobs Engineering. *See* Jacobs Engineering Group, Inc.

Jacobs Engineering Group, Inc. 1994. Installation Restoration Program Remedial Investigation/Feasibility Study Final Soil Gas Survey Technical Memorandum Sites 24 and 25. Irvine, California.

United States Department of the Navy. 1990. MCO P5090.2. The Environmental Compliance and Protection Manual. Commandant of Marine Corps.

———. 1992. Navy/Marine Corps Installation Restoration Manual.

———. 1994. OPNAV Instruction (OPNAVINS) 5090.1B. Environmental and Natural Resources Program Manual. Chief of Naval Operations.

U.S. EPA. *See* United States Environmental Protection Agency.

United States Environmental Protection Agency. 1988. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA. Office of Emergency and Remedial Response.

———. 1993. Presumptive Remedies: Site Characterization and Technology Selection for CERCLA Sites with Volatile Organic Compounds in Soils. Office of Solid Waste and Emergency Response.

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APPENDIX A

SOIL VAPOR EXTRACTION PILOT TEST DATA

SOIL VAPOR EXTRACTION PILOT TEST
OPERATION STATUS AND MASS REMOVAL ESTIMATON
SITE 24 MCAS EL TORO
TEST WELL 24SVE1
FLOW RATE= 200 CFM

Date/Time	Status	Cumulative Time of Operation (hours)	Time Between Monitoring (hours)	Estimated TCE Removed (pounds)	Cumulative TCE Removed (pounds)	Estimated 1,1-DCE Removed (pounds)	Cumulative 1,1-DCE Removed (pounds)	Estimated 1,1,2-TCTFA Removed (pounds)	Cumulative 1,1,2-TCTFA Removed (pounds)	Sample ID Well 24SVE 1	Sample Type	Analysis	TCE (ug/L)	1,1-DCE (ug/L)	1,1,2-TCTFA (ug/L)	Notes
6/10/96 13:53	ON	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73W2355 01	Start	na	na	na	na	
6/10/96 17:40	ON	3.78	3.78	3.48	3.48	0.82	0.82	1.37	1.37	73W2355 01	Inital	8021	1150	293	453	
6/12/96 16:23	ON	26.50	22.72	20.90	24.38	4.94	5.76	8.23	9.60	73W2356 01	Status	8021	1310	288	516	
6/12/96 17:40	ON	51.78	25.28	22.69	47.07	5.17	10.93	8.41	18.02	73W2357 01	Status	8021	1090	259	374	
6/13/96 16:50	ON	74.94	23.16	17.68	64.75	3.79	14.72	5.64	23.66	73W2358 01	Status	8021	951	178	277	
6/14/96 12:10	ON	94.27	19.33	13.27	78.02	2.54	17.25	3.90	27.55	73W2360 01	Status	8021	884	173	262	
6/14/96 12:15	OFF	94.35	0.08	0.05	78.07	0.01	17.26	0.02	27.57	na	No sample	na	na	na	na	6/14/96 turned off at 1215 because of spent carbon drums
6/15/96 0:00	OFF	94.35	24.00	0.00	78.07	0.00	17.26	0.00	27.57	na	No sample	na	na	na	na	6/15/96 SAT. waiting on carbon drums
6/16/96 0:00	OFF	94.35	24.00	0.00	78.07	0.00	17.26	0.00	27.57	na	No sample	na	na	na	na	6/16/96 SUN. waiting on carbon drums
6/17/96 13:18	ON	94.35	22.05	0.00	78.07	0.00	17.26	0.00	27.57	na	No sample	na	na	na	na	6/17/96 six new carbon drums installed, system on 1318
6/18/96 8:26	ON	103.48	9.13	7.32	85.39	2.22	19.49	2.16	29.74	73W2361 01	Status	8021	1290	437	420	
6/19/96 15:45	ON	134.80	31.32	25.10	110.49	7.63	27.11	7.43	37.16	73W2362 01	Status	8021	853	214	214	
6/20/96 14:00	ON	157.05	22.25	17.08	127.57	3.64	30.75	2.60	39.76	73W2364 01	Status	8021	1199	223	98	
6/21/96 12:00	OFF	179.05	22.00	17.64	145.21	3.14	33.89	1.32	41.08	73W236501	Status	8021	945	159	63	6/21/96 FRI. Gen/set fuel problem, off 1200
6/22/96 10:22	ON	179.05	22.37	0.00	145.21	0.00	33.89	0.00	41.08	na	No sample	na	na	na	na	6/22/96 SAT. turned on 1022
6/23/96 11:20	OFF	204.02	24.97	20.02	165.23	3.57	37.46	1.50	42.59	na	No sample	na	na	na	na	6/23/96 SUN. Gen/set. fuel problem, off at 1120
6/24/96 8:00	ON	204.02	20.67	0.00	165.23	0.00	37.46	0.00	42.59	na	No sample	na	na	na	na	off-1030, on 1700, to install six new carbon drums
6/24/96 10:30	OFF	206.52	2.50	1.48	166.72	0.25	37.71	0.12	42.71	na	No sample	na	na	na	na	
6/24/96 17:00	ON	213.02	6.50	0.00	166.72	0.00	37.71	0.00	42.71	na	No sample	na	na	na	na	
6/25/96 8:00	OFF	228.02	15.00	8.90	175.62	1.50	39.21	0.74	43.45	na	No sample	na	na	na	na	Off-1 hour, to service Gen/set.
6/25/96 9:00	ON	228.02	1.00	0.00	175.62	0.00	39.21	0.00	43.45	na	No sample	na	na	na	na	
6/25/96 14:55	ON	233.94	5.92	3.51	179.13	0.59	39.81	0.29	42.88	73W2366 01	Status	8021	641	109	69	
6/26/96 14:55	ON	257.94	24.00	7.50	186.62	1.25	41.05	0.89	43.77	na	No sample	na	na	na	na	
6/27/96 14:55	ON	281.94	24.00	7.50	194.12	1.25	42.30	0.89	44.66	na	No sample	na	na	na	na	
6/28/96 8:25	OFF	299.44	17.50	5.47	199.58	0.91	43.21	0.65	45.30	na	No sample	na	na	na	na	Off 1-hour to install three new carbon drums
6/28/96 9:30	ON	299.04	0.92	0.00	199.58	0.00	43.21	0.00	45.30	na	No sample	na	na	na	na	
6/28/96 13:45	ON	303.29	4.25	1.33	200.91	0.22	43.43	0.16	44.81	73W2368 01	Status	8021	194	30	30	
6/29/96 13:45	ON	327.29	24.00	3.82	204.73	1.09	44.52	1.05	45.86	na	No sample	na	na	na	na	
6/30/96 13:45	ON	351.29	24.00	3.82	208.56	1.09	45.61	1.05	46.91	na	No sample	na	na	na	na	
7/1/96 13:15	ON	374.79	23.50	3.74	212.30	1.06	46.67	1.03	47.94	73W2370 01	Status	8021	232	91	87	
7/2/96 13:15	ON	398.79	24.00	5.92	218.22	1.44	48.11	1.54	49.49	na	No sample	na	na	na	na	
7/3/96 15:00	OFF	424.54	25.75	6.35	224.56	1.54	49.65	5.47	54.95	73W2371 01	Status	8021	427	69	85	
7/4/96 0:00	OFF	424.54	24.00	0.00	224.56	0.00	49.65	0.00	54.95	na	No sample	na	na	na	na	Equilibration
7/5/96 0:00	OFF	424.54	24.00	0.00	224.56	0.00	49.65	0.00	54.95	na	No sample	na	na	na	na	Equilibration
7/6/96 0:00	OFF	424.54	24.00	0.00	224.56	0.00	49.65	0.00	54.95	na	No sample	na	na	na	na	Equilibration
7/7/96 0:00	OFF	424.54	24.00	0.00	224.56	0.00	49.65	0.00	54.95	na	No sample	na	na	na	na	Equilibration
7/8/96 13:10	ON	424.54	21.83	0.00	224.56	0.00	49.65	0.00	54.95	na		na	na	na	na	
7/8/96 14:06	OFF	425.44	0.90	0.28	224.84	0.05	49.69	0.03	54.98	73W2373 01	Final	8021	402	72	0	Final
TOTAL		425.44			224.84		49.69		54.98							

SOIL VAPOR EXTRACTION PILOT TEST
STEP VACUUM TEST
SITE 24 MCAS EL TORO
TEST WELL 24SVE1

Time	TEST WELL	Air Flow SCFM	Well Vac 24SVE1	Remote Well	Remote Well Induced Vac. (inches of water)	Flow (SCFH) Through Wellhead	Soil Gas Influent Temp. (F)	Blower DischargeTemp.(F)	Notes	Well No.	Sample ID	Analysis	O_2	CO_2	1,1,2-TCTFA (ug/L)	1,1-DCE (ug/L)	trans-1,2-DCE (ug/L)	1,1-DCA (ug/L)	cis-1,2-DCE (ug/L)	Chloroform (ug/L)	Carbon tectrachloride (ug/L)	TCE (ug/L)	PCE (ug/L)
Date	5/30/96																						
929	24SVE 1	250	26	24SVE 6	0.48	nr			Water in														
947		250	26	24SVE 4	0.14	nr																	
954		250	26	24SVE	0.08	nr																	
955		250	26	24SVE 8	0.08	nr																	
958		250	26	24SVE	0.04	nr																	
959		250	26	24SVE 7	0.07	nr																	
1008		250	26	24SVE 3	0.02	nr			End equip.test														
1009		250	26	24SVE	0.02	nr			START SVE														
1026	24SVE 1	100	nr	nr	nr	nr			Effluent sample	24SVE 1	73W2354 01	8021			ND	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
1035		35	nr	nr	nr	nr			Well sample	24SVE 1	73W2353 01	8021			ND	335	2	6	2	1	4	1240	13
1035		35	nr	nr	nr	nr					73W2353 02	O2	17.8 %v/v										
1035		35	nr	nr	nr	nr					73W2353 03	CO2		12.1 %v/v									
1230	24SVE 1	225	30		nr	nr		180	Vac. meter														
1243		225	30	24SVE 6	3.8	nr			repaired														
1244		225	30	24SVP 6	2.2	nr																	
1245		225	30	24SVP	2	nr																	
1247		225	30	24SVE 4	0.9	nr																	
1250		225	30	24SVE 3	0.26	nr																	
1252		225	30	24SVE	0.16	nr																	
1257		225	30	24SVE 7	0.8	nr																	
1259		225	30	24SVE	0.97	nr																	
1300		225	30	24SVP 7	0.8	nr																	
1306		225	30	24SVE 8	1.02	nr																	
1308		225	30	24SVE	0.9	nr																	
1311		225	30	24SVP 8	0.84	nr			Start														
1315	24SVE 1	175	24	nr	nr	nr			Flux/neg.														
1339		175	24	24SVE 6	3.8	22			Vac. flow,														
1341		175	24	24SVP	2.4	1			read as SCFH														
1342		175	24	24SVP 6	2.4	0.75																	
1344		175	24	24SVE 4	0.76	5																	
1349		175	24	24SVE 3	0.17	0																	
1351		175	24	24SVE	0.08	0																	
1355		175	24	24SVE 7	0.7	0.8																	
1356		175	24	24SVE	0.82	1.7																	
1358		175	24	24SVP 7	0.66	1.8																	
1403		175	24	24SVE 8	0.83	3.5																	
1405		175	24	24SVE	0.7	3.7																	
1408		175	24	24SVP 8	0.64	0.3																	
1415	24SVE 1	100	18	nr	nr	nr		162															
1432		100	18	24SVE 6	2.7	14.5																	
1433		100	18	24SVP 6	1.8	0.55																	
1435		100	18	24SVP	1.7	0.8																	
1441		100	18	24SVE 4	0.52	1																	
1447		100	18	24SVE 3	0.1	0																	
1450		100	18	24SVE	0.05	0																	
1457		100	18	24SVE 7	0.45	0.35																	
1459		100	18	24SVE	0.54	1																	
1501		100	18	24SVP 7	0.43	1																	
1507		100	18	24SVE 8	0.57	1																	
1509		100	18	24SVE	0.48	1																	
1511		100	18	24SVP 8	0.35	0.15																	
End	24SVE 1	100	18	nr	nr	nr			END SVE														

SOIL VAPOR EXTRACTION PILOT TEST
CONSTANT VACUUM TEST
SITE 24 MCAS EL TORO
TEST WELL 24SVE1
AIR FLOW 200 SCFM

Time	TEST WELL	Air Flow SCFM	Well Vac 24SVE1	Remote Well	Remote Well Induced Vac. (Inches of water)	Flow (SCFH) Through Wellhead	Soil Gas Influent Temp.(F)	Blower Discharge Temp (F)	Notes	Well No.	Sample ID	Analysis	O_2	CO_2	1,1,2-TCTFA (ug/L)	1,1-DCE (ug/L)	trans-1,2-DCE (ug/L)	1,1-DCA (ug/L)	cis-1,2-DCE (ug/L)	Chloroform (ug/L)	Carbon tectrachloride (ug/L)	TCE (ug/L)	PCE (ug/L)
Date	**6/10/96**																						
1353	24SVE 1	200	26	24SVE 8	0.14	nr			**START SVE**														
1356		200	26	24SVE 8A	0.1	nr			**TEST**														
1359		200	26	24SVP 8	0.13	nr			To end 7/8/96														
1410		200	26	24SVP 7	0.19	nr																	
1413		200	26	24SVE 7A	0.29	nr																	
1415		200	26	24SVE 7	0.23	nr																	
1422		200	26	24SVE 3A	0	nr																	
1424		200	26	24SVE 3	0	nr																	
1433		200	26	24SVE 4	0.29	nr																	
1443		200	26	24SVP 6	1.6	nr																	
1445		200	26	24SVP 6A	1.4	nr																	
1446		200	26	24SVE 6	3.1	nr	85	175															
1740		nr	nr	nr	nr	nr			Well sample	24SVE 1	73W2355 01	8021			453	293	ND<1	6	2	2	4	1150	17
End	24SVE 1	200	26	nr	nr	nr																	
Date	**6/11/96**																						
1449	24SVE 1	200	28	24SVE 8A	0.61	3.2	74	163															
1450		200	28	24SVE 8	0.75	2.8																	
1455		200	28	24SVP 8	0.69	nr																	
1504		200	28	24SVP 7	0.56	nr																	
1509		200	28	24SVE 7	0.5	0.55																	
1510		200	28	24SVE 7A	0.63	0.8																	
1523		200	28	24SVE 3A	0	nr																	
1525		200	28	24SVE 3	0	nr																	
1545		200	28	24SVE 4	0.38	nr																	
1554		200	28	24SVP 6A	1.6	nr																	
1557		200	28	24SVP 6	1.8	nr																	
1600		200	28	24SVE 6	3.4	10																	
1623		nr	nr	nr	nr	nr	82	160	Well sample	24SVE 1	73W2356 01	8021			516	288	2	ND<50	2	2	3	1310	14
End	24SVE 1	200	28	nr	nr	nr																	
Date	**6/12/96**																						
1638	24SVE 1	200	28	24SVP 8	0.58	0	78	168															
1640		200	28	24SVE 8	0.76	1																	
1642		200	28	24SVE 8A	0.63	1.6																	
1654		200	28	24SVP 7	0.53	nr																	
1656		200	28	24SVE 7	0.57	0.55																	
1657		200	28	24SVE 7A	0.66	0.8																	
1708		200	28	24SVE 3A	0.02	0																	
1710		200	28	24SVE 3	0.03	0																	
1721		200	28	24SVP 6A	1.5	0.9																	
1724		200	28	24SVP 6	2	0.7																	
1727		200	28	24SVE 6	3.6	20																	
1740		50	16	nr	nr	nr	78	164	Well sample	24SVE 1	73W2357 01	8021			374	259	ND<1	3	ND<1	ND<1	2	1090	5
1752		200	28	24SVE 4	0.5	1																	
End	24SVE 1	200	28	nr	nr	nr																	

SOIL VAPOR EXTRACTION PILOT TEST
CONSTANT VACUUM TEST
SITE 24 MCAS EL TORO
TEST WELL 24SVE1
AIR FLOW 200 SCFM

Time	TEST WELL	Air Flow SCFM	Well Vac 24SVE1	Remote Well	Remote Well Induced Vac. (inches of water)	Flow (SCFH) Through Wellhead	Soil Gas Influent Temp.(F)	Blower Discharge Temp (F)	Notes	Well No.	Sample ID	Analysis	O_2	CO_2	1,1,2-TCTFA (ug/L)	1,1-DCE (ug/L)	trans-1,2-DCE (ug/L)	1,1-DCA (ug/L)	cis-1,2-DCE (ug/L)	Chloroform (ug/L)	Carbon tectrachloride (ug/L)	TCE (ug/L)	PCE (ug/L)
Date	**6/13/96**																						
1547	24SVE 1	200	28	24SVP 8	0.64	nr	78	171															
1550		200	28	24SVE 8	0.8	2																	
1556		200	28	24SVE 8A	0.68	1.8																	
1604		200	28	24SVP 7	0.59	nr																	
1606		200	28	24SVE 7	0.65	0.65																	
1610		200	28	24SVE 7A	0.7	1																	
1617		200	28	24SVE 3A	0.06	nr																	
1618		200	28	24SVE 3	0.1	nr																	
1633		200	28	24SVP 6A	1.8	nr																	
1636		200	28	24SVP 6	2	nr																	
1637		200	28	24SVE 6	3.5	12																	
1650		60	16	nr	nr	nr			Well sample	24SVE 1	73W2358 01	8021			277	178	ND	ND<10	ND<10	ND	ND<10	951	ND<10
End	24SVE 1	200	28	nr	nr	nr																	
Date	**6/14/96**																						
1053	24SVE 1	200	28	nr	nr	nr			Effluent sample	24SVE 1	73W2359 01	8021			997	595	ND	ND<50	ND	ND	ND<50	ND<50	ND<50
1055		200	28	24SVP 8	0.78	nr																	
1057		200	28	24SVE 8A	0.82	2.9																	
1059		200	28	24SVE 8	0.96	2.8																	
1111		200	28	24SVE 4	0.78	2.7																	
1118		200	28	24SVP 7	0.68	nr																	
1121		200	28	24SVE 7	0.68	0.85																	
1123		200	28	24SVE 7A	0.84	1.5																	
1130		200	28	24SVE 3	0.18	nr																	
1132		200	28	24SVE 3A	0.1	nr																	
1144		200	28	24SVP 6	1.2	nr																	
1145		200	28	24SVP 6A	2	nr																	
1146		200	28	24SVE 6	3.7	11.5																	
1210		65	14	nr	nr	nr	82	140	Well sample	24SVE 1	73W2360 01	8021			262	173	ND	ND<50	ND	ND	ND<50	884	ND<50
End	24SVE 1	200	28	nr	nr	nr																	
Date	**6/17/96**																						
1558	24SVE 1	200	28	24SVE 6	2.3	12			No sample taken														
1558		200	28	24SVP 6	0.85	nr																	
1558		200	28	24SVP 6A	0.74	nr																	
1605		200	28	24SVE 4	(+)	nr																	
1612		200	28	24SVP 7	0.03	nr																	
1614		200	28	24SVE 3A	0.05	nr																	
1616		200	28	24SVE 3	0.04	nr																	
1625		200	28	24SVP 8	0.08	nr																	
1627		200	28	24SVE 8	0.18	nr																	
1628		200	28	24SVE 8A	0.11	nr																	
1635		200	28	24SVE 3	(+)	nr																	
End	24SVE 1	200	28	24SVE 3A	0	(+)																	

SOIL VAPOR EXTRACTION PILOT TEST
CONSTANT VACUUM TEST
SITE 24 MCAS EL TORO
TEST WELL 24SVE1
AIR FLOW 200 SCFM

Time	TEST WELL	Air Flow SCFM	Well Vac 24SVE1	Remote Well	Remote Well Induced Vac. (Inches of water)	Flow (SCFH) Through Wellhead	Soil Gas Influent Temp.(F)	Blower Discharge Temp (F)	Notes	Well No.	Sample ID	Analysis	O_2	CO_2	1,1,2-TCTFA (ug/L)	1,1-DCE (ug/L)	trans-1,2-DCE (ug/L)	1,1-DCA (ug/L)	cis-1,2-DCE (ug/L)	Chloroform (ug/L)	Carbon tectrachloride (ug/L)	TCE (ug/L)	PCE (ug/L)
Date	**6/18/96**																						
0826	24SVE 1	nr	nr	nr	nr	nr			Well sample	24SVE 1	73W2361 01	8021			420	437	ND	6	2	ND<1	4	1290	5
0930	24SVE 1	200	28	24SVE 6	3.8	20																	
0930		200	28	24SVP 6	2.2	0.8																	
0930		200	28	24SVP 6A	2	1																	
10:00		200	28	24SVE 4	0..6	4																	
10:07		200	28	24SVE 3	0.1	nr																	
10:07		200	28	24SVE 3A	0.08	nr																	
1013		200	28	24SVE 7	0.61	1																	
1013		200	28	24SVE 7A	0.76	0.76																	
1013		200	28	24SVP 7	0.61	0.61																	
1026		200	28	24SVE 8	0.85	3.2																	
1026		200	28	24SVE 8A	0.7	3.8																	
1026		200	28	24SVP 8	0.64	0.3																	
End	24SVE 1	200	28	nr	nr	nr																	
Date	**6/19/96**																						
1545		nr	nr	nr	nr	nr		195	Well sample	24SVE 1	73W2362 01	8021			214	214	ND	ND<10	ND	ND	ND<10	853	ND<10
1604	24SVE 1	200	27	24SVE 6	3.5	20																	
1604		200	27	24SVP 6A	2	1																	
1604		200	27	24SVP 6	1.4	0.8																	
1611		200	27	24SVE 4	0.7	3.8																	
1615		200	27	24SVE 3	0.21	nr																	
1615		200	27	24SVE 3A	0.1	nr																	
1621		200	27	24SVE 7	0.68	1																	
1621		200	27	24SVE 7A	0.83	1.5																	
1621		200	27	24SVP 7	0.66	2.7																	
1629		200	27	24SVE 8	0.96	4.2																	
1629		200	27	24SVE 8A	0.88	5.2																	
1629		200	27	24SVP 8	0.4	0.5																	
End	24SVE 1	200	27	nr	nr	nr																	
Date	**6/20/96**																						
1320	24SVE 1	200	28	24SVE 6	3.8	20																	
1320		200	28	24SVP 6	2.2	0.8																	
1320		200	28	24SVP 6A	2	1																	
1335		200	28	24SVE 4	0.6	3.6																	
1338		200	28	24SVE 3	0.08	nr																	
1338		200	28	24SVE 3A	0.04	nr																	
1344		200	28	24SVE 7	0.52	0.7																	
1344		200	28	24SVE 7A	0.68	1.2																	
1344		200	28	24SVP 7	0.6	1.5																	
1350		200	28	24SVE 8	0.8	3																	
1350		200	28	24SVE 8A	0.68	3.2																	
1350		200	28	24SVP 8	0.62	0.3																	
1400		nr	nr	nr	nr	nr																	
End	24SVE 1	200	28	nr	nr	nr			Well sample	24SVE 1	73W2364 01	8021			98	223	ND	ND	ND	ND	ND	1199	ND

SOIL VAPOR EXTRACTION PILOT TEST
CONSTANT VACUUM TEST
SITE 24 MCAS EL TORO
TEST WELL 24SVE1
AIR FLOW 200 SCFM

Time	TEST WELL	Air Flow SCFM	Well Vac 24SVE1	Remote Well	Remote Well Induced Vac. (inches of water)	Flow (SCFH) Through Wellhead	Soil Gas Influent Temp.(F)	Blower Discharge Temp (F)	Notes	Well No.	Sample ID	Analysis	O_2	CO_2	1,1,2-TCTFA (ug/L)	1,1-DCE (ug/L)	trans-1,2-DCE (ug/L)	1,1-DCA (ug/L)	cis-1,2-DCE (ug/L)	Chloroform (ug/L)	Carbon tetrachloride (ug/L)	TCE (ug/L)	PCE (ug/L)
Date	6/21/96																						
1012	24SVE 1	200	28	24SVE 6	4	20	70	175															
1012		200	28	24SVP 6	2.4	0.8																	
1012		200	28	24SVP 6A	2.2	1																	
1021		200	28	24SVE 4	0.88	5																	
1027		200	28	24SVE 3	0.26	0.3																	
1027		200	28	24SVE 3A	0.1	0																	
1037		200	28	24SVE 7	0.8	1																	
1037		200	28	24SVE 7A	0.96	2.5																	
1037		200	28	24SVP 7	0.8	3.5																	
1045		200	28	24SVE 8	1.2	4.7																	
1045		200	28	24SVE 8A	1	5																	
1045		200	28	24SVP 8	0.9	0.5																	
1100		nr	nr	nr	nr	nr			Well sample	24SVE 1	73W2365 01	8021			63	159	ND	ND	ND	ND	ND	945	ND
End	24SVE 1	200	28	nr	nr	nr																	
Date	**6/25/96**																						
1405	24SVE 1	200	28	24SVE 6	3.2	20	80	170															
1405		200	28	24SVP 6	2.2	0.8																	
1405		200	28	24SVP 6A	2	1																	
1410		200	28	24SVE 4	0.6	3.5																	
1420		200	28	24SVE 3	0.1	nr																	
1420		200	28	24SVE 3A	0.08	nr																	
1430		200	28	24SVE 7	0.6	0.6																	
1430		200	28	24SVE 7A	0.7	1																	
1430		200	28	24SVP 7	0.6	1																	
1440		200	28	24SVE 8	0.72	2.5																	
1440		200	28	24SVE 8A	0.62	3.2																	
1440		200	28	24SVP 8	0.6	0.25																	
1450		nr	nr	nr	nr	nr			Effluent sample	24SVE 1	73W2367 01	8021			ND<1	ND<1	ND	ND<1	ND	ND	ND	ND<1	ND<1
1455		nr	nr	nr	nr	nr			Well sample	24SVE 1	73W2366 01	8021			69	109	ND	1	ND	ND	ND<1	641	2
End	24SVE 1	200	28	nr	nr	nr																	
Date	**6/26/96**																						
1448	24SVE 1	200	28	24SVE 6	3.8	20			No sample taken														
1448		200	28	24SVP 6	2.2	0.82																	
1448		200	28	24SVP 6A	2	1																	
1456		200	28	24SVE 4	0.76	5																	
1502		200	28	24SVE 3	0.14	nr																	
1502		200	28	24SVE 3A	0.08	nr																	
1510		200	28	24SVE 7	0.6	1																	
1510		200	28	24SVE 7A	0.8	1.5																	
1510		200	28	24SVP 7	0.67	2.5																	
1519		200	28	24SVE 8	0.89	3.5																	
1519		200	28	24SVE 8A	0.78	4.8																	
1519		200	28	24SVP 8	0.68	0.35																	
End	24SVE 1	200	28	nr	nr	nr																	

SOIL VAPOR EXTRACTION PILOT TEST
CONSTANT VACUUM TEST
SITE 24 MCAS EL TORO
TEST WELL 24SVE1
AIR FLOW 200 SCFM

Time	TEST WELL	Air Flow SCFM	Well Vac 24SVE1	Remote Well	Remote Well Induced Vac. (inches of water)	Flow (SCFH) Through Wellhead	Soil Gas Influent Temp.(F)	Blower Discharge Temp (F)	Notes	Well No.	Sample ID	Analysis	O_2	CO_2	1,1,2-TCTFA (ug/L)	1,1-DCE (ug/L)	trans-1,2-DCE (ug/L)	1,1-DCA (ug/L)	cis-1,2-DCE (ug/L)	Chloroform (ug/L)	Carbon tetrachloride (ug/L)	TCE (ug/L)	PCE (ug/L)
Date	**6/27/96**																						
1338	24SVE 1	200	28	24SVE 6	3.6	20			No sample taken														
1338		200	28	24SVP 6	2	0.8																	
1338		200	28	24SVP 6A	2	0.6																	
1345		200	28	24SVE 4	0.64	4																	
1350		200	28	24SVE 3	0.12	nr																	
1350		200	28	24SVE 3A	0.04	nr																	
1355		200	28	24SVE 7	0.6	0.8																	
1355		200	28	24SVE 7A	0.73	1																	
1355		200	28	24SVP 7	0.58	1.5																	
1405		200	28	24SVE 8	0.8	3.8																	
1405		200	28	24SVE 8A	0.68	3																	
1405		200	28	24SVP 8	0.66	0.3																	
End	24SVE 1	200	28	nr	nr	nr																	
Date	**6/28/96**																						
1306	24SVE 1	200	28	24SVE 6	3.8	20																	
1306		200	28	24SVP 6	2	0.8																	
1306		200	28	24SVP 6A	1.8	1																	
1316		200	28	24SVE 4	0.4	1																	
1319		200	28	24SVE 3	(+)	0																	
1319		200	28	24SVE 3A	0	0																	
1326		200	28	24SVE 7	0.4	0.45																	
1326		200	28	24SVE 7A	0.52	1																	
1326		200	28	24SVP 7	0.43	1																	
1332		200	28	24SVE 8	0.62	1.2																	
1332		200	28	24SVE 8A	0.5	1.2																	
1332		200	28	24SVP 8	0.52	0.2																	
1345		nr	nr	nr	nr	nr			Well sample	24SVE 1	73W2368 01	8021			30	30	ND	ND<5	ND	ND	ND	194	ND<5
1350		nr	nr	nr	nr	nr			Effluent sample	24SVE 1	73W2369 01	8021			ND<1	ND<1	ND	ND	ND	ND	ND	ND<1	ND<1
End	24SVE 1	200	28	nr	nr	nr																	
Date	**7/1/96**																						
1150	24SVE 1	200	28	24SVE 6	3.8	20																	
1150		200	28	24SVP 6	1.8	0.8																	
1150		200	28	24SVP 6A	2	1																	
1156		200	28	24SVE 4	0.42	1																	
1200		200	28	24SVE 3	(+)	0																	
1200		200	28	24SVE 3A	0.01	0																	
1205		200	28	24SVE 7	0.42	0.5																	
1205		200	28	24SVE 7A	0.52	1																	
1205		200	28	24SVP 7	0.4	1																	
1214		200	28	24SVE 8	0.66	1.7																	
1214		200	28	24SVE 8A	0.54	1.4																	
1214		200	28	24SVP 8	0.5	0.2																	
1315		nr	nr	nr	nr	nr			Well sample	24SVE 1	73W2370 01	8021			87	91	ND	ND	ND	ND	ND	232	ND<5
End	24SVE 1	200	28	nr	nr	nr																	

SOIL VAPOR EXTRACTION PILOT TEST
CONSTANT VACUUM TEST
SITE 24 MCAS EL TORO
TEST WELL 24SVE1
AIR FLOW 200 SCFM

Time	TEST WELL	Air Flow SCFM	Well Vac 24SVE1	Remote Well	Remote Well Induced Vac. (Inches of water)	Flow (SCFH) Through Wellhead	Soil Gas Influent Temp.(F)	Blower Discharge Temp (F)	Notes	Well No.	Sample ID	Analysis	O_2	CO_2	1,1,2-TCTFA (ug/L)	1,1-DCE (ug/L)	trans-1,2-DCE (ug/L)	1,1-DCA (ug/L)	cis-1,2-DCE (ug/L)	Chloroform (ug/L)	Carbon tectrachloride (ug/L)	TCE (ug/L)	PCE (ug/L)
Date	**7/2/96**																						
1525	24SVE 1	200	28	24SVE 6	3.8	20			No sample taken														
1525		200	28	24SVP 6	2	0.8																	
1525		200	28	24SVP 6A	2	1																	
1532		200	28	24SVE 4	0.7	4.5																	
1535		200	28	24SVE 3	0.16	0																	
1535		200	28	24SVE 3A	0.1	0																	
1540		200	28	24SVE 7	0.68	1																	
1540		200	28	24SVE 7A	0.8	1.5																	
1540		200	28	24SVP 7	0.68	2.3																	
1547		200	28	24SVE 8	0.98	3.6																	
1547		200	28	24SVE 8A	0.86	5																	
1547		200	28	24SVP 8	0.78	0.4																	
End	24SVE 1	200	28	nr	nr	nr																	
Date	**7/3/96**																						
1403	24SVE 1	200	28	24SVE 6	3.8	20																	
1403		200	28	24SVP 6	1.8	0.8																	
1403		200	28	24SVP 6A	2	1																	
1411		200	28	24SVE 4	0.5	2.3																	
1415		200	28	24SVE 3	0.02	0																	
1415		200	28	24SVE 3A	0.02	0																	
1421		200	28	24SVE 7	0.48	0.7																	
1421		200	28	24SVE 7A	0.6	1																	
1421		200	28	24SVP 7	0.48	1																	
1430		200	28	24SVE 8	0.68	1.5																	
1430		200	28	24SVE 8A	0.56	2																	
1430		200	28	24SVP 8	0.52	0.2			**END SVE TEST**														
1500		nr	nr	nr	nr	nr			Well sample	24SVE 1	73W2371 01	8021			85	69	ND	ND	ND	ND	ND	427	ND <50
End	24SVE 1	200	28	nr	nr	nr			ALLOW 5 DAYS														
									EQUILIBRATION														
Date	**7/8/96**								THEN RESAMPLE														
1310	24SVE 1	200	28	nr	nr	nr			PID readings														
1316		200	28	nr	nr	nr			157ppm														
1324		200	28	nr	nr	nr			132ppm														
1334		200	28	nr	nr	nr			209ppm														
1344		200	28	nr	nr	nr			209ppm														
1354		200	28	nr	nr	nr			209ppm														
1404		200	28	nr	nr	nr			207ppm														
1406	24SVE 1	nr	nr	nr	nr	nr			Well sample	24SVE 1	73W2373 01	8021			ND<50	72	ND	ND	ND	ND	ND	402	ND<50
1406		nr	nr	nr	nr	nr					73W2373 02	CO_2		13.46%v/v									
1406		nr	nr	nr	nr	nr			Final PID		73W2373 03	O_2	18.05%v/v										
1420	24SVE 1	200	28	nr	nr	nr			207ppm														
End	24SVE 1	200	28	nr	nr	nr																	

APPENDIX B

LABORATORY ANALYTICAL RESULTS

May 21, 1996

EST1296

Mr. Patrick Brooks
Bechtel National, Inc.
401 West A Street, Suite 1000
San Diego, California 92101-7905

Subject: Soil Gas Sample Analyses Report
Site 24
El Toro Marine Corps Air Station, El Toro, California

Dear Mr. Brooks:

Environmental Support Technologies, Inc. (EST) is pleased to provide this Soil Gas Sample Analyses Report for Tedlar™ bag samples collected from two (2) sampling locations at Site 24 VOC Source Area at the El Toro Marine Corps Air Station in El Toro, California. Bechtel National, Inc. performed the soil gas sample collection and delivered the samples under chain-of-custody to EST for analyses. Soil gas samples were analyzed for volatile organic compounds (VOCs), oxygen (O_2) and carbon dioxide (CO_2).

A summary of field analyses results for the soil gas samples is provided in Table 1. Laboratory analyses reports, quality assurance/ quality control data, and three-point calibration data for VOCs are included in Appendix A. Laboratory analyses reports for O_2 and CO_2 are included in Appendix B. Chain-of-custody forms are provided in Appendix C.

Should you have any questions or comments please contact me at (714) 457-9664.

Sincerely,

Environmental Support Technologies, Inc.

Kirk A. Thomson

Kirk A. Thomson, R.G., R.E.A.
Project Manager/Principal Hydrogeologist

cc: EST Project File (296TED.RPT)

23011 Moulton Parkway • Suite E-6 • Laguna Hills, California 92653 • 714/457-9664 • Fax 714/457-0664

LIMITATIONS AND WARRANTIES

This Soil Gas Sample Analyses Report has been prepared for the exclusive use of Bechtel National, Inc. and assigned interested parties. The report has been prepared in accordance with generally accepted environmental assessment practices. No other warranty, expressed or implied, is made.

The information provided in this report is based on measurements performed in specific areas during a specific limited period of time. In the event that any changes occur in waste management practices, site conditions, or uses of the property, the results contained in this Soil Gas Sample Analyses Report should be reviewed and modified or verified in writing by Environmental Support Technologies, Inc. (EST).

Soil gas sample analyses are conducted using laboratory-grade gas chromatography equipment. Chemical compound identification is performed using quantitative methods. Chemical compound identities should be verified using gas chromatography/mass spectrometric analyses methods. Soil gas survey data should be used in conjunction with other site specific data.

Kirk A. Thomson

Kirk A. Thomson, R.G., R.E.A.
Project Manager/Principal Hydrogeologist

TABLES

Table 1

SUMMARY TABLE FOR LABORATORY ANALYSES RESULTS
TEDLAR BAG SOIL GAS SAMPLES

SITE 24 VOC SOURCE AREA, MCAS – EL TORO, CALIFORNIA

5/17/96

SAMPLE ID NUMBER	SAMPLE LOCATION	DATE OF SAMPLING	TCE (ug/L)	PCE (ug/L)	O2 %(v/v)	CO2 %(v/v)
73W2347	24AS1	5/14/96	2	ND<1	13	4.5
73W2348	24AS1	5/14/96	2	ND<1	17	4.8
73W2349	VES SYSTEM	5/17/96	ND<1	ND<1	NA	NA

ft. = feet below grade
ug/L = micrograms per liter
%(v/v) = percent volume per volume
ND = Not Detected above the reported limit
NA = Not Analyzed

TCE = Trichloroethene
PCE = Tetrachloroethene
O2 = Oxygen
CO2 = Carbon Dioxide

Note: Concentrations shown are the highest detected within calibration limits for each sample

APPENDICES

Appendix A

LABORATORY ANALYSES REPORTS FOR HALOGENATED AND AROMATIC HYDROCARBONS

(INCLUDING CALIBRATION REPORTS, QUALITY CONTROL REPORTS, EXPLANATION OF METHOD DETECTION LIMITS)

TABLE A-1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
BECHTEL, SITE 24 VOC SOURCE AREA, EL TORO, CALIFORNIA
25-TARGET COMPOUND LIST

PID/ELCD #2 - 5/15/96
FILE: 296EESGRP.WK3

SAMPLE ID			73W2347-05	73W2347-05	73W2347-06	NA	NA	NA	NA	NA
DATE			5/15/96	5/15/96	5/15/96	NA	NA	NA	NA	NA
TIME			12:13	12:29	12:46	NA	NA	NA	NA	NA
INJECTION VOLUME (ul)			500	500	500	NA	NA	NA	NA	NA
PURGE VOLUME (ml)			NA	NA	NA	NA	NA	NA	NA	NA
VACUUM (in. Hg)			NA	NA	NA	NA	NA	NA	NA	NA
DILUTION FACTOR			1.0	1.0	1.0	NA	NA	NA	NA	NA
COMMENTS	RT	ARF	Tedlar bag sample	Tedlar bag Sample dup	Tedlar bag sample					
Dichlorodifluoromethane	2:90	8.77E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	3:26	4.37E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	3:55	3.10E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	3:75	6.79E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloro-trifluoroethane	4:36	1.37E+09	8.81E+04 ND<1	1.72E+05 ND<1	1.95E+05 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethene	4:36	2.49E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Methylene chloride	4:93	1.07E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans-1,2-Dichloroethene	5:24	1.04E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethane	5:72	9.38E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
cis-1,2-Dichloroethene	6:39	1.13E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroform	6:75	1.31E+09	3.29E+05 ND<1	6.10E+05 ND<1	6.44E+05 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1-Trichloroethane	7:01	1.18E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	7:22	1.48E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Benzene	7:46	9.07E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2-Dichloroethane	7:47	1.32E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichloroethene	8:28	1.19E+09	5.32E+05 ND<1	9.24E+05 2	9.69E+05 2	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Toluene	10:04	8.74E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloroethane	10:62	9.88E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	10:91	1.43E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1,2-Tetrachloroethane	12:36	1.12E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	12:40	6.04E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta and para-Xylene	12:59	1.69E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho-Xylene	13:26	6.32E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2-Tetrachloroethane	14:34	8.86E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

ND = not detected; analyte is below the reportable limit of quantitation for this sample
RT = retention time
ul = microliter
in. Hg = inches of Mercury

Concentrations reported in micrograms per liter (ug/L)
ARF = average response factor
ml = milliliter
* = compound detected out of calibration range

5/15/96

ANALYST : Ragi Abraham

REVIEWED BY : David M. Pride

TABLE A-1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
BECHTEL, SITE 24 VOC SOURCE AREA, EL TORO, CALIFORNIA
25-TARGET COMPOUND LIST

PID/ELCD #2 - 5/17/96
FILE: 296FFSGRP.WK3

SAMPLE ID			73W2349-01	NA	NA	NA	NA	NA	NA	NA
DATE			5/17/96	NA	NA	NA	NA	NA	NA	NA
TIME			16:41	NA	NA	NA	NA	NA	NA	NA
INJECTION VOLUME (ul)			500	NA	NA	NA	NA	NA	NA	NA
PURGE VOLUME (ml)			NA	NA	NA	NA	NA	NA	NA	NA
VACUUM (in. Hg)			NA	NA	NA	NA	NA	NA	NA	NA
DILUTION FACTOR			1.0	NA	NA	NA	NA	NA	NA	NA
COMMENTS	RT	ARF	Tedlar bag sample							
Dichlorodifluoromethane	NA	NA	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	3:33	1.11E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	3:63	1.51E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	3:82	3.22E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloro-trifluoroethane	4:49	9.49E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethene	4:48	2.48E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Methylene chloride	5:05	8.79E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans-1,2-Dichloroethene	5:33	7.81E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethane	5:61	6.02E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
cis-1,2-Dichloroethene	6:46	6.34E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroform	6:81	1.11E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1-Trichloroethane	7:05	9.77E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	7:25	1.28E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00* ND	0.00E+00 ND	0.00E+00 ND
Benzene	7:49	1.17E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2-Dichloroethane	7:53	9.23E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichloroethene	8:27	9.68E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Toluene	9:99	1.15E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloroethane	10:57	1.00E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	10:78	1.13E+09	2.74E+04 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1,2-Tetrachloroethane	12:15	1.07E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	12:15	9.64E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta and para-Xylene	12:31	2.42E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho-Xylene	12:91	9.39E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2-Tetrachloroethane	13:92	1.09E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

ND = not detected; analyte is below the reportable limit of quantitation for this sample
RT = retention time
ul = microliter
in. Hg = inches of Mercury

Concentrations reported in micrograms per liter (ug/L)
ARF = average response factor
ml = milliliter
* = compound detected out of calibration range

5/17/96

ANALYST : Ragi Abraham

REVIEWED BY : David M. Pride

TABLE A-2
QUALITY ASSURANCE/QUALITY CONTROL REPORT
DAILY MID-POINT, BLANK ANALYSIS, AND LAST GC TEST RUN
MAY 15, 1996

PID/ELCD #2

FILE: 296EEQCMP.WK

		DAILY MID-POINT			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	2:90	0			0.00E+00	0		
RF		0.00E+00	8.77E+07	NA	ND	0.00E+00	8.77E+07	NA
Vinyl chloride	3:26	0			0.00E+00	0		
RF		0.00E+00	4.37E+08	NA	ND	0.00E+00	4.37E+08	NA
Chloroethane	3:55	0			0.00E+00	0		
RF		0.00E+00	3.10E+08	NA	ND	0.00E+00	3.10E+08	NA
Trichlorofluoromethane	3:75	0			0.00E+00	0		
RF		0.00E+00	6.79E+08	NA	ND	0.00E+00	6.79E+08	NA
1,1,2-Trichloro-trifluoroethane	4:36	0			0.00E+00	0		
RF		0.00E+00	1.37E+09	NA	ND	0.00E+00	1.37E+09	NA
1,1-Dichloroethene (PID)	4:36	108079			0.00E+00	102695		
RF		2.16E+07	2.49E+07	-13	ND	2.05E+07	2.49E+07	-18
Methylene chloride	4:93	0			0.00E+00	0		
RF		0.00E+00	1.07E+09	NA	ND	0.00E+00	1.07E+09	NA
trans-1,2-Dichloroethene	5:24	4763782			0.00E+00	4893418		
RF		9.53E+08	1.04E+09	-8	ND	9.79E+08	1.04E+09	-6
1,1-Dichloroethane	5:72	4721118			0.00E+00	4819849		
RF		9.44E+08	9.38E+08	1	ND	9.64E+08	9.38E+08	3
Cis-1,2-Dichloroethene	6:39	4951959			0.00E+00	5149133		
RF		9.90E+08	1.13E+09	-12	ND	1.03E+09	1.13E+09	-9
Chloroform	6:75	0			0.00E+00	0		
RF		0.00E+00	1.31E+09	NA	ND	0.00E+00	1.31E+09	NA
1,1,1-Trichloroethane	7:01	5644293			0.00E+00	5407414		
RF		1.13E+09	1.18E+09	-4	ND	1.08E+09	1.18E+09	-8
Carbon tetrachloride	7:22	0			0.00E+00	0		
RF		0.00E+00	1.48E+09	NA	ND	0.00E+00	1.48E+09	NA
Benzene (PID)	7:46	430869			0.00E+00	408279		
RF		8.62E+07	9.07E+07	-5	ND	8.17E+07	9.07E+07	-10
1,2-Dichloroethane	7:47	6138019			0.00E+00	5698514		
RF		1.23E+09	1.32E+09	-7	ND	1.14E+09	1.32E+09	-14
Trichloroethene	8:28	5477214			0.00E+00	5361886		
RF		1.10E+09	1.19E+09	-8	ND	1.07E+09	1.19E+09	-10
Toluene (PID)	10:04	415473			0.00E+00	447386		
RF		8.31E+07	8.74E+07	-5	ND	8.95E+07	8.74E+07	2
1,1,2-Trichloroethane	10:62	4865155			0.00E+00	5180209		
RF		9.73E+08	9.68E+08	1	ND	1.04E+09	9.68E+08	7
Tetrachloroethene	10:91	6370725			0.00E+00	6116405		
RF		1.27E+09	1.43E+09	-11	ND	1.22E+09	1.43E+09	-14
1,1,1,2-Tetrachloroethane	12:36	0			0.00E+00	0		
RF		0.00E+00	1.12E+09	NA	ND	0.00E+00	1.12E+09	NA
Ethylbenzene (PID)	12:40	0			0.00E+00	0		
RF		0.00E+00	6.04E+07	NA	ND	0.00E+00	6.04E+07	NA
m,p-Xylene (PID)	12:59	807812			0.00E+00	869311		
RF		1.62E+08	1.69E+08	-4	ND	1.74E+08	1.69E+08	3
o-Xylene (PID)	13:26	325389			0.00E+00	320880		
RF		6.51E+07	6.32E+07	3	ND	6.42E+07	6.32E+07	2
1,1,2,2-Tetrachloroethane	14:34	0			0.00E+00	0		
RF		0.00E+00	8.86E+08	NA	ND	0.00E+00	8.86E+08	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

5/15/96

ANALYST: Ragi Abraham

REVIEWED BY: David M. Pride

TABLE A-3
RESPONSE FACTORS FOR THREE POINT CALIBRATION
SUBJECT SITE, CALIFORNIA
APRIL 24, 1996

PIDVELCD #2

FILE: 4240[illegible]

STANDARD CONC. (ug/L) INJECTION VOLUME(uL) COMPOUND/WEIGHT(ug)	RT	5000 0.50 0.0025	5000 1.00 0.0050	5000 2.00 0.0100	AVERAGE RESPONSE FACTOR	STANDARD DEVIATION	RELATIVE % STANDARD DEVIATION
Dichlorodifluoromethane	2:90	194482	420918	1012432			
CF		7.78E+07	8.42E+07	1.01E+08	8.77E+07	1.21E+07	14
Vinyl chloride	3:26	958056	2347988	4591034			
CF		3.83E+08	4.70E+08	4.59E+08	4.37E+08	4.71E+07	11
Chloroethane	3:55	803430	1519289	3037713			
CF		3.21E+08	3.04E+08	3.04E+08	3.10E+08	1.01E+07	3
Trichlorofluoromethane	3:75	1670633	3327440	7030350			
CF		6.68E+08	6.65E+08	7.03E+08	6.79E+08	2.09E+07	3
1,1,2-Trichloro-trifluoroethane	4:36	3068454	7195634	14318027			
CF		1.23E+09	1.44E+09	1.43E+09	1.37E+09	1.20E+08	9
1,1-Dichloroethene (PID)	4:36	55032	110627	305725			
CF		2.20E+07	2.21E+07	3.06E+07	2.49E+07	4.91E+06	20
Methylene chloride	4:93	2517211	5506436	11128812			
CF		1.01E+09	1.10E+09	1.11E+09	1.07E+09	5.81E+07	5
trans-1,2-Dichloroethene	5:24	2272591	5332875	11409777			
CF		9.09E+08	1.07E+09	1.14E+09	1.04E+09	1.18E+08	11
1,1-Dichloroethane	5:72	2108242	4917295	9875290			
CF		8.43E+08	9.83E+08	9.88E+08	9.38E+08	8.21E+07	9
cis-1,2-Dichloroethene	6:39	2630404	5837384	11568102			
CF		1.05E+09	1.17E+09	1.16E+09	1.13E+09	6.37E+07	6
Chloroform	6:75	3071756	6811353	13319420			
CF		1.23E+09	1.36E+09	1.33E+09	1.31E+09	7.00E+07	5
1,1,1-Trichloroethane	7:01	2879068	6038728	11710360			
CF		1.15E+09	1.21E+09	1.17E+09	1.18E+09	2.85E+07	2
Carbon tetrachloride	7:22	3429459	7707342	15377948			
CF		1.37E+09	1.54E+09	1.54E+09	1.48E+09	9.69E+07	7
Benzene (PID)	7:46	202287	463128	987006			
CF		8.09E+07	9.26E+07	9.87E+07	9.07E+07	9.04E+06	10
1,2-Dichloroethane	7:47	3018098	6997910	13646475			
CF		1.21E+09	1.40E+09	1.36E+09	1.32E+09	1.02E+08	8
Trichloroethene	8:28	2720582	6295165	12216627			
CF		1.09E+09	1.26E+09	1.22E+09	1.19E+09	8.98E+07	8
Toluene (PID)	10:04	189615	473966	915154			
CF		7.58E+07	9.48E+07	9.15E+07	8.74E+07	1.01E+07	12
1,1,2-Trichloroethane	10:62	2201954	5032679	10166793			
CF		8.81E+08	1.01E+09	1.02E+09	9.68E+08	7.57E+07	8
Tetrachloroethene	10:91	3472760	7181440	14630275			
CF		1.39E+09	1.44E+09	1.46E+09	1.43E+09	3.74E+07	3
1,1,1,2-Tetrachloroethane	12:36	2520257	5831261	11888172			
CF		1.01E+09	1.17E+09	1.19E+09	1.12E+09	9.85E+07	9
Ethylbenzene (PID)	12:40	128137	303366	692977			
CF		5.13E+07	6.07E+07	6.93E+07	6.04E+07	9.02E+06	15
m,p-Xylene (PID)	12:59	375763	841106	1871726			
CF		1.50E+08	1.68E+08	1.87E+08	1.69E+08	1.84E+07	11
o-Xylene (PID)	13:26	149216	304855	688187			
CF		5.97E+07	6.10E+07	6.88E+07	6.32E+07	4.94E+06	8
1,1,2,2-Tetrachloroethane	14:34	1929867	4749621	9372528			
CF		7.72E+08	9.50E+08	9.37E+08	8.86E+08	9.93E+07	11

RT = Retention Time
CF = Calibration Factor

ug/L = Micrograms per Liter
uL = Microliter
ug = Microgram

4/24/96

Analyst: David M. Pride

Reviewed by: Ragi Abraham

TABLE A-3
RESPONSE FACTORS FOR THREE POINT CALIBRATION
SUBJECT SITE, CALIFORNIA
MAY 17, 1996

PID/ELCD #1

FILE: 051796PT.WK3

STANDARD CONC. (ug/L) INJECTION VOLUME(uL) COMPOUND/WEIGHT(ug)	RT	5000 0.50 0.0025	5000 1.00 0.0050	5000 2.00 0.0100	AVERAGE RESPONSE FACTOR	STANDARD DEVIATION	RELATIVE % STANDARD DEVIATION
Dichlorodifluoromethane		0	0	0			
CF		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
Vinyl chloride	3:33	256404	586125	1130657			
CF		1.03E+08	1.17E+08	1.13E+08	1.11E+08	7.56E+06	7
Chloroethane	3:63	412108	636143	1612556			
CF		1.65E+08	1.27E+08	1.61E+08	1.51E+08	2.08E+07	14
Trichlorofluoromethane	3:82	793246	1550504	3398119			
CF		3.17E+08	3.10E+08	3.40E+08	3.22E+08	1.55E+07	5
1,1,2-Trichloro-trifluoroethane	4:49	2287808	5173778	8980461			
CF		9.15E+08	1.03E+09	8.98E+08	9.49E+08	7.45E+07	8
1,1-Dichloroethene (PID)	4:48	53855	124811	279621			
CF		2.15E+07	2.50E+07	2.80E+07	2.48E+07	3.21E+06	13
Methylene chloride	5:05	2097194	4468930	9049900			
CF		8.39E+08	8.94E+08	9.05E+08	8.79E+08	3.54E+07	4
trans-1,2-Dichloroethene	5:33	1840737	4099970	7880340			
CF		7.36E+08	8.20E+08	7.88E+08	7.81E+08	4.22E+07	5
1,1-Dichloroethane	5:81	1956844	4227240	7765306			
CF		7.83E+08	8.45E+08	7.77E+08	8.02E+08	3.81E+07	5
cis-1,2-Dichloroethene	6:46	1936264	4327067	8620424			
CF		7.75E+08	8.65E+08	8.62E+08	8.34E+08	5.15E+07	6
Chloroform	6:81	2603506	5766639	11431927			
CF		1.04E+09	1.15E+09	1.14E+09	1.11E+09	6.19E+07	6
1,1,1-Trichloroethane	7:05	2328726	5137926	9727401			
CF		9.31E+08	1.03E+09	9.73E+08	9.77E+08	4.82E+07	5
Carbon tetrachloride	7:25	3024806	6797578	12632941			
CF		1.21E+09	1.36E+09	1.26E+09	1.28E+09	7.58E+07	6
Benzene (PID)	7:49	263512	626137	1214341			
CF		1.05E+08	1.25E+08	1.21E+08	1.17E+08	1.05E+07	9
1,2-Dichloroethane	7:53	2180827	4965459	9037814			
CF		8.72E+08	9.93E+08	9.04E+08	9.23E+08	6.26E+07	7
Trichloroethene	8:27	2312473	5141517	9508850			
CF		9.25E+08	1.03E+09	9.51E+08	9.68E+08	5.38E+07	6
Toluene (PID)	9:99	261059	611448	1185066			
CF		1.04E+08	1.22E+08	1.19E+08	1.15E+08	9.41E+06	8
1,1,2-Trichloroethane	10:57	2372658	5284463	9928588			
CF		9.49E+08	1.06E+09	9.93E+08	1.00E+09	5.42E+07	5
Tetrachloroethene	10:78	2506432	6224648	11490055			
CF		1.00E+09	1.24E+09	1.15E+09	1.13E+09	1.22E+08	11
1,1,1,2-Tetrachloroethane	12:15	2544517	5689617	10633323			
CF		1.02E+09	1.14E+09	1.06E+09	1.07E+09	6.06E+07	6
Ethylbenzene (PID)	12:15	215075	535609	959471			
CF		8.60E+07	1.07E+08	9.59E+07	9.64E+07	1.06E+07	11
m,p-Xylene (PID)	12:31	554441	1345130	2347128			
CF		2.22E+08	2.69E+08	2.35E+08	2.42E+08	2.44E+07	10
o-Xylene (PID)	12:91	212217	526835	915618			
CF		8.49E+07	1.05E+08	9.16E+07	9.39E+07	1.04E+07	11
1,1,2,2-Tetrachloroethane	13:92	2455456	5832767	11290611			
CF		9.82E+08	1.17E+09	1.13E+09	1.09E+09	9.74E+07	9

RT = Retention Time
CF = Calibration Factor

ug/L = Micrograms per Liter
uL = Microliter
ug = Microgram

5/17/96

Analyst: Ragi Abraham

Reviewed by: David M. Pride

TABLE A-4
QUALITY ASSURANCE/QUALITY CONTROL REPORT
LAB CONTROL SAMPLE, BLANK ANALYSIS, AND LAST GC TEST RUN
APRIL 24, 1996

PID/ELCD #2

FILE: 424QCLC.WK

		LAB CONTROL SAMPLE			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	2:90	502880			0.00E+00	0		
RF		1.01E+08	8.77E+07	15	ND	0.00E+00	8.77E+07	NA
Vinyl chloride	3:26	2681826			0.00E+00	0		
RF		5.36E+08	4.37E+08	23	ND	0.00E+00	4.37E+08	NA
Chloroethane	3:55	1507950			0.00E+00	0		
RF		3.02E+08	3.10E+08	-3	ND	0.00E+00	3.10E+08	NA
Trichlorofluoromethane	3:75	3673783			0.00E+00	0		
RF		7.35E+08	6.79E+08	8	ND	0.00E+00	6.79E+08	NA
1,1,2-Trichloro-trifluoroethane	4:36	7582873			0.00E+00	0		
RF		1.52E+09	1.37E+09	11	ND	0.00E+00	1.37E+09	NA
1,1-Dichloroethene (PID)	4:36	105830			0.00E+00	0		
RF		2.12E+07	2.49E+07	-15	ND	0.00E+00	2.49E+07	NA
Methylene chloride	4:93	5762127			0.00E+00	0		
RF		1.15E+09	1.07E+09	8	ND	0.00E+00	1.07E+09	NA
trans-1,2-Dichloroethene	5:24	5517709			0.00E+00	0		
RF		1.10E+09	1.04E+09	6	ND	0.00E+00	1.04E+09	NA
1,1-Dichloroethane	5:72	5125724			0.00E+00	0		
RF		1.03E+09	9.38E+08	9	ND	0.00E+00	9.38E+08	NA
Cis-1,2-Dichloroethene	6:39	6113127			0.00E+00	0		
RF		1.22E+09	1.13E+09	8	ND	0.00E+00	1.13E+09	NA
Chloroform	6:75	7133083			0.00E+00	0		
RF		1.43E+09	1.31E+09	9	ND	0.00E+00	1.31E+09	NA
1,1,1-Trichloroethane	7:01	6414289			0.00E+00	0		
RF		1.28E+09	1.18E+09	9	ND	0.00E+00	1.18E+09	NA
Carbon tetrachloride	7:22	8044397			0.00E+00	0		
RF		1.61E+09	1.48E+09	9	ND	0.00E+00	1.48E+09	NA
Benzene (PID)	7:46	439057			0.00E+00	0		
RF		8.78E+07	9.07E+07	-3	ND	0.00E+00	9.07E+07	NA
1,2-Dichloroethane	7:47	7005227			0.00E+00	0		
RF		1.40E+09	1.32E+09	6	ND	0.00E+00	1.32E+09	NA
Trichloroethene	8:28	6508275			0.00E+00	0		
RF		1.30E+09	1.19E+09	9	ND	0.00E+00	1.19E+09	NA
Toluene (PID)	10:04	404203			0.00E+00	0		
RF		8.08E+07	8.74E+07	-8	ND	0.00E+00	8.74E+07	NA
1,1,2-Trichloroethane	10:62	5143977			0.00E+00	0		
RF		1.03E+09	9.68E+08	6	ND	0.00E+00	9.68E+08	NA
Tetrachloroethene	10:91	7195941			0.00E+00	0		
RF		1.44E+09	1.43E+09	1	ND	0.00E+00	1.43E+09	NA
1,1,1,2-Tetrachloroethane	12:36	5779558			0.00E+00	0		
RF		1.16E+09	1.12E+09	3	ND	0.00E+00	1.12E+09	NA
Ethylbenzene (PID)	12:40	290953			0.00E+00	0		
RF		5.82E+07	6.04E+07	-4	ND	0.00E+00	6.04E+07	NA
m,p-Xylene (PID)	12:59	814875			0.00E+00	0		
RF		1.63E+08	1.69E+08	-4	ND	0.00E+00	1.69E+08	NA
o-Xylene (PID)	13:26	298940			0.00E+00	0		
RF		5.98E+07	6.32E+07	-5	ND	0.00E+00	6.32E+07	NA
1,1,2,2-Tetrachloroethane	14:34	4975911			0.00E+00	0		
RF		9.95E+08	8.86E+08	12	ND	0.00E+00	8.86E+08	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

04/24/96

ANALYST: David M. Pride

REVIEWED BY: Ragi Abraham

TABLE A–4
QUALITY ASSURANCE/QUALITY CONTROL REPORT
LAB CONTROL SAMPLE, BLANK ANALYSIS, AND LAST GC TEST RUN
MAY 17, 1996

PID/ELCD #1

FILE: 0517QCLC.WK

		LAB CONTROL SAMPLE			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	3:09	0			0.00E+00	0		
RF		0.00E+00	NA	NA	ND	0.00E+00	NA	NA
Vinyl chloride	3:46	558018			0.00E+00	0		
RF		1.12E+08	1.11E+08	1	ND	0.00E+00	1.11E+08	NA
Chloroethane	3:77	715439			0.00E+00	0		
RF		1.43E+08	1.51E+08	–5	ND	0.00E+00	1.51E+08	NA
Trichlorofluoromethane	4:00	1565339			0.00E+00	0		
RF		3.13E+08	3.22E+08	–3	ND	0.00E+00	3.22E+08	NA
1,1,2–Trichloro–trifluoroethane	4:66	5128761			0.00E+00	0		
RF		1.03E+09	9.49E+08	8	ND	0.00E+00	9.49E+08	NA
1,1–Dichloroethene (PID)	4:66	106020			0.00E+00	105887		
RF		2.12E+07	2.48E+07	–15	ND	2.12E+07	2.48E+07	–15
Methylene chloride	5:22	4649744			0.00E+00	0		
RF		9.30E+08	8.79E+08	6	ND	0.00E+00	8.79E+08	NA
trans–1,2–Dichloroethene	5:51	4264302			0.00E+00	3771832		
RF		8.53E+08	7.81E+08	9	ND	7.54E+08	7.81E+08	–3
1,1–Dichloroethane	5:98	4477047			0.00E+00	3897427		
RF		8.95E+08	8.02E+08	12	ND	7.79E+08	8.02E+08	–3
Cis–1,2–Dichloroethene	6:63	4350479			0.00E+00	3904670		
RF		8.70E+08	8.34E+08	4	ND	7.81E+08	8.34E+08	–6
Chloroform	6:98	5920393			0.00E+00	0		
RF		1.18E+09	1.11E+09	7	ND	0.00E+00	1.11E+09	NA
1,1,1–Trichloroethane	7:23	5237151			0.00E+00	4641555		
RF		1.05E+09	9.77E+08	7	ND	9.28E+08	9.77E+08	–5
Carbon tetrachloride	7:43	6836573			0.00E+00	0		
RF		1.37E+09	1.28E+09	7	ND	0.00E+00	1.28E+09	NA
Benzene (PID)	7:68	610425			0.00E+00	541860		
RF		1.22E+08	1.17E+08	4	ND	1.08E+08	1.17E+08	–7
1,2–Dichloroethane	7:70	4941873			0.00E+00	4549629		
RF		9.88E+08	9.23E+08	7	ND	9.10E+08	9.23E+08	–1
Trichloroethene	8:46	5319880			0.00E+00	4664846		
RF		1.06E+09	9.68E+08	10	ND	9.33E+08	9.68E+08	–4
Toluene (PID)	10:17	609184			0.00E+00	534213		
RF		1.22E+08	1.15E+08	6	ND	1.07E+08	1.15E+08	–7
1,1,2–Trichloroethane	10:74	5561159			0.00E+00	5046767		
RF		1.11E+09	1.00E+09	11	ND	1.01E+09	1.00E+09	1
Tetrachloroethene	10:95	5850854			0.00E+00	5475941		
RF		1.17E+09	1.13E+09	4	ND	1.10E+09	1.13E+09	–3
1,1,1,2–Tetrachloroethane	12:31	5710169			0.00E+00	0		
RF		1.14E+09	1.07E+09	7	ND	0.00E+00	1.07E+09	NA
Ethylbenzene (PID)	12:32	520617			0.00E+00	0		
RF		1.04E+08	9.64E+07	8	ND	0.00E+00	9.64E+07	NA
m,p–Xylene (PID)	12:48	1273177			0.00E+00	1174198		
RF		2.55E+08	2.42E+08	5	ND	2.35E+08	2.42E+08	–3
o–Xylene (PID)	13:09	454742			0.00E+00	446262		
RF		9.09E+07	9.39E+07	–3	ND	8.93E+07	9.39E+07	–5
1,1,2,2–Tetrachloroethane	14:08	6113359			0.00E+00	0		
RF		1.22E+09	1.09E+09	12	ND	0.00E+00	1.09E+09	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

5/17/96

ANALYST: Ragi Abraham

REVIEWED BY: David M. Pride

Table A–5
Environmental Support Technologies, Inc.
Detection Limits for Soil Gas Surveys

Detection Limits or Reportable Limits of Quantitation for Halogenated and Aromatic Hydrocarbons are 1 ug/L when the injection volume is 500 uL. For lesser injection volumes detection limits are listed below.

Injection Volume (uL)	Detection Limit (ug/L)
500	1.0
250	2.0
200	2.5
100	5.0
80	6.3
60	8.3
50	10.0
40	12.5
20	25.0
10	50.0
5	100.0
1	500.0

Appendix B

LABORATORY ANALYSES REPORTS FOR OXYGEN AND CARBON DIOXIDE

Environmental Support Technologies, Inc.		Date Sampled:	5/14/96
23011 Moulton Parkway, Suite E-6		Date Received:	5/15/96
Laguna Hills, CA 92653		Date Prepared:	5/17/96
		Date Analyzed:	5/17/96
Sierra Project No.:	9605-122	Analyst:	BK
Client Project ID:	Site 24 VOC Source Area		
Sample Matrix:	Air	Report Date:	5/21/96

ORGANIC ANALYSIS

Sierra ID No.	Client ID No.	QUANTITY VALUES			
		Carbon Dioxide (v/v)	Oxygen (v/v)		
8367	73W2347-01,02	4.5	-		
8368	73W2347-03,04	-	13		
8369	73W2348-01,02	4.8	-		
8370	73W2348-03,04	-	17		
Method No.		700.6	700.6		
Method Detection Limit		<0.5	<0.5		

ND means Not Detected

Appendix C

CHAIN-OF-CUSTODY FORMS

CLEAN II

7825

CHAIN-OF-CUSTODY RECORD

Site Name: Site 24 VOC Source Area
CTO Number: 073

Sampler's Name(s): Patrick Brooks
Sampler's Signature(s): Patrick Brooks

Site Contact/Supervisor: CARL LIND

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Pkwy Suite E6 Laguna Hills, CA
Field QC Package Number:
Field Logbook/Page Number: AT-73W001 Page 20
Date: 5/14/96

Pay Items/Analyses Required: CO 700.6; O_2 700.6; 700.5 VOC

QC Level: C | (D) | E

TAT (in days): (2) | 7 | 14 | 30

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Preservation: None	None	None								Remarks (e.g., MS, MSD)
						Container Nos. (2 digit)										
5-14-96 PB 7W 73W2347	0900 5-14-96	24AS1	Air		1 liter tedlar bag	01 02	03 04	05 06								
73W2348	1400 5-14-96	24AS1	AIR		1 liter tedlar bag	01 02	03 04	05 06								

Relinquished By	Received By	Date	Time	Reason for Transfer
Patrick Brooks	Da Edmondson	5-14-96	1525	transport to lab
Da Edmondson	Marcia A. Sparrow	5-14-96	1615	

Comments/Instructions: Pat Brooks = Project manager 619-687-8851

Method of Shipment: HAND

Airbill No.:

Total No. of Coolers Shipped: 1

I forms/cocrecor doc

7825

CLEAN II

CHAIN-OF-CUSTODY RECORD

Site Name: Site 24 VOC Source Area
CTO Number: 073

Sampler's Name(s): Patrick Brooks
Sampler's Signature(s): Patrick Brooks

Site Contact/Supervisor: CARL LIND

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Pkwy Suite E6 Laguna Hills, CA
Field QC Package Number:
Field Logbook/Page Number: AT-73W-001 Page 20
Date: 5/14/96

Pay/Items/Analyses Required: CO_2 700.6; O_2 700.6; 700.5 Hot; VOC

QC Level: C | (D) | E

TAT (in days): (2) | 7 | 14 | 30

Preservation: None; None; ~~None~~; EAT

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Container Nos. (2 digit)	Remarks (e.g., MS, MSD)
5-14-96 PB 7W 73W2347	0900 5-14-96	24AS1	Air		1 liter tedlar bag	01 03 05 02 04 06	
73W2348	1400 5-14-96	24AS1	AIR		1 liter tedlar bag	01 03 05 02 04 06	

Relinquished By	Received By	Date	Time	Reason for Transfer
Patrick Brooks	[illegible]	5-14-96	1525	Transport to lab
[illegible]	Marcia [illegible]	5-14-96	1615	
[illegible]	Tracy Collins	5-15-96	1:40	

Comments/Instructions: Pat Brooks = Project manager 619-687-8851

Method of Shipment: HAND

Airbill No.:

Total No. of Coolers Shipped: 1

CLEAN II

7822

CHAIN-OF-CUSTODY RECORD

Site Name: Site 24 VOC Source Area
CTO Number: 073

Sampler's Name(s): Dan Eldridge
Sampler's Signature(s): Dan Eldridge

Site Contact/Supervisor: Carl Kind

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Pkwy Suite E6 Laguna Hills CA
Field QC Package Number:
Field Logbook/Page Number: AT-73WD01 Page 32
Date: 5-17-96

Pay Items/Analyses Required: 700.5 VOC

QC Level: C | D | E

TAT (in days): 2 | 7 | 14 | 30

Preservation: None

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Container Nos. (2 digit)	Remarks (e.g., MS, MSD)
73W2349	1000 5-17-96	VES (System)	Air		1 liter Tedlar	01	

Relinquished By	Received By	Date	Time	Reason for Transfer
Dan Eldridge	Marcia A. Espinoza	5-17-96	1251	Lab

Comments/Instructions: Pat Brooks - Project Mgr 619 687-8851

Method of Shipment: Hand Carry

Airbill No.: —

Total No. of Coolers Shipped: 1

f:/forms/coclecor.doc

July 24, 1996

EST1296

Mr. Patrick Brooks
Bechtel National, Inc.
401 West A Street, Suite 1000
San Diego, California 92101-7905

Subject: Soil Gas Sample Analyses Report
Site 24
El Toro Marine Corps Air Station, Orange County, California

Dear Mr. Brooks:

Environmental Support Technologies, Inc. (EST) is pleased to provide the analyses results of Tedlar™ bag soil gas samples collected from a vapor extraction system operating at the El Toro Marine Corps Air Station in Orange County, California. Bechtel National, Inc. performed the soil gas sample collection and delivered the samples, under chain-of-custody, to EST for analyses. Soil gas samples were analyzed for volatile organic compounds (VOCs), oxygen (O_2) and carbon dioxide (CO_2).

Laboratory analyses reports for O_2 and CO_2 are included in Appendix A. Laboratory analyses reports, quality assurance/quality control data, and three-point calibration data for VOCs are included in Appendix B. Chain-of-custody forms are provided in Appendix C.

Should you have any questions or comments please contact me at (714) 457-9664.

Sincerely,

Environmental Support Technologies, Inc.

Kirk A. Thomson

Kirk A. Thomson, R.G., R.E.A., C.HG
Project Manager/Principal Hydrogeologist

cc: EST Project File (296TED2.RPT)

23011 Moulton Parkway • Suite E-6 • Laguna Hills, California 92653 • 714/457-9664 • Fax 714/457-0664

LIMITATIONS AND WARRANTIES

This analyses results report has been prepared for the exclusive use of Bechtel National, Inc. and assigned interested parties. The report has been prepared in accordance with generally accepted environmental assessment practices. No other warranty, expressed or implied, is made.

The information provided in this report is based on measurements performed in specific areas during a specific limited period of time. In the event that any changes occur in waste management practices, site conditions, or uses of the property, the results contained in this report should be reviewed and modified or verified in writing by Environmental Support Technologies, Inc. (EST).

Soil gas sample analyses are conducted using laboratory-grade gas chromatography equipment. Chemical compound identification is performed using quantitative methods. Chemical compound identities should be verified using gas chromatography/mass spectrometric analyses methods. Soil gas survey data should be used in conjunction with other site specific data.

Kl A. Thomson

Kirk A. Thomson, R.G., R.E.A., C.HG.
Project Manager/Principal Hydrogeologist

APPENDICES

Appendix A

LABORATORY ANALYSES REPORTS FOR OXYGEN AND CARBON DIOXIDE

SIERRA
LABORATORIES

Date: 6/10/96

Environmental Support Technologies, Inc.		Client Project Number:	Site 24 VOC Source Ana
23011 Moulton Parkway, Suite E-6		Date Sampled:	5/28/96
Laguna Hills, CA 92653		Date Samples Received:	5/28/96
Attention:	Mr. Kirk Thomson	Sierra Project No.:	9605-211

Attached are the results of the chemo-physical analysis of the sample(s) from the project identified above.

The samples were received by Sierra Laboratories, Inc. with a chain of custody record attached or completed at the submittal of the samples.

The analysis were performed according to the prescribed method as outlined by EPA, Standard Methods, and A.S.T.M.

The remaining portions of the samples will be disposed of within 30 days from the date of this report. If you require additional retaining time, please advise us.

Richard K. Forsyth
Laboratory Director

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the clientto whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

26052 MERIT CIRCLE, SUITE 105, LAGUNA HILLS, CALIFORNIA 92653
TELEPHONE: (714) 348-9389 FAX: (714) 348-9115

STERLING

Analytical Laboratory

Sierra Laboratories
26052 Merit Circle
Suite #105
Laguna Hills, CA 92653

June 5, 1996

Attn: Bill Hudson

File No.: 0693031.00 CADHS No: 1166

Lab Folder No.: 4735

LABORATORY REPORT

Samples Received: Water: _____ Soil: _____ Gas: 2

Collected On: May 28, 1996 Received On: May 29, 1996

Sampled From:

Analysis Requested: 2 samples to be analyzed.

Analysis Results: See attached sheets.

Reviewed by: _____ Approved by: _____

2860 Walnut Avenue
Long Beach, CA 90806-1834

(800) 366-9324 • (310) 595-9324
(310) 595-6709 FAX

STERLING

Analytical Laboratory

Major Gas Analysis

Lab I.D.		Method Blank	4735-1	4735-2	4735-2 DUP		
Client Sample I.D.		N/A	73W-2352-02	73W-2352-03	73W-2352-03		
Date Sampled		N/A	5/28/96	5/28/96	5/28/96		
Date Extracted		N/A	N/A	N/A	N/A		
Date Anaylzed		6/3/96	5/30/96	5/30/96	5/30/96		
Matrix		Gas	Gas	Gas	Gas		
Units		% v / v	% v / v	% v / v	% v / v		
Dilution Factor		1	1	1	1		
alyte	R.L.	Results	Results	Results	Results	RPD %	
on Dioxide (CO2)	0.1	< 0.1	N/A	16.8	16.8	0%	
xygen (O2)	0.1	< 0.1	16.8	N/A	N/A	0%	

L. - Reporting Limit

- Not Applicable

SIERRA
LABORATORIES

Date: 6/10/96

Environmental Support Technologies, Inc.		Client Project Number:	Site 24 VOC Source Ana
23011 Moulton Parkway, Suite E-6		Date Sampled:	5/30/96
Laguna Hills, CA 92653		Date Samples Received:	5/30/96
Attention:	Mr. Kirk Thomson	Sierra Project No.:	9605-235

Attached are the results of the chemo-physical analysis of the sample(s) from the project identified above.

The samples were received by Sierra Laboratories, Inc. with a chain of custody record attached or completed at the submittal of the samples.

The analysis were performed according to the prescribed method as outlined by EPA, Standard Methods, and A.S.T.M.

The remaining portions of the samples will be disposed of within 30 days from the date of this report. If you require additional retaining time, please advise us.

Richard K. Forsyth
Laboratory Director

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the clientto whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents

26052 MERIT CIRCLE, SUITE 105, LAGUNA HILLS, CALIFORNIA 92653
TELEPHONE: (714) 348-9389 FAX: (714) 348-9115

STERLING

Analytical Laboratory

June 6, 1996

Sierra Laboratories
26052 Merit Circle
Suite #105
Laguna Hills, CA 92653

Attn: Bill Hudson

File No.: 0693031.00 CADHS No: 1166

Lab Folder No.: 4744

LABORATORY REPORT

Sample Received: Water: _____ Soil: _____ Gas: 1

Collected On: May 30, 1996 Received On: May 31, 1996

Analysis Requested: 1 sample to be analyzed.

Analysis Results: See attached sheet.

Reviewed by: _____ Approved by: _____

2860 Walnut Avenue
Long Beach, CA 90806-1834

(800) 366-9324 • (310) 595-9324
(310) 595-6709 FAX

STERLING

Analytical Laboratory

Major Gas Analysis

Lab I.D.		Method Blank	4744-1	4744-1 DUP			
Client Sample I.D.		N/A	73W2353-02	73W2353-02			
Date Sampled		N/A	5/30/96	5/30/96			
Date Extracted		N/A	N/A	N/A			
Date Anaylzed		6/3/96	6/3/96	6/3/96			
Matrix		Gas	Gas	Gas			
Units		% v / v	% v / v	% v / v			
Dilution Factor		1	1	1			
Analyte	R.L.	Results	Results	Results	RPD %		
Carbon Dioxide (C02)	0.1	< 0.1	12.1	12.1	0%		
Oxygen (O2)	0.1	< 0.1	17.8	17.8	0%		

R.L. - Reporting Limit

N/A - Not Applicable

SIERRA
LABORATORIES

Date: 7/15/96

Environmental Support Technologies, Inc.		Client Project Number:	MCAS El Toro, California
23011 Moulton Parkway, Suite E-6		Date Sampled:	7/8/96
Laguna Hills, CA 92653		Date Samples Received:	7/10/96
Attention:	Mr. Kirk Thomson	Sierra Project No.:	9607-058

Attached are the results of the chemo-physical analysis of the sample(s) from the project identified above.

The samples were received by Sierra Laboratories, Inc. with a chain of custody record attached or completed at the submittal of the samples.

The analysis were performed according to the prescribed method as outlined by EPA, Standard Methods, and A.S.T.M.

The remaining portions of the samples will be disposed of within 30 days from the date of this report. If you require additional retaining time, please advise us.

Richard K. Forsyth
Laboratory Director

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the clientto whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

26052 MERIT CIRCLE, SUITE 105, LAGUNA HILLS, CALIFORNIA 92653
TELEPHONE: (714) 348-9389 FAX: (714) 348-9115

STERLING

Analytical Laboratory

Sierra Laboratories
26052 Merit Circle
Suite #105
Laguna Hills, CA 92653

July 12, 1996

Attn: Rick Forsyth

File No.: 0693031.00 CADHS No: 1166

Lab Folder No.: 4900

LABORATORY REPORT

Sample Received: Water: _____ Soil: _____ Gas: 1

Collected On: July 8, 1996 Received On: July 9, 1996

Analysis Requested: 1 sample to be analyzed.

Analysis Results: See attached sheet.

Reviewed by: _____ Approved by: _____

2860 Walnut Avenue
Long Beach, CA 90806-1834

(800) 366-9324 • (310) 595-9324
(310) 595-6709 FAX

STERLING

Analytical Laboratory

Major Gases Report

Laboratory I.D.	Method Blank	4900-1	4900-1 DUP			
Client Sample I.D.	N/A	9607-058-11578	9607-058-11578			
Date Sampled	N/A	7/8/96	7/8/96			
Date Analyzed	7/9/96	7/9/96	7/9/96			
Matrix	Gas	Gas	Gas			
Units	%, V/V	%, V/V	%, V/V			
Dilution Factor	1	1	1			
Analyte R.L.	**Results**	**Results**	**Results**			
Carbon Dioxide	<1.0	**13.46**	**13.44**			
Oxygen	<1.0	**18.05**	**18.07**			

RL = Reporting Limit *N/A = Not Applicable*

Comments:

Appendix B

LABORATORY ANALYSES REPORTS FOR HALOGENATED AND AROMATIC HYDROCARBONS

(INCLUDING CALIBRATION REPORTS, QUALITY CONTROL REPORTS, EXPLANATION OF METHOD DETECTION LIMITS)

TABLE B-1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
BECHTEL, SITE 24 VOC SOURCE AREA, EL TORO, CALIFORNIA
25-TARGET COMPOUND LIST

PID/ELCD #1 – 5/23/96
FILE: 296GGSGR.WK3

SAMPLE ID			73W2350	73W2350	NA	NA	NA	NA	NA	NA
DATE			5/23/96	5/23/96	NA	NA	NA	NA	NA	NA
TIME			18:36	18:51	NA	NA	NA	NA	NA	NA
INJECTION VOLUME (ul)			500	100	NA	NA	NA	NA	NA	NA
PURGE VOLUME (ml)			NA	NA	NA	NA	NA	NA	NA	NA
VACUUM (in. Hg)			NA	NA	NA	NA	NA	NA	NA	NA
DILUTION FACTOR			1.0	5.0	NA	NA	NA	NA	NA	NA
COMMENTS	RT	ARF								
Dichlorodifluoromethane	2:97	1.25E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	3:33	4.24E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	3:62	3.04E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	3:81	5.43E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloro-trifluoroethane	4:47	1.16E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethene	4:45	3.05E+07	5.46E+03 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Methylene chloride	5:02	9.25E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans-1,2-Dichloroethene	5:31	9.18E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethane	5:78	8.84E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
cis-1,2-Dichloroethene	6:42	1.04E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroform	6:77	1.18E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1-Trichloroethane	7:01	1.03E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	7:21	1.27E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Benzene	7:43	9.96E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2-Dichloroethane	7:48	1.03E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichloroethene	8:23	1.09E+09	2.34E+07 43 *	8.03E+06 74	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Toluene	9:93	9.76E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichlorethane	10:51	9.77E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	10:72	1.22E+09	2.47E+05 ND<1	2.85E+04 ND<5	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1,2-Tetrachloroethane	12:09	1.06E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	12:09	8.77E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta and para-Xylene	12:25	2.20E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho-Xylene	12:86	8.56E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2-Tetrachloroethane	13:87	9.48E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

ND = not detected; analyte is below the reportable limit of quantitation for this sample
RT = retention time
ul = microliter
in. Hg = inches of mercury

Concentrations reported in micrograms per liter (ug/L)
ARF = average response factor
ml = milliliter
* = exceeds calibration range

5/23/96

ANALYST : David M. Pride

REVIEWED BY : Ragi Abraham (RA)

TABLE B-1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
BECHTEL, SITE 24 VOC SOURCE AREA, EL TORO, CALIFORNIA
25-TARGET COMPOUND LIST

PID/ELCD #1 - 5/28/96
FILE: 296HHSGR.WK3

SAMPLE ID			73W2351	73W2352	NA	NA	NA	NA	NA	NA
DATE			5/28/96	5/28/96	NA	NA	NA	NA	NA	NA
TIME			21:16	21:38	NA	NA	NA	NA	NA	NA
INJECTION VOLUME (ul)			500	500	NA	NA	NA	NA	NA	NA
PURGE VOLUME (ml)			NA	NA	NA	NA	NA	NA	NA	NA
VACUUM (in. Hg)			NA	NA	NA	NA	NA	NA	NA	NA
DILUTION FACTOR			1.0	1.0	NA	NA	NA	NA	NA	NA
COMMENTS	RT	ARF								
Dichlorodifluoromethane	2:97	1.25E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	3:33	4.24E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	3:62	3.04E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	3:81	5.43E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloro-trifluoroethane	4:47	1.16E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethene	4:45	3.05E+07	6.10E+03 ND<1	1.80E+04 1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Methylene chloride	5:02	9.25E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans-1,2-Dichloroethene	5:31	9.18E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethane	5:78	8.84E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
cis-1,2-Dichloroethene	6:42	1.04E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroform	6:77	1.18E+09	0.00E+00 ND<1	1.06E+06 2	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1-Trichloroethane	7:01	1.03E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	7:21	1.27E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Benzene	7:43	9.98E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2-Dichloroethane	7:48	1.03E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichloroethene	8:23	1.09E+09	0.00E+00 ND<1	1.29E+07 24	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Toluene	9:93	9.76E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichlorethane	10:51	9.77E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	10:72	1.22E+09	0.00E+00 ND	5.84E+04 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1,2-Tetrachloroethane	12:09	1.06E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	12:09	8.77E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta and para-Xylene	12:25	2.20E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho-Xylene	12:86	8.56E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2-Tetrachloroethane	13:87	9.48E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

ND = not detected; analyte is below the reportable limit of quantitation for this sample
RT = retention time
ul = microliter
in. Hg = inches of mercury

Concentrations reported in micrograms per liter (ug/L)
ARF = average response factor
ml = milliliter
* = exceeds calibration range

5/28/96

ANALYST : David M. Pride

REVIEWED BY : Marcia LeFrancois

ML

TABLE B-1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
BECHTEL, SITE 24 VOC SOURCE AREA, EL TORO, CALIFORNIA
25-TARGET COMPOUND LIST

PID/ELCD #1 – 5/31/96
FILE: 296ISGRP.WK3

SAMPLE ID			73W2353-01	73W2353-01	73W2353-01	73W2354-01	NA	NA	NA	NA
DATE			5/31/96	5/31/96	5/31/96	5/31/96	NA	NA	NA	NA
TIME			13:40	13:57	14:11	14:25	NA	NA	NA	NA
INJECTION VOLUME (ul)			500	25	10	500	NA	NA	NA	NA
PURGE VOLUME (ml)			NA	NA	NA	NA	NA	NA	NA	NA
VACUUM (in. Hg)			NA	NA	NA	NA	NA	NA	NA	NA
DILUTION FACTOR			1.0	20.0	50.0	1.0	NA	NA	NA	NA
COMMENTS	RT	ARF								
Dichlorodifluoromethane	2:96	2.87E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	3:32	6.34E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	3:61	5.62E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	3:79	6.67E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloro-trifluoroethane	4:45	1.49E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethene	4:42	3.76E+07	9.03E+06 481 *	3.15E+05 335	9.84E+04 262	6.79E+03 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Methylene chloride	5:01	1.19E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans-1,2-Dichloroethene	5:29	1.03E+09	1.04E+06 2	0.00E+00 ND<20	0.00E+00 ND<50	0.00E+00 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethane	5:76	1.08E+09	3.42E+06 6	8.17E+04 ND<20	0.00E+00 ND<50	0.00E+00 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
cis-1,2-Dichloroethene	6:40	1.03E+09	1.12E+06 2	2.41E+04 ND<20	0.00E+00 ND<50	0.00E+00 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroform	6:75	1.34E+09	7.30E+05 1	0.00E+00 ND<20	0.00E+00 ND<50	0.00E+00 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1-Trichloroethane	6:99	1.20E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	7:19	1.57E+09	2.90E+06 4	9.17E+04 ND<20	2.78E+04 ND<50	0.00E+00 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Benzene	7:41	1.37E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2-Dichloroethane	7:47	1.10E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichloroethene	8:21	1.21E+09	1.28E+08 211 *	2.36E+07 777 *	1.50E+07 1240	2.82E+04 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Toluene	9:90	1.52E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichlorethane	10:50	1.19E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	10:72	1.32E+09	8.55E+06 13	1.54E+05 ND<20	6.80E+04 ND<50	0.00E+00 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1,2-Tetrachloroethane	12:08	1.24E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	12:06	1.15E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta and para-Xylene	12:22	3.28E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho-Xylene	12:84	1.18E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2-Tetrachloroethane	13:86	1.23E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

ND = not detected; analyte is below the reportable limit of quantitation for this sample
RT = retention time
ul = microliter
in. Hg = inches of mercury

Concentrations reported in micrograms per liter (ug/L)
ARF = average response factor
ml = milliliter
* = exceeds calibration range

5/31/96

ANALYST : Ragi Abraham

REVIEWED BY : Marcia LeFrancois

TABLE B-1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
BECHTEL, MCAS EL TORO, CALIFORNIA
25-TARGET COMPOUND LIST

PID/ELCD #1 - 6/12/96
FILE: 286JJSGBP.WK3

SAMPLE ID			73W235501	73W235501	73W235501	73W2356	73W2356	NA	NA	NA
DATE			6/12/96	6/12/96	6/12/96	6/12/96	6/12/96	NA	NA	NA
TIME			16:40	16:56	17:11	17:28	17:44	NA	NA	NA
INJECTION VOLUME (ul)			500	25	10	500	10	NA	NA	NA
PURGE VOLUME (ml)			NA	NA	NA	NA	NA	NA	NA	NA
VACUUM (in. Hg)			NA	NA	NA	NA	NA	NA	NA	NA
DILUTION FACTOR			1.0	20.0	50.0	1.0	50.0	NA	NA	NA
COMMENTS	RT	ARF	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample			
Dichlorodifluoromethane	2:87	9.69E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	3:20	4.52E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	3:48	1.95E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	3:67	5.18E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloro-trifluoroethane	4:28	6.74E+08	8.20E+07 184 *	7.84E+06 453	2.59E+06 384	4.48E+07 133 *	3.48E+06 516	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethene	4:26	3.78E+07	4.75E+06 251 *	2.77E+05 293	9.23E+04 244	7.54E+06 399 *	1.09E+05 288	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Methylene chloride	4:91	1.10E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans-1,2-Dichloroethene	5:19	9.98E+08	4.74E+05 ND<1	0.00E+00 ND<20	0.00E+00 ND<50	9.15E+05 2	0.00E+00 ND<50	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethane	5:68	1.03E+09	3.14E+06 6	8.44E+04 ND<20	1.88E+04 ND<50	2.79E+06 ND<50	2.45E+04 ND<50	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
cis-1,2-Dichloroethene	6:34	9.71E+08	8.01E+05 2	1.40E+04 ND<20	0.00E+00 ND<50	7.99E+05 2	0.00E+00 ND<50	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Bromochloromethane (Surrogate)	6:57	5.36E+08	3.69E+06 138%	2.67E+06 100%	2.39E+06 89%	4.13E+06 154%	2.90E+06 108%	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroform	6:70	1.30E+09	1.18E+06 2	0.00E+00 ND<20	0.00E+00 ND<50	1.06E+06 2	0.00E+00 ND<50	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1-Trichloroethane	6:93	1.23E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	7:12	1.59E+09	3.04E+06 4	1.02E+05 ND<20	2.41E+04 ND<50	2.51E+06 3	3.34E+04 ND<50	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Benzene	7:36	1.20E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2-Dichloroethane	7:41	1.06E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichloroethene	8:18	1.15E+09	1.22E+08 211 *	2.09E+07 725 *	1.33E+07 1150	1.21E+08 210 *	1.51E+07 1310	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Toluene	9:84	1.17E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichlorethane	10:43	1.06E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	10:65	9.95E+08	8.49E+06 17	1.01E+05 ND<20	2.92E+04 ND<50	7.05E+06 14	3.42E+04 ND<50	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chlorobenzene (Surrogate)	11:87	8.93E+07	5.91E+05 132%	4.24E+05 95%	4.13E+05 93%	6.09E+05 136%	4.22E+05 94%	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1,2-Tetrachloroethane	12:00	1.12E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	12:00	1.33E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta and para-Xylene	12:16	3.04E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho-Xylene	12:77	1.08E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2-Tetrachloroethane	13:77	9.81E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

ND = not detected; analyte is below the reportable limit of quantitation for this sample
RT = retention time
ul = microliter
in. Hg = inches of mercury

Concentrations reported in micrograms per liter (ug/L)
ARF = average response factor
ml = milliliter
* = exceeds calibration range

6/12/96

ANALYST: Ragi Abraham

REVIEWED BY: Marcia LeFrancois

ML

TABLE B-1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
BECHTEL, MCAS EL TORO, CALIFORNIA
25-TARGET COMPOUND LIST

PID/ELCD #1 - 6/14/96
FILE: 296KKSGRP.WK3

SAMPLE ID			73W235701	73W235701	73W235701	73W235701	73W235801	73W235801	73W235901	73W236001
DATE			6/14/96	6/14/96	6/14/96	6/14/96	6/14/96	6/14/96	6/14/96	6/14/96
TIME			6:30	7:44	7:58	8:12	16:14	16:31	16:47	17:02
INJECTION VOLUME (ul)			500	50	25	10	50	10	10	10
PURGE VOLUME (ml)			NA	NA	NA	NA	NA	NA	NA	NA
VACUUM (in. Hg)			NA	NA	NA	NA	NA	NA	NA	NA
DILUTION FACTOR			1.0	10.0	20.0	50.0	10.0	50.0	50.0	50.0
COMMENTS	RT	ARF	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample
Dichlorodifluoromethane	2:87	9.69E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	3:20	4.52E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	3:48	1.95E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	3:87	5.18E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloro-trifluoroethane	4:26	6.74E+08	4.85E+07 144 *	1.14E+07 338 *	8.31E+06 374	2.11E+06 313	1.25E+07 371 *	1.87E+06 277	8.73E+06 997	1.77E+06 262
1,1-Dichloroethene	4:26	3.78E+07	2.02E+06 107 *	5.39E+05 285 *	2.28E+05 241	9.79E+04 259	5.79E+05 306 *	6.71E+04 178	2.25E+05 595	6.54E+04 173
Methylene chloride	4:91	1.10E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans-1,2-Dichloroethene	5:19	9.98E+08	4.81E+05 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethane	5:68	1.03E+09	1.30E+06 3	1.19E+05 ND<10	4.11E+04 ND<20	0.00E+00 ND<50	1.20E+05 ND<10	0.00E+00 ND<50	7.35E+04 ND<50	0.00E+00 ND<50
cis-1,2-Dichloroethene	6:34	9.71E+08	4.57E+05 ND<1	3.07E+04 ND<10	0.00E+00 ND	0.00E+00 ND	3.44E+04 ND<10	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Bromochloromethane (Surrogate)	6:57	5.36E+08	2.16E+06 81%	2.72E+06 102%	2.24E+06 83%	2.13E+06 79%	1.98E+06 74%	2.37E+06 88%	2.83E+06 105%	2.67E+06 100%
Chloroform	6:70	1.30E+09	5.75E+05 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1-Trichloroethane	6:93	1.23E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	7:12	1.59E+09	1.53E+06 2	1.99E+05 ND<10	9.83E+04 ND<20	1.97E+04 ND<50	1.41E+05 ND<10	0.00E+00 ND<50	0.00E+00 ND<50	0.00E+00 ND<50
Benzene	7:36	1.20E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2-Dichloroethane	7:41	1.06E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichloroethene	8:16	1.15E+09	7.92E+07 137 *	2.65E+07 460 *	1.69E+07 588 *	1.25E+07 1090	2.85E+07 494 *	1.09E+07 951	0.00E+00 ND<50	1.02E+07 884
Toluene	9:84	1.17E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichlorethane	10:43	1.06E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	10:65	9.95E+08	2.38E+06 5	1.19E+05 ND<10	2.48E+04 ND<20	0.00E+00 ND<50	2.17E+05 ND<10	0.00E+00 ND<50	0.00E+00 ND<50	0.00E+00 ND<50
Chlorobenzene (Surrogate)	11:87	8.93E+07	4.10E+05 92%	4.47E+05 100%	3.97E+05 89%	4.99E+05 112%	3.33E+05 75%	4.13E+05 92%	4.70E+05 105%	3.92E+05 88%
1,1,1,2-Tetrachloroethane	12:00	1.12E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	12:00	1.33E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta and para-Xylene	12:16	3.04E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho-Xylene	12:77	1.08E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2-Tetrachloroethane	13:77	9.81E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

ND = not detected; analyte is below the reportable limit of quantitation for this sample
RT = retention time
ul = microliter
in. Hg = inches of mercury

Concentrations reported in micrograms per liter (ug/L)
ARF = average response factor
ml = milliliter
* = exceeds calibration range

6/14/96

ANALYST : Ragi Abraham

REVIEWED BY : Marcia LeFrancois

ML

TABLE B–1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
BECHTEL, MCAS EL TORO, CALIFORNIA
25–TARGET COMPOUND LIST

PID/ELCD/FID – 6/19/96
FILE: 296LSGB.WK3

SAMPLE ID			73W236101	73W236101	73W236101	73W236101	73W236101	73W236101	NA	NA
DATE			6/19/96	6/19/96	6/19/96	6/19/96	6/19/96	6/19/96	NA	NA
TIME			12:32	12:49	13:34	14:00	14:43	14:57	NA	NA
INJECTION VOLUME (ul)			500	10	25	20	20	5	NA	NA
PURGE VOLUME (ml)			NA	NA	NA	NA	NA	NA	NA	NA
VACUUM (in. Hg)			NA	NA	NA	NA	NA	NA	NA	NA
DILUTION FACTOR			1.0	50.0	20.0	25.0	25.0	100.0	NA	NA
COMMENTS	RT	ARF	Tedlar Bag Sample	Tedlar Bag Syringe Leak	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample		
Dichlorodifluoromethane	2:77	4.34E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	3:05	1.70E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	3:37	6.47E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	3:56	1.59E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2–Trichloro–trifluoroethane	4:17	3.69E+09	1.60E+08 67 *	0.00E+00 ND<50	3.86E+07 419	2.52E+07 342	3.10E+07 420	2.27E+06 123	0.00E+00 ND	0.00E+00 ND
1,1–Dichloroethene	4:15	6.53E+07	1.63E+07 499 *	0.00E+00 ND<50	9.45E+05 579 *	5.04E+05 386	5.71E+05 437	7.28E+04 223	0.00E+00 ND	0.00E+00 ND
Methylene chloride	4:71	2.61E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans–1,2–Dichloroethene	5:01	2.90E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1–Dichloroethane	5:46	2.85E+09	8.73E+06 6	0.00E+00 ND<50	0.00E+00 ND<20	0.00E+00 ND<25	0.00E+00 ND<25	0.00E+00 ND<100	0.00E+00 ND	0.00E+00 ND
cis–1,2–Dichloroethene	6:08	2.78E+09	2.65E+06 2	0.00E+00 ND<50	0.00E+00 ND<20	0.00E+00 ND<25	0.00E+00 ND<25	0.00E+00 ND<100	0.00E+00 ND	0.00E+00 ND
Bromochloromethane (Surrogate)	6:23	1.49E+09	1.21E+07 163%	9.02E+06 121%	8.32E+06 111%	9.52E+06 128%	9.45E+06 127%	9.13E+06 122%	0.00E+00 ND	0.00E+00 ND
Chloroform	6:41	5.39E+09	1.03E+06 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1–Trichloroethane	6:68	4.97E+09	2.58E+05 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	6:88	6.45E+09	1.16E+07 4	0.00E+00 ND<50	0.00E+00 ND<20	0.00E+00 ND<25	0.00E+00 ND<25	0.00E+00 ND<100	0.00E+00 ND	0.00E+00 ND
Benzene	7:09	2.59E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2–Dichloroethane	7:10	4.72E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichloroethene	7:87	3.88E+09	2.29E+08 118 *	3.51E+06 91	8.97E+07 925 *	7.13E+07 919 *	7.63E+07 983 *	2.50E+07 1290	0.00E+00 ND	0.00E+00 ND
Toluene	9:57	2.74E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2–Trichlorethane	10:14	3.50E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	10:41	4.84E+09	1.06E+07 5	0.00E+00 ND<50	7.22E+05 ND<20	0.00E+00 ND<25	0.00E+00 ND<25	0.00E+00 ND<100	0.00E+00 ND	0.00E+00 ND
Chlorobenzene (Surrogate)	11:69	2.77E+08	1.35E+08 97%	1.29E+08 93%	1.13E+08 82%	1.31E+08 95%	1.16E+08 84%	1.11E+08 80%	0.00E+00 ND	0.00E+00 ND
1,1,1,2–Tetrachloroethane	11:84	4.59E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	11:88	2.39E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta and para–Xylene	12:05	5.57E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho–Xylene	12:71	2.27E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2–Tetrachloroethane	13:79	3.73E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

ND = not detected; analyte is below the reportable limit of quantitation for this sample
RT = retention time
ul = microliter
in. Hg = inches of mercury

Concentrations reported in micrograms per liter (ug/L)
ARF = average response factor
ml = milliliter
* = exceeds calibration range

6/19/96

ANALYST : Ragi Abraham

REVIEWED BY : Marcia LeFrancois

TABLE B-1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
BECHTEL, MCAS EL TORO, CALIFORNIA
25-TARGET COMPOUND LIST

PID/ELCD #2 - 6/20/96
FILE: 206MMSGEP.WK3

SAMPLE ID			73W236201	73W236201	73W236401	73W236401	NA	NA	NA	NA
DATE			6/20/96	6/20/96	6/20/96	6/20/96	NA	NA	NA	NA
TIME			16:14	16:32	16:48	17:04	NA	NA	NA	NA
INJECTION VOLUME (ul)			10	50	10	25	NA	NA	NA	NA
PURGE VOLUME (ml)			NA	NA	NA	NA	NA	NA	NA	NA
VACUUM (in. Hg)			NA	NA	NA	NA	NA	NA	NA	NA
DILUTION FACTOR			50.0	10.0	50.0	20.0	NA	NA	NA	NA
COMMENTS	RT	ARF	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample				
Dichlorodifluoromethane	2:77	4.34E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	3:05	1.70E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	3:37	8.47E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	3:56	1.59E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloro-trifluoroethane	4:17	3.69E+09	1.22E+06 33	3.94E+07 214	2.47E+06 67	9.04E+06 98	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethene	4:15	6.53E+07	1.39E+05 214	1.32E+06 403 *	1.46E+05 223	3.05E+05 187	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Methylene chloride	4:71	2.81E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans-1,2-Dichloroethene	5:01	2.90E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethane	5:46	2.85E+09	0.00E+00 ND	3.57E+05 ND<10	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
cis-1,2-Dichloroethene	6:08	2.76E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Bromochloromethane (Surrogate)	6:23	1.49E+09	6.38E+06 86%	9.73E+06 131%	8.81E+06 118%	8.33E+06 112%	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroform	6:41	5.39E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1-Trichloroethane	6:68	4.97E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	6:88	6.45E+09	0.00E+00 ND	9.29E+05 ND<10	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Benzene	7:09	2.59E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2-Dichloroethane	7:10	4.72E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichloroethene	7:87	3.88E+09	3.31E+07 853	1.22E+08 629 *	4.65E+07 1199	7.00E+07 721 *	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Toluene	9:57	2.74E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichlorethane	10:14	3.50E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	10:41	4.64E+09	0.00E+00 ND	9.10E+05 ND<10	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chlorobenzene (Surrogate)	11:69	2.77E+08	1.07E+08 77%	1.10E+08 79%	1.35E+08 97%	1.08E+08 77%	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1,2-Tetrachloroethane	11:84	4.59E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	11:86	2.39E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta and para-Xylene	12:05	5.57E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho-Xylene	12:71	2.27E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2-Tetrachloroethane	13:79	3.73E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

ND = not detected; analyte is below the reportable limit of quantitation for this sample
RT = retention time
ul = microliter
in. Hg = inches of mercury

Concentrations reported in micrograms per liter (ug/L)
ARF = average response factor
ml = milliliter
* = exceeds calibration range

6/20/96

ANALYST : Ragi Abraham

REVIEWED BY : David Pride

TABLE B-1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
BECHTEL, MCAS EL TORO, CALIFORNIA
25-TARGET COMPOUND LIST

PID/ELCD #2 - 6/21/96
FILE: 296NNSGRP.WK3

SAMPLE ID			73W2365	NA	NA	NA	NA	NA	NA	NA
DATE			6/21/96	NA	NA	NA	NA	NA	NA	NA
TIME			17:33	NA	NA	NA	NA	NA	NA	NA
INJECTION VOLUME (ul)			10	NA	NA	NA	NA	NA	NA	NA
PURGE VOLUME (ml)			NA	NA	NA	NA	NA	NA	NA	NA
VACUUM (in. Hg)			NA	NA	NA	NA	NA	NA	NA	NA
DILUTION FACTOR			50.0	NA	NA	NA	NA	NA	NA	NA
COMMENTS	RT	ARF	Tedlar Bag Sample							
Dichlorodifluoromethane	2:77	4.34E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	3:05	1.70E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	3:37	8.47E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	3:56	1.59E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloro-trifluoroethane	4:17	3.69E+09	2.31E+06 63	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethene	4:15	6.53E+07	1.04E+05 159	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Methylene chloride	4:71	2.61E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans-1,2-Dichloroethene	5:01	2.90E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethane	5:46	2.85E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
cis-1,2-Dichloroethene	6:08	2.78E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Bromochloromethane (Surrogate)	6:23	1.49E+09	8.79E+06 118%	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroform	6:41	5.39E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1-Trichloroethane	6:68	4.97E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	6:88	6.45E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Benzene	7:09	2.59E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2-Dichloroethane	7:10	4.72E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichloroethene	7:87	3.88E+09	3.66E+07 945	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Toluene	9:57	2.74E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichlorethane	10:14	3.50E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	10:41	4.64E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chlorobenzene (Surrogate)	11:69	2.77E+08	1.10E+06 80%	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1,2-Tetrachloroethane	11:84	4.59E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	11:86	2.39E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta and para-Xylene	12:05	5.57E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho-Xylene	12:71	2.27E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2-Tetrachloroethane	13:79	3.73E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

ND = not detected; analyte is below the reportable limit of quantitation for this sample
RT = retention time
ul = microliter
in. Hg = inches of mercury

Concentrations reported in micrograms per liter (ug/L)
ARF = average response factor
ml = milliliter
* = exceeds calibration range

6/21/96

ANALYST : Ragi Abraham

REVIEWED BY : Marcia LeFrancois

TABLE B–1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
BECHTEL, MCAS EL TORO, CALIFORNIA
25–TARGET COMPOUND LIST

PID/ELCD #2 – 6/25/96
FILE: 296DOSGR.WK3

SAMPLE ID			73W2366	73W2366	73W2366	73W2367	NA	NA	NA	NA
DATE			6/25/96	6/25/96	6/25/96	6/25/96	NA	NA	NA	NA
TIME			19:47	20:07	20:26	20:42	NA	NA	NA	NA
INJECTION VOLUME (ul)			500	50	10	500	NA	NA	NA	NA
PURGE VOLUME (ml)			NA	NA	NA	NA	NA	NA	NA	NA
VACUUM (in. Hg)			NA	NA	NA	NA	NA	NA	NA	NA
DILUTION FACTOR			1.0	10.0	50.0	1.0	NA	NA	NA	NA
COMMENTS	RT	ARF	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample				
Dichlorodifluoromethane	2:77	4.34E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	3:05	1.70E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	3:37	8.47E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	3:56	1.59E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2–Trichloro–trifluoroethane	4:17	3.69E+09	7.09E+07 38 *	1.26E+07 68	2.55E+06 69	0.00E+00 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1–Dichloroethene	4:15	6.53E+07	3.08E+06 94 *	2.74E+05 84	7.08E+04 109	0.00E+00 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Methylene chloride	4:71	2.81E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans–1,2–Dichloroethene	5:01	2.90E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1–Dichloroethane	5:46	2.85E+09	1.98E+06 1	0.00E+00 ND<10	0.00E+00 ND<50	0.00E+00 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
cis–1,2–Dichloroethene	6:08	2.76E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Bromochloromethane (Surrogate)	6:23	1.49E+09	1.52E+07 204%	1.24E+07 166%	9.51E+06 128%	8.69E+06 116%	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroform	6:41	5.39E+09	5.22E+05 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1–Trichloroethane	6:68	4.97E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	6:88	6.45E+09	2.66E+06 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Benzene	7:09	2.59E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2–Dichloroethane	7:10	4.72E+09	6.70E+05 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichloroethene	7:87	3.88E+09	1.76E+06 91 *	6.96E+07 359 *	2.49E+07 641	0.00E+00 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Toluene	9:57	2.74E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2–Trichlorethane	10:14	3.50E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	10:41	4.64E+09	3.91E+06 2	0.00E+00 ND<10	0.00E+00 ND<50	0.00E+00 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chlorobenzene (Surrogate)	11:69	2.77E+08	1.02E+06 73%	1.07E+06 77%	1.15E+06 83%	1.07E+06 77%	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1,2–Tetrachloroethane	11:84	4.59E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	11:88	2.39E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta and para–Xylene	12:05	5.57E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho–Xylene	12:71	2.27E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2–Tetrachloroethane	13:79	3.73E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

ND = not detected; analyte is below the reportable limit of quantitation for this sample
RT = retention time
ul = microliter
in. Hg = inches of mercury

Concentrations reported in micrograms per liter (ug/L)
ARF = average response factor
ml = milliliter
* = exceeds calibration range

6/25/96

ANALYST : David M. Pride

REVIEWED BY : Ragi Abraham

TABLE B-1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
BECHTEL, MCAS EL TORO, CALIFORNIA
25-TARGET COMPOUND LIST

PIDVELCO/PS 7/7/96
FILE: 298PESGRP.WK1

SAMPLE ID			73W2368-01	73W2368-01	73W2368-01	73W2369-01	73W2369-01	NA	NA	NA
DATE			7/1/96	7/1/96	7/1/96	7/1/96	7/1/96	NA	NA	NA
TIME			8:45	9:02	9:20	9:34	9:53	NA	NA	NA
INJECTION VOLUME (ul)			10	100	50	10	500	NA	NA	NA
PURGE VOLUME (ml)			NA	NA	NA	NA	NA	NA	NA	NA
VACUUM (in. Hg)			NA	NA	NA	NA	NA	NA	NA	NA
DILUTION FACTOR			50.0	5.0	10.0	50.0	1.0	NA	NA	NA
COMMENTS	RT	ARF	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample			
Dichlorodifluoromethane	2:87	9.89E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	3:20	4.52E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	3:48	1.95E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	3:67	5.18E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloro-trifluoroethane	4:26	6.74E+08	0.00E+00 ND<50	2.05E+08 30	7.86E+05 23	0.00E+00 ND<50	0.00E+00 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethene	4:26	3.78E+07	0.00E+00 ND<50	1.10E+05 29	5.85E+04 30	0.00E+00 ND<50	0.00E+00 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Methylene chloride	4:91	1.10E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans-1,2-Dichloroethene	5:19	9.98E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethane	5:68	1.03E+09	0.00E+00 ND	1.49E+04 ND<5	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
cis-1,2-Dichloroethene	6:34	9.71E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Bromochloromethane (Surrogate)	6:57	5.36E+08	2.27E+06 85%	2.26E+06 85%	2.26E+06 84%	2.25E+06 84%	2.69E+06 100%	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroform	6:70	1.30E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1-Trichloroethane	6:93	1.23E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	7:12	1.59E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Benzene	7:38	1.20E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2-Dichloroethane	7:41	1.06E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichloroethene	8:16	1.15E+09	7.04E+05 61	1.82E+07 140 *	1.11E+07 194	0.00E+00 ND<50	0.00E+00 ND<1	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Toluene	9:84	1.17E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichlorethane	10:43	1.06E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	10:65	9.95E+08	0.00E+00 ND	5.55E+04 ND<5	2.17E+04 ND<10	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chlorobenzene (Surrogate)	11:87	8.93E+07	4.74E+05 106%	4.50E+05 101%	4.45E+05 100%	4.73E+05 106%	4.45E+05 100%	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1,2-Tetrachloroethane	12:00	1.12E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	12:00	1.41E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta and para-Xylene	12:16	3.04E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho-Xylene	12:77	1.08E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2-Tetrachloroethane	13:77	9.81E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

ND = not detected; analyte is below the reportable limit of quantitation for this sample
RT = retention time
ul = microliter
In. Hg = inches of mercury

Concentrations reported in micrograms per liter (ug/L)
ARF = average response factor
ml = milliliter
* = exceeds calibration range

7/1/96

ANALYST : Badi Abraham

REVIEWED BY : David M. Pride

TABLE B-1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
BECHTEL, MCAS EL TORO, CALIFORNIA
25-TARGET COMPOUND LIST

PID/ELCD #2 - 7/2/96
FILE: 298DQ3GFLWK3

SAMPLE ID			73W2370	73W2370	73W2370	73W2370	NA	NA	NA	NA
DATE			7/2/96	7/2/96	7/2/96	7/2/96	NA	NA	NA	NA
TIME			9:25	9:40	10:32	10:55	NA	NA	NA	NA
INJECTION VOLUME (ul)			10	100	50	50	NA	NA	NA	NA
PURGE VOLUME (ml)			NA	NA	NA	NA	NA	NA	NA	NA
VACUUM (in. Hg)			NA	NA	NA	NA	NA	NA	NA	NA
DILUTION FACTOR			50.0	5.0	10.0	10.0	NA	NA	NA	NA
COMMENTS	RT	ARF	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample	Tedlar Bag Sample				
Dichlorodifluoromethane	2:77	4.34E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	3:05	1.70E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	3:37	8.47E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	3:58	1.59E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloro-trifluoroethane	4:17	3.69E+09	0.00E+00 ND<50	3.19E+07 87	1.02E+08 ND<10	2.52E+08 14	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethene	4:15	6.53E+07	0.00E+00 ND<50	5.92E+05 91	4.15E+04 13	6.43E+04 20	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Methylene chloride	4:71	2.81E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans-1,2-Dichloroethene	5:01	2.90E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethane	5:46	2.85E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
cis-1,2-Dichloroethene	6:08	2.76E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Bromochloromethane (Surrogate)	6:23	1.49E+09	8.78E+08 118%	1.02E+07 137%	1.39E+07 187%	7.82E+08 105%	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroform	6:41	5.39E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1-Trichloroethane	6:68	4.97E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	6:88	6.45E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Benzene	7:09	2.59E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2-Dichloroethane	7:10	4.72E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichloroethene	7:87	3.88E+09	2.46E+08 63	9.90E+07 255 *	2.20E+07 113	4.49E+07 232	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Toluene	9:57	2.74E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichlorethane	10:14	3.50E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	10:41	4.64E+09	0.00E+00 ND	1.20E+08 ND<5	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chlorobenzene (Surrogate)	11:69	2.77E+08	1.18E+08 85%	1.19E+08 86%	1.18E+08 85%	1.28E+08 92%	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1,2-Tetrachloroethane	11:84	4.59E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	11:88	2.39E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta and para-Xylene	12:05	5.57E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho-Xylene	12:71	2.27E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2-Tetrachloroethane	13:79	3.73E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

ND = not detected; analyte is below the reportable limit of quantitation for this sample
RT = retention time
ul = microliter
in. Hg = inches of mercury

Concentrations reported in micrograms per liter (ug/L)
ARF = average response factor
ml = milliliter
* = exceeds calibration range

7/2/98

ANALYST : David M. Pride

REVIEWED BY : Raol Abraham RA

TABLE B-1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
BECHTEL, MCAS EL TORO, CALIFORNIA
25-TARGET COMPOUND LIST

PID/ELCD #1 - 7/5/96
FILE: 296FIBSGRP.WK1

SAMPLE ID			73W2371-01	NA	NA	NA	NA	NA	NA	NA
DATE			7/5/96	NA	NA	NA	NA	NA	NA	NA
TIME			15:34	NA	NA	NA	NA	NA	NA	NA
INJECTION VOLUME (ul)			10	NA	NA	NA	NA	NA	NA	NA
PURGE VOLUME (ml)			NA	NA	NA	NA	NA	NA	NA	NA
VACUUM (in. Hg)			NA	NA	NA	NA	NA	NA	NA	NA
DILUTION FACTOR			50.0	NA	NA	NA	NA	NA	NA	NA
COMMENTS	RT	ARF	Tedlar Bag Sample							
Dichlorodifluoromethane	2:87	9.89E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	3:20	4.52E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	3:48	1.95E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	3:67	5.18E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloro-trifluoroethane	4:28	6.74E+08	5.72E+05 85	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethene	4:26	3.78E+07	2.63E+04 69	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Methylene chloride	4:91	1.10E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans-1,2-Dichloroethene	5:19	9.98E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethane	5:68	1.03E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
cis-1,2-Dichloroethene	6:34	9.71E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Bromochloromethane (Surrogate)	6:57	5.36E+08	2.78E+06 104%	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroform	6:70	1.30E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1-Trichloroethane	6:93	1.23E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	7:12	1.59E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Benzene	7:36	1.20E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2-Dichloroethane	7:41	1.06E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichloroethene	8:16	1.15E+09	4.91E+06 427	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Toluene	9:64	1.17E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichlorethane	10:43	1.06E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	10:65	9.95E+08	6.47E+04 ND<50	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chlorobenzene (Surrogate)	11:87	8.93E+07	4.92E+05 110%	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1,2-Tetrachloroethane	12:00	1.12E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	12:00	1.41E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta and para-Xylene	12:16	3.04E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho-Xylene	12:77	1.08E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2-Tetrachloroethane	13:77	9.81E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

ND = not detected; analyte is below the reportable limit of quantitation for this sample
RT = retention time
ul = microliter
In. Hg = inches of mercury

Concentrations reported in micrograms per liter (ug/L)
ARF = average response factor
ml = milliliter
* = exceeds calibration range

7/5/96

ANALYST : Ragi Abraham

REVIEWED BY : David M. Pride

DP

TABLE B-1
HALOGENATED AND AROMATIC HYDROCARBONS FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES BECHTEL, MCAS EL TORO, CALIFORNIA 25-TARGET COMPOUND LIST

PID/ELCD #1 - 7/10/96
FILE: 28SSSGHP.WK3

SAMPLE ID			73W2373-01	NA	NA	NA	NA	NA	NA	NA
DATE			7/10/96	NA	NA	NA	NA	NA	NA	NA
TIME			12:49	NA	NA	NA	NA	NA	NA	NA
INJECTION VOLUME (ul)			10	NA	NA	NA	NA	NA	NA	NA
PURGE VOLUME (ml)			NA	NA	NA	NA	NA	NA	NA	NA
VACUUM (in. Hg)			NA	NA	NA	NA	NA	NA	NA	NA
DILUTION FACTOR			50.0	NA	NA	NA	NA	NA	NA	NA
COMMENTS	RT	ARF	Tedlar Bag Sample							
Dichlorodifluoromethane	2:87	9.69E+07	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	3:20	4.52E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	3:48	1.95E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	3:87	5.18E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloro-trifluoroethane	4:28	6.74E+08	2.19E+05 ND<50	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethene	4:26	3.78E+07	2.70E+04 72	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Methylene chloride	4:91	1.10E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans-1,2-Dichloroethene	5:19	9.98E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethane	5:88	1.03E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
cis-1,2-Dichloroethene	6:34	9.71E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Bromochloromethane (Surrogate)	6:57	5.36E+08	2.03E+06 76%	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroform	6:70	1.30E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1-Trichloroethane	6:93	1.23E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	7:12	1.59E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Benzene	7:36	1.20E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2-Dichloroethane	7:41	1.06E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichloroethene	8:16	1.15E+09	4.63E+08 402	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Toluene	9:84	1.17E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichlorethane	10:43	1.06E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	10:65	9.95E+08	1.04E+05 ND<50	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chlorobenzene (Surrogate)	11:87	8.93E+07	5.17E+05 116%	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1,2-Tetrachloroethane	12:00	1.12E+09	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	12:00	1.41E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta and para-Xylene	12:16	3.04E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho-Xylene	12:77	1.08E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2-Tetrachloroethane	13:77	9.81E+08	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

ND = not detected; analyte is below the reportable limit of quantitation for this sample
RT = retention time
ul = microliter
in. Hg = inches of mercury

Concentrations reported in micrograms per liter (ug/L)
ARF = average response factor
ml = milliliter
* = exceeds calibration range

7/10/96

ANALYST : David M. Pride

REVIEWED BY : Marcia LeFrancois

TABLE B-2
QUALITY ASSURANCE/QUALITY CONTROL REPORT
DAILY MID POINT, BLANK ANALYSIS, AND LAST GC TEST RUN
MAY 23, 1996

PID/ELCD #1

FILE: 296GGOCM.WK

		DAILY MID POINT			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L) INJECTION VOLUME(uL) COMPOUND/WEIGHT(ug)	RT	5000 1.00 0.00500	AVERAGE RESPONSE FACTOR	PERCENT DIFFERENCE	AMBIENT AIR 500	5000 1.00 0.00500	AVERAGE RESPONSE FACTOR	PERCENT DIFFERENCE
Dichlorodifluoromethane	2:95	0			0.00E+00	0		
RF		0.00E+00	1.25E+08	NA	ND	0.00E+00	1.25E+08	NA
Vinyl chloride	3:31	0			0.00E+00	0		
RF		0.00E+00	4.24E+08	NA	ND	0.00E+00	4.24E+08	NA
Chloroethane	3:60	0			0.00E+00	0		
RF		0.00E+00	3.04E+08	NA	ND	0.00E+00	3.04E+08	NA
Trichlorofluoromethane	3:79	0			0.00E+00	0		
RF		0.00E+00	5.43E+08	NA	ND	0.00E+00	5.43E+08	NA
1,1,2-Trichloro-trifluoroethane	4:44	0			0.00E+00	0		
RF		0.00E+00	1.16E+09	NA	ND	0.00E+00	1.16E+09	NA
1,1-Dichloroethene (PID)	4:40	153329			0.00E+00	157770		
RF		3.07E+07	3.05E+07	1	ND	3.16E+07	3.05E+07	3
Methylene chloride	5:00	0			0.00E+00	0		
RF		0.00E+00	9.25E+08	NA	ND	0.00E+00	9.25E+08	NA
trans-1,2-Dichloroethene	5:28	4579457			0.00E+00	4355597		
RF		9.16E+08	9.18E+08	-0	ND	8.71E+08	9.18E+08	-5
1,1-Dichloroethane	5:76	4533657			0.00E+00	4279145		
RF		9.07E+08	8.84E+08	3	ND	8.56E+08	8.84E+08	-3
Cis-1,2-Dichloroethene	6:41	5393674			0.00E+00	4785572		
RF		1.08E+09	1.04E+09	4	ND	9.57E+08	1.04E+09	-8
Chloroform	6:75	0			0.00E+00	0		
RF		0.00E+00	1.18E+09	NA	ND	0.00E+00	1.18E+09	NA
1,1,1-Trichloroethane	7:00	5336477			0.00E+00	4503718		
RF		1.07E+09	1.03E+09	4	ND	9.01E+08	1.03E+09	-13
Carbon tetrachloride	7:20	0			0.00E+00	0		
RF		0.00E+00	1.27E+09	NA	ND	0.00E+00	1.27E+09	NA
Benzene (PID)	7:40	534827			0.00E+00	423633		
RF		1.07E+08	9.96E+07	7	ND	8.47E+07	9.96E+07	-15
1,2-Dichloroethane	7:47	5449461			0.00E+00	4407312		
RF		1.09E+09	1.03E+09	6	ND	8.81E+08	1.03E+09	-14
Trichloroethene	8:21	5570772			0.00E+00	4653507		
RF		1.11E+09	1.09E+09	2	ND	9.31E+08	1.09E+09	-15
Toluene (PID)	9:91	532228			0.00E+00	515667		
RF		1.06E+08	9.76E+07	9	ND	1.03E+08	9.76E+07	6
1,1,2-Trichloroethane	10:51	4717632			0.00E+00	4142631		
RF		9.44E+08	9.77E+08	-3	ND	8.29E+08	9.77E+08	-15
Tetrachloroethene	10:72	6237314			0.00E+00	5465118		
RF		1.25E+09	1.22E+09	2	ND	1.09E+09	1.22E+09	-10
1,1,1,2-Tetrachloroethane	12:10	0			0.00E+00	0		
RF		0.00E+00	1.06E+09	NA	ND	0.00E+00	1.06E+09	NA
Ethylbenzene (PID)	12:08	0			0.00E+00	0		
RF		0.00E+00	8.77E+07	NA	ND	0.00E+00	8.77E+07	NA
m,p-Xylene (PID)	12:24	1240970			0.00E+00	960810		
RF		2.48E+08	2.20E+08	13	ND	1.92E+08	2.20E+08	-13
o-Xylene (PID)	13:85	449929			0.00E+00	355249		
RF		9.00E+07	8.56E+07	5	ND	7.10E+07	8.56E+07	-17
1,1,2,2-Tetrachloroethane	13:88	0			0.00E+00	0		
RF		0.00E+00	9.48E+08	NA	ND	0.00E+00	9.48E+08	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

5/23/96

ANALYST: David M. Pride

REVIEWED BY: Ragi Abraham

TABLE B-2
QUALITY ASSURANCE/QUALITY CONTROL REPORT
DAILY MID POINT, BLANK ANALYSIS, AND LAST GC TEST RUN
MAY 28, 1996

PID/ELCD #1

FILE: 296HHQCM.WK

		DAILY MID POINT			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	2:95	0			0.00E+00	0		
RF		0.00E+00	1.25E+08	NA	ND	0.00E+00	1.25E+08	NA
Vinyl chloride	3:31	0			0.00E+00	0		
RF		0.00E+00	4.24E+08	NA	ND	0.00E+00	4.24E+08	NA
Chloroethane	3:60	0			0.00E+00	0		
RF		0.00E+00	3.04E+08	NA	ND	0.00E+00	3.04E+08	NA
Trichlorofluoromethane	3:79	0			0.00E+00	0		
RF		0.00E+00	5.43E+08	NA	ND	0.00E+00	5.43E+08	NA
1,1,2-Trichloro-trifluoroethane	4:44	0			0.00E+00	0		
RF		0.00E+00	1.16E+09	NA	ND	0.00E+00	1.16E+09	NA
1,1-Dichloroethene (PID)	4:40	148326			0.00E+00	130868		
RF		2.97E+07	3.05E+07	-3	ND	2.62E+07	3.05E+07	-14
Methylene chloride	5:00	0			0.00E+00	0		
RF		0.00E+00	9.25E+08	NA	ND	0.00E+00	9.25E+08	NA
trans-1,2-Dichloroethene	5:28	4343047			0.00E+00	4406235		
RF		8.69E+08	9.18E+08	-5	ND	8.81E+08	9.18E+08	-4
1,1-Dichloroethane	5:76	4173605			0.00E+00	4182298		
RF		8.35E+08	8.84E+08	-6	ND	8.36E+08	8.84E+08	-5
Cis-1,2-Dichloroethene	6:41	5024987			0.00E+00	4989922		
RF		1.00E+09	1.04E+09	-3	ND	9.98E+08	1.04E+09	-4
Chloroform	6:75	0			0.00E+00	5479153		
RF		0.00E+00	1.18E+09	NA	ND	1.10E+09	1.18E+09	-7
1,1,1-Trichloroethane	7:00	4989661			0.00E+00	4959383		
RF		9.98E+08	1.03E+09	-3	ND	9.92E+08	1.03E+09	-4
Carbon tetrachloride	7:20	0			0.00E+00	0		
RF		0.00E+00	1.27E+09	NA	ND	0.00E+00	1.27E+09	NA
Benzene (PID)	7:40	506609			0.00E+00	533045		
RF		1.01E+08	9.96E+07	2	ND	1.07E+08	9.96E+07	7
1,2-Dichloroethane	7:47	4865439			0.00E+00	4625625		
RF		9.73E+08	1.03E+09	-6	ND	9.25E+08	1.03E+09	-10
Trichloroethene	8:21	5143059			0.00E+00	5087072		
RF		1.03E+09	1.09E+09	-6	ND	1.02E+09	1.09E+09	-7
Toluene (PID)	9:91	420809			0.00E+00	545604		
RF		8.42E+07	9.76E+07	-14	ND	1.09E+08	9.76E+07	12
1,1,2-Trichloroethane	10:51	4553326			0.00E+00	4509004		
RF		9.11E+08	9.77E+08	-7	ND	9.02E+08	9.77E+08	-8
Tetrachloroethene	10:72	5763870			0.00E+00	5663141		
RF		1.15E+09	1.22E+09	-6	ND	1.13E+09	1.22E+09	-7
1,1,1,2-Tetrachloroethane	12:10	0			0.00E+00	0		
RF		0.00E+00	1.06E+09	NA	ND	0.00E+00	1.06E+09	NA
Ethylbenzene (PID)	12:08	0			0.00E+00	0		
RF		0.00E+00	8.77E+07	NA	ND	0.00E+00	8.77E+07	NA
m,p-Xylene (PID)	12:24	1198090			0.00E+00	1219499		
RF		2.40E+08	2.20E+08	9	ND	2.44E+08	2.20E+08	11
o-Xylene (PID)	13:85	436928			0.00E+00	451738		
RF		8.74E+07	8.56E+07	2	ND	9.03E+07	8.56E+07	6
1,1,2,2-Tetrachloroethane	13:88	0			0.00E+00	0		
RF		0.00E+00	9.48E+08	NA	ND	0.00E+00	9.48E+08	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

5/28/96

ANALYST: David M. Pride

REVIEWED BY: Marcia LeFrancois

TABLE B-2
QUALITY ASSURANCE/QUALITY CONTROL REPORT
DAILY MID-POINT, BLANK ANALYSIS, AND LAST GC TEST RUN
MAY 31, 1996

PID/ELCD #1

FILE: 296IQCMP.WK

		DAILY MID-POINT			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	2:98	0			0.00E+00	0		
RF		0.00E+00	2.87E+08	NA	ND	0.00E+00	2.87E+08	NA
Vinyl chloride	3:34	0			0.00E+00	0		
RF		0.00E+00	6.34E+08	NA	ND	0.00E+00	6.34E+08	NA
Chloroethane	3:63	0			0.00E+00	0		
RF		0.00E+00	5.62E+08	NA	ND	0.00E+00	5.62E+08	NA
Trichlorofluoromethane	3:83	0			0.00E+00	0		
RF		0.00E+00	6.67E+08	NA	ND	0.00E+00	6.67E+08	NA
1,1,2-Trichloro-trifluoroethane	4:49	0			0.00E+00	0		
RF		0.00E+00	1.49E+09	NA	ND	0.00E+00	1.49E+09	NA
1,1-Dichloroethene (PID)	4:46	164031			0.00E+00	198222		
RF		3.28E+07	3.76E+07	-13	ND	3.96E+07	3.76E+07	5
Methylene chloride	5:03	0			0.00E+00	0		
RF		0.00E+00	1.19E+09	NA	ND	0.00E+00	1.19E+09	NA
trans-1,2-Dichloroethene	5:32	4692383			0.00E+00	4839388		
RF		9.38E+08	1.03E+09	-9	ND	9.68E+08	1.03E+09	-6
1,1-Dichloroethane	5:78	5045858			0.00E+00	5108303		
RF		1.01E+09	1.08E+09	-7	ND	1.02E+09	1.08E+09	-5
Cis-1,2-Dichloroethene	6:43	5476765			0.00E+00	4873831		
RF		1.10E+09	1.03E+09	6	ND	9.75E+08	1.03E+09	-5
Chloroform	6:77	6115782			0.00E+00	6419169		
RF		1.22E+09	1.34E+09	-9	ND	1.28E+09	1.34E+09	-4
1,1,1-Trichloroethane	7:02	5347789			0.00E+00	5734652		
RF		1.07E+09	1.02E+09	5	ND	1.15E+09	1.02E+09	12
Carbon tetrachloride	7:22	6916823			0.00E+00	7655445		
RF		1.38E+09	1.57E+09	-12	ND	1.53E+09	1.57E+09	-2
Benzene (PID)	7:43	642276			0.00E+00	716011		
RF		1.28E+08	1.37E+08	-6	ND	1.43E+08	1.37E+08	5
1,2-Dichloroethane	7:49	5230649			0.00E+00	5262702		
RF		1.05E+09	1.10E+09	-5	ND	1.05E+09	1.10E+09	-4
Trichloroethene	8:24	5548590			0.00E+00	5702779		
RF		1.11E+09	1.21E+09	-8	ND	1.14E+09	1.21E+09	-6
Toluene (PID)	9:92	648271			0.00E+00	681590		
RF		1.30E+08	1.52E+08	-15	ND	1.36E+08	1.52E+08	-10
1,1,2-Trichloroethane	10:52	5554230			0.00E+00	5843130		
RF		1.11E+09	1.19E+09	-7	ND	1.17E+09	1.19E+09	-2
Tetrachloroethene	10:74	6251358			0.00E+00	6232655		
RF		1.25E+09	1.32E+09	-5	ND	1.25E+09	1.32E+09	-6
1,1,1,2-Tetrachloroethane	12:10	0			0.00E+00	0		
RF		0.00E+00	1.24E+09	NA	ND	0.00E+00	1.24E+09	NA
Ethylbenzene (PID)	12:07	0			0.00E+00	0		
RF		0.00E+00	1.15E+08	NA	ND	0.00E+00	1.15E+08	NA
m,p-Xylene (PID)	12:23	1484939			0.00E+00	1436207		
RF		2.97E+08	3.28E+08	-9	ND	2.87E+08	3.28E+08	-12
o-Xylene (PID)	12:85	547558			0.00E+00	560174		
RF		1.10E+08	1.18E+08	-7	ND	1.12E+08	1.18E+08	-5
1,1,2,2-Tetrachloroethane	13:88	0			0.00E+00	0		
RF		0.00E+00	1.23E+09	NA	ND	0.00E+00	1.23E+09	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

5/31/96

ANALYST: Ragi Abraham

REVIEWED BY: Marcia LeFrancois

TABLE B-2
QUALITY ASSURANCE/QUALITY CONTROL REPORT
DAILY MID-POINT, BLANK ANALYSIS, AND LAST GC TEST RUN
JUNE 19, 1996

PID/ELCD #2

FILE: 367BQCMP.WK

		DAILY MID-POINT			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	2:77	0			0.00E+00	0		
RF		0.00E+00	4.34E+08	NA	ND	0.00E+00	4.34E+08	NA
Vinyl chloride	3:05	0			0.00E+00	0		
RF		0.00E+00	1.70E+09	NA	ND	0.00E+00	1.70E+09	NA
Chloroethane	3:37	0			0.00E+00	0		
RF		0.00E+00	8.47E+08	NA	ND	0.00E+00	8.47E+08	NA
Trichlorofluoromethane	3:56	0			0.00E+00	0		
RF		0.00E+00	1.59E+09	NA	ND	0.00E+00	1.59E+09	NA
1,1,2-Trichloro-trifluoroethane	4:17	0			0.00E+00	0		
RF		0.00E+00	3.69E+09	NA	ND	0.00E+00	3.69E+09	NA
1,1-Dichloroethene (PID)	4:15	350091			0.00E+00	357262		
RF		7.00E+07	6.53E+07	7	ND	7.15E+07	6.53E+07	9
Methylene chloride	4:71	0			0.00E+00	0		
RF		0.00E+00	2.61E+09	NA	ND	0.00E+00	2.61E+09	NA
trans-1,2-Dichloroethene	5:01	16657016			0.00E+00	14736496		
RF		3.33E+09	2.90E+09	15	ND	2.95E+09	2.90E+09	2
1,1-Dichloroethane	5:46	16038088			0.00E+00	15339208		
RF		3.21E+09	2.85E+09	13	ND	3.07E+09	2.85E+09	8
Cis-1,2-Dichloroethene	6:08	12790464			0.00E+00	14765672		
RF		2.56E+09	2.76E+09	-7	ND	2.95E+09	2.76E+09	7
Bromochloromethane (Surrogate)	6:23	0			5.00E+06	0		
RF		0.00E+00	1.49E+09	NA	67%	0.00E+00	1.49E+09	NA
Chloroform	6:41	0			0.00E+00	0		
RF		0.00E+00	5.39E+09	NA	ND	0.00E+00	5.39E+09	NA
1,1,1-Trichloroethane	6:68	26726912			0.00E+00	26809328		
RF		5.35E+09	4.97E+09	8	ND	5.36E+09	4.97E+09	8
Carbon tetrachloride	6:88	0			0.00E+00	0		
RF		0.00E+00	6.45E+09	NA	ND	0.00E+00	6.45E+09	NA
Benzene (PID)	7:09	1226660			0.00E+00	1161384		
RF		2.45E+08	2.59E+08	-5	ND	2.32E+08	2.59E+08	-10
1,2-Dichloroethane	7:10	24698656			0.00E+00	21937280		
RF		4.94E+09	4.72E+09	5	ND	4.39E+09	4.72E+09	-7
Trichloroethene	7:87	21899648			0.00E+00	17950048		
RF		4.38E+09	3.88E+09	13	ND	3.59E+09	3.88E+09	-7
Toluene (PID)	9:57	1213391			0.00E+00	1414313		
RF		2.43E+08	2.74E+08	-11	ND	2.83E+08	2.74E+08	3
1,1,2-Trichloroethane	10:14	18829568			0.00E+00	18933984		
RF		3.77E+09	3.50E+09	8	ND	3.79E+09	3.50E+09	8
Tetrachloroethene	10:41	24311616			0.00E+00	23109712		
RF		4.86E+09	4.64E+09	5	ND	4.62E+09	4.64E+09	-0
Chlorobenzene (Surrogate-PID)	11:69	0			1.17E+06	0		
RF		0.00E+00	2.77E+08	NA	85%	0.00E+00	2.77E+08	NA
1,1,1,2-Tetrachloroethane	11:84	0			0.00E+00	0		
RF		0.00E+00	4.59E+09	NA	ND	0.00E+00	4.59E+09	NA
Ethylbenzene (PID)	11:86	0			0.00E+00	0		
RF		0.00E+00	2.39E+08	NA	ND	0.00E+00	2.39E+08	NA
m,p-Xylene (PID)	12:05	2679646			0.00E+00	2971470		
RF		5.36E+08	5.57E+08	-4	ND	5.94E+08	5.57E+08	7
o-Xylene (PID)	12:71	1095136			0.00E+00	1212895		
RF		2.19E+08	2.27E+08	-4	ND	2.43E+08	2.27E+08	7
1,1,2,2-Tetrachloroethane	13:79	0			0.00E+00			
RF		0.00E+00	3.73E+09	NA	ND	0.00E+00	3.73E+09	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

6/19/96

ANALYST: Ragi Abraham

REVIEWED BY: Marcia LeFrancois

TABLE B-2
QUALITY ASSURANCE/QUALITY CONTROL REPORT
DAILY MID-POINT, BLANK ANALYSIS, AND LAST GC TEST RUN
JUNE 20, 1996

PID/ELCD #2

FILE: 296MMQCMP.WK

		DAILY MID-POINT			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	2:77	0			0.00E+00	0		
RF		0.00E+00	4.34E+08	NA	ND	0.00E+00	4.34E+08	NA
Vinyl chloride	3:05	0			0.00E+00	0		
RF		0.00E+00	1.70E+09	NA	ND	0.00E+00	1.70E+09	NA
Chloroethane	3:37	0			0.00E+00	0		
RF		0.00E+00	8.47E+08	NA	ND	0.00E+00	8.47E+08	NA
Trichlorofluoromethane	3:56	0			0.00E+00	0		
RF		0.00E+00	1.59E+09	NA	ND	0.00E+00	1.59E+09	NA
1,1,2-Trichloro-trifluoroethane	4:17	19358848			0.00E+00	19742800		
RF		3.87E+09	3.69E+09	5	ND	3.95E+09	3.69E+09	7
1,1-Dichloroethene (PID)	4:15	328267			0.00E+00	318897		
RF		6.57E+07	6.53E+07	1	ND	6.38E+07	6.53E+07	-2
Methylene chloride	4:71	0			0.00E+00	0		
RF		0.00E+00	2.61E+09	NA	ND	0.00E+00	2.61E+09	NA
trans-1,2-Dichloroethene	5:01	15579912			0.00E+00	14637408		
RF		3.12E+09	2.90E+09	7	ND	2.93E+09	2.90E+09	1
1,1-Dichloroethane	5:46	14636904			0.00E+00	13625656		
RF		2.93E+09	2.85E+09	3	ND	2.73E+09	2.85E+09	-4
Cis-1,2-Dichloroethene	6:08	14751496			0.00E+00	13924592		
RF		2.95E+09	2.76E+09	7	ND	2.78E+09	2.76E+09	1
Bromochloromethane (Surrogate)	6:23	0			8.10E+06	0		
RF		0.00E+00	1.49E+09	NA	109%	0.00E+00	1.49E+09	NA
Chloroform	6:41	0			0.00E+00	0		
RF		0.00E+00	5.39E+09	NA	ND	0.00E+00	5.39E+09	NA
1,1,1-Trichloroethane	6:68	21839936			0.00E+00	23078288		
RF		4.37E+09	4.97E+09	-12	ND	4.62E+09	4.97E+09	-7
Carbon tetrachloride	6:88	0			0.00E+00	0		
RF		0.00E+00	6.45E+09	NA	ND	0.00E+00	6.45E+09	NA
Benzene (PID)	7:09	1198251			0.00E+00	1333499		
RF		2.40E+08	2.59E+08	-7	ND	2.67E+08	2.59E+08	3
1,2-Dichloroethane	7:10	22938800			0.00E+00	20582768		
RF		4.59E+09	4.72E+09	-3	ND	4.12E+09	4.72E+09	-13
Trichloroethene	7:87	19165904			0.00E+00	19641088		
RF		3.83E+09	3.88E+09	-1	ND	3.93E+09	3.88E+09	1
Toluene (PID)	9:57	1175374			0.00E+00	1284450		
RF		2.35E+08	2.74E+08	-14	ND	2.57E+08	2.74E+08	-6
1,1,2-Trichloroethane	10:14	15244152			0.00E+00	15963256		
RF		3.05E+09	3.50E+09	-13	ND	3.19E+09	3.50E+09	-9
Tetrachloroethene	10:41	22492176			0.00E+00	24968736		
RF		4.50E+09	4.64E+09	-3	ND	4.99E+09	4.64E+09	8
Chlorobenzene (Surrogate-PID)	11:69	0			1.06E+06	0		
RF		0.00E+00	2.77E+08	NA	77%	0.00E+00	2.77E+08	NA
1,1,1,2-Tetrachloroethane	11:84	0			0.00E+00	0		
RF		0.00E+00	4.59E+09	NA	ND	0.00E+00	4.59E+09	NA
Ethylbenzene (PID)	11:86	0			0.00E+00	0		
RF		0.00E+00	2.39E+08	NA	ND	0.00E+00	2.39E+08	NA
m,p-Xylene (PID)	12:05	2603869			0.00E+00	2749341		
RF		5.21E+08	5.57E+08	-6	ND	5.50E+08	5.57E+08	-1
o-Xylene (PID)	12:71	1048740			0.00E+00	1040586		
RF		2.10E+08	2.27E+08	-8	ND	2.08E+08	2.27E+08	-8
1,1,2,2-Tetrachloroethane	13:79	0			0.00E+00			
RF		0.00E+00	3.73E+09	NA	ND	0.00E+00	3.73E+09	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

6/20/96

D. Price

ANALYST: Ragi Abraham

REVIEWED BY: Marcia LeFrancois

TABLE B-2
QUALITY ASSURANCE/QUALITY CONTROL REPORT
DAILY MID-POINT, BLANK ANALYSIS, AND LAST GC TEST RUN
JUNE 21, 1996

PID/ELCD #2

FILE: 296NNQCMP.WK

		DAILY MID-POINT			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	2:77	0			0.00E+00	0		
RF		0.00E+00	4.34E+08	NA	ND	0.00E+00	4.34E+08	NA
Vinyl chloride	3:05	0			0.00E+00	0		
RF		0.00E+00	1.70E+09	NA	ND	0.00E+00	1.70E+09	NA
Chloroethane	3:37	0			0.00E+00	0		
RF		0.00E+00	8.47E+08	NA	ND	0.00E+00	8.47E+08	NA
Trichlorofluoromethane	3:56	0			0.00E+00	0		
RF		0.00E+00	1.59E+09	NA	ND	0.00E+00	1.59E+09	NA
1,1,2-Trichloro-trifluoroethane	4:17	15284288			0.00E+00	20467616		
RF		3.06E+09	3.69E+09	-17	ND	4.09E+09	3.69E+09	11
1,1-Dichloroethene (PID)	4:15	368552			0.00E+00	317315		
RF		7.37E+07	6.53E+07	13	ND	6.35E+07	6.53E+07	-3
Methylene chloride	4:71	0			0.00E+00	0		
RF		0.00E+00	2.61E+09	NA	ND	0.00E+00	2.61E+09	NA
trans-1,2-Dichloroethene	5:01	12761784			0.00E+00	16930640		
RF		2.55E+09	2.90E+09	-12	ND	3.39E+09	2.90E+09	17
1,1-Dichloroethane	5:46	13939016			0.00E+00	16366440		
RF		2.79E+09	2.85E+09	-2	ND	3.27E+09	2.85E+09	15
Cis-1,2-Dichloroethene	6:08	15395968			0.00E+00	14504296		
RF		3.08E+09	2.76E+09	11	ND	2.90E+09	2.76E+09	5
Bromochloromethane (Surrogate)	6:23	0			6.89E+06	0		
RF		0.00E+00	1.49E+09	NA	92%	0.00E+00	1.49E+09	NA
Chloroform	6:41	0			0.00E+00	0		
RF		0.00E+00	5.39E+09	NA	ND	0.00E+00	5.39E+09	NA
1,1,1-Trichloroethane	6:68	24147504			0.00E+00	20509584		
RF		4.83E+09	4.97E+09	-3	ND	4.10E+09	4.97E+09	-17
Carbon tetrachloride	6:88	0			0.00E+00	0		
RF		0.00E+00	6.45E+09	NA	ND	0.00E+00	6.45E+09	NA
Benzene (PID)	7:09	1248084			0.00E+00	1265942		
RF		2.50E+08	2.59E+08	-4	ND	2.53E+08	2.59E+08	-2
1,2-Dichloroethane	7:10	23227712			0.00E+00	21153360		
RF		4.65E+09	4.72E+09	-2	ND	4.23E+09	4.72E+09	-10
Trichloroethene	7:87	21600928			0.00E+00	19015792		
RF		4.32E+09	3.88E+09	11	ND	3.80E+09	3.88E+09	-2
Toluene (PID)	9:57	1200997			0.00E+00	1223150		
RF		2.40E+08	2.74E+08	-12	ND	2.45E+08	2.74E+08	-11
1,1,2-Trichloroethane	10:14	15412072			0.00E+00	18726992		
RF		3.08E+09	3.50E+09	-12	ND	3.75E+09	3.50E+09	7
Tetrachloroethene	10:41	21474736			0.00E+00	22545856		
RF		4.29E+09	4.64E+09	-7	ND	4.51E+09	4.64E+09	-3
Chlorobenzene (Surrogate-PID)	11:69	0			1.14E+06	0		
RF		0.00E+00	2.77E+08	NA	82%	0.00E+00	2.77E+08	NA
1,1,1,2-Tetrachloroethane	11:84	0			0.00E+00	0		
RF		0.00E+00	4.59E+09	NA	ND	0.00E+00	4.59E+09	NA
Ethylbenzene (PID)	11:86	0			0.00E+00	0		
RF		0.00E+00	2.39E+08	NA	ND	0.00E+00	2.39E+08	NA
m,p-Xylene (PID)	12:05	2689702			0.00E+00	2724720		
RF		5.38E+08	5.57E+08	-3	ND	5.45E+08	5.57E+08	-2
o-Xylene (PID)	12:71	1094076			0.00E+00	1057278		
RF		2.19E+08	2.27E+08	-4	ND	2.11E+08	2.27E+08	-7
1,1;2,2-Tetrachloroethane	13:79	0			0.00E+00			
RF		0.00E+00	3.73E+09	NA	ND	0.00E+00	3.73E+09	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

6/21/96

ANALYST: Ragi Abraham

REVIEWED BY: Marcia LeFrancois

TABLE B-2
QUALITY ASSURANCE/QUALITY CONTROL REPORT
DAILY MID-POINT, BLANK ANALYSIS, AND LAST GC TEST RUN
JUNE 25, 1996

PID/ELCD #2

FILE: 296OOQCM.WK

		DAILY MID-POINT			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	2:77	0			0.00E+00	0		
RF		0.00E+00	4.34E+08	NA	ND	0.00E+00	4.34E+08	NA
Vinyl chloride	3:05	0			0.00E+00	0		
RF		0.00E+00	1.70E+09	NA	ND	0.00E+00	1.70E+09	NA
Chloroethane	3:37	0			0.00E+00	0		
RF		0.00E+00	8.47E+08	NA	ND	0.00E+00	8.47E+08	NA
Trichlorofluoromethane	3:56	0			0.00E+00	0		
RF		0.00E+00	1.59E+09	NA	ND	0.00E+00	1.59E+09	NA
1,1,2-Trichloro-trifluoroethane	4:17	14941512			0.00E+00	17303696		
RF		2.99E+09	3.69E+09	-19	ND	3.46E+09	3.69E+09	-6
1,1-Dichloroethene (PID)	4:15	347760			0.00E+00	338742		
RF		6.96E+07	6.53E+07	7	ND	6.77E+07	6.53E+07	4
Methylene chloride	4:71	0			0.00E+00	0		
RF		0.00E+00	2.61E+09	NA	ND	0.00E+00	2.61E+09	NA
trans-1,2-Dichloroethene	5:01	13462832			0.00E+00	12855584		
RF		2.69E+09	2.90E+09	-7	ND	2.57E+09	2.90E+09	-11
1,1-Dichloroethane	5:46	13671480			0.00E+00	13432952		
RF		2.73E+09	2.85E+09	-4	ND	2.69E+09	2.85E+09	-6
Cis-1,2-Dichloroethene	6:08	15094816			0.00E+00	16602272		
RF		3.02E+09	2.76E+09	9	ND	3.32E+09	2.76E+09	20
Bromochloromethane (Surrogate)	6:23	0			8.10E+06	0		
RF		0.00E+00	1.49E+09	NA	109%	0.00E+00	1.49E+09	NA
Chloroform	6:41	0			0.00E+00	0		
RF		0.00E+00	5.39E+09	NA	ND	0.00E+00	5.39E+09	NA
1,1,1-Trichloroethane	6:68	22765088			0.00E+00	23976064		
RF		4.55E+09	4.97E+09	-8	ND	4.80E+09	4.97E+09	-3
Carbon tetrachloride	6:88	0			0.00E+00	0		
RF		0.00E+00	6.45E+09	NA	ND	0.00E+00	6.45E+09	NA
Benzene (PID)	7:09	1230046			0.00E+00	1189319		
RF		2.46E+08	2.59E+08	-5	ND	2.38E+08	2.59E+08	-8
1,2-Dichloroethane	7:10	25822564			0.00E+00	23716016		
RF		5.16E+09	4.72E+09	9	ND	4.74E+09	4.72E+09	0
Trichloroethene	7:87	17230832			0.00E+00	20839840		
RF		3.45E+09	3.88E+09	-11	ND	4.17E+09	3.88E+09	7
Toluene (PID)	9:57	1233033			0.00E+00	1308556		
RF		2.47E+08	2.74E+08	-10	ND	2.62E+08	2.74E+08	-4
1,1,2-Trichloroethane	10:14	15111456			0.00E+00	15677448		
RF		3.02E+09	3.50E+09	-14	ND	3.14E+09	3.50E+09	-10
Tetrachloroethene	10:41	19988336			0.00E+00	22392768		
RF		4.00E+09	4.64E+09	-14	ND	4.48E+09	4.64E+09	-3
Chlorobenzene (Surrogate-PID)	11:69	0			1.06E+06	0		
RF		0.00E+00	2.77E+08	NA	77%	0.00E+00	2.77E+08	NA
1,1,1,2-Tetrachloroethane	11:84	0			0.00E+00	0		
RF		0.00E+00	4.59E+09	NA	ND	0.00E+00	4.59E+09	NA
Ethylbenzene (PID)	11:86	0			0.00E+00	0		
RF		0.00E+00	2.39E+08	NA	ND	0.00E+00	2.39E+08	NA
m,p-Xylene (PID)	12:05	2563098			0.00E+00	2517637		
RF		5.13E+08	5.57E+08	-8	ND	5.04E+08	5.57E+08	-10
o-Xylene (PID)	12:71	972573			0.00E+00	1115416		
RF		1.95E+08	2.27E+08	-14	ND	2.23E+08	2.27E+08	-2
1,1,2,2-Tetrachloroethane	13:79	0			0.00E+00			
RF		0.00E+00	3.73E+09	NA	ND	0.00E+00	3.73E+09	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

6/25/96

ANALYST: David M. Pride

REVIEWED BY: Ragi Abraham

TABLE B-2
QUALITY ASSURANCE/QUALITY CONTROL REPORT
DAILY MID-POINT, BLANK ANALYSIS, AND LAST GC TEST RUN
JULY 1, 1996

PID/ELCD #1

FILE: 296PPOCMP.WK

		DAILY MID-POINT			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	2:87	0			0.00E+00	0		
RF		0.00E+00	9.69E+07	NA	ND	0.00E+00	9.69E+07	NA
Vinyl chloride	3:20	0			0.00E+00	0		
RF		0.00E+00	4.52E+08	NA	ND	0.00E+00	4.52E+08	NA
Chloroethane	3:48	0			0.00E+00	0		
RF		0.00E+00	1.95E+08	NA	ND	0.00E+00	1.95E+08	NA
Trichlorofluoromethane	3:67	0			0.00E+00	0		
RF		0.00E+00	5.18E+08	NA	ND	0.00E+00	5.18E+08	NA
1,1,2-Trichloro-trifluoroethane	4:28	3344006			0.00E+00	3299979		
RF		6.69E+08	6.74E+08	-1	ND	6.60E+08	6.74E+08	-2
1,1-Dichloroethene (PID)	4:26	207329			0.00E+00	174153		
RF		4.15E+07	3.78E+07	10	ND	3.48E+07	3.78E+07	-8
Methylene chloride	4:91	0			0.00E+00	0		
RF		0.00E+00	1.10E+09	NA	ND	0.00E+00	1.10E+09	NA
trans-1,2-Dichloroethene	5:19	5082452			0.00E+00	5821293		
RF		1.02E+09	9.98E+08	2	ND	1.16E+09	9.98E+08	17
1,1-Dichloroethane	5:68	5143300			0.00E+00	5035853		
RF		1.03E+09	1.03E+09	0	ND	1.01E+09	1.03E+09	-2
Cis-1,2-Dichloroethene	5:34	4597937			0.00E+00	5326479		
RF		9.20E+08	9.71E+08	-5	ND	1.07E+09	9.71E+08	10
Bromochloromethane (Surrogate)	5:57	0			2.47E+06	0		
RF		0.00E+00	5.36E+08	NA	92%	0.00E+00	5.36E+08	NA
Chloroform	5:70	0			0.00E+00	0		
RF		0.00E+00	1.30E+09	NA	ND	0.00E+00	1.30E+09	NA
1,1,1-Trichloroethane	6:93	6594066			0.00E+00	5943968		
RF		1.32E+09	1.23E+09	7	ND	1.19E+09	1.23E+09	-4
Carbon tetrachloride	7:12	0			0.00E+00	0		
RF		0.00E+00	1.59E+09	NA	ND	0.00E+00	1.59E+09	NA
Benzene (PID)	7:36	510079			0.00E+00	611011		
RF		1.02E+08	1.20E+08	-15	ND	1.22E+08	1.20E+08	2
1,2-Dichloroethane	7:41	5132259			0.00E+00	5346150		
RF		1.03E+09	1.06E+09	-3	ND	1.07E+09	1.06E+09	1
Trichloroethene	8:16	5697979			0.00E+00	5214177		
RF		1.14E+09	1.15E+09	-1	ND	1.04E+09	1.15E+09	-9
Toluene (PID)	9:84	529798			0.00E+00	532727		
RF		1.06E+08	1.17E+08	-10	ND	1.07E+08	1.17E+08	-9
1,1,2-Trichloroethane	10:43	5340177			0.00E+00	5025669		
RF		1.07E+09	1.06E+09	1	ND	1.01E+09	1.06E+09	-5
Tetrachloroethene	10:65	4859150			0.00E+00	4561655		
RF		9.72E+08	9.95E+08	-2	ND	9.12E+08	9.95E+08	-8
Chlorobenzene (Surrogate-PID)	11:87	0			445862	0		
RF		0.00E+00	8.93E+07	NA	100%	0.00E+00	8.93E+07	NA
1,1,1,2-Tetrachloroethane	12:00	0			0.00E+00	0		
RF		0.00E+00	1.12E+09	NA	ND	0.00E+00	1.12E+09	NA
Ethylbenzene (PID)	12:00	0			0.00E+00	0		
RF		0.00E+00	1.41E+08	NA	ND	0.00E+00	1.41E+08	NA
m,p-Xylene (PID)	12:16	1426206			0.00E+00	1378048		
RF		2.85E+08	3.04E+08	-6	ND	2.76E+08	3.04E+08	-9
o-Xylene (PID)	12:77	544363			0.00E+00	546150		
RF		1.09E+08	1.08E+08	0	ND	1.09E+08	1.08E+08	1
1,1,2,2-Tetrachloroethane	13:77	0			0.00E+00	0		
RF		0.00E+00	9.81E+08	NA	ND	0.00E+00	9.81E+08	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

7/1/96

ANALYST: Ragi Abraham

REVIEWED BY: David M. Pride

TABLE B-2
QUALITY ASSURANCE/QUALITY CONTROL REPORT
DAILY MID-POINT, BLANK ANALYSIS, AND LAST GC TEST RUN
JULY 2, 1996

PID/ELCD #2
FILE: 296000CM.WK

		DAILY MID-POINT			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	2:77	0			0.00E+00	0		
RF		0.00E+00	4.34E+08	NA	ND	0.00E+00	4.34E+08	NA
Vinyl chloride	3:05	0			0.00E+00	0		
RF		0.00E+00	1.70E+09	NA	ND	0.00E+00	1.70E+09	NA
Chloroethane	3:37	0			0.00E+00	0		
RF		0.00E+00	8.47E+08	NA	ND	0.00E+00	8.47E+08	NA
Trichlorofluoromethane	3:56	0			0.00E+00	0		
RF		0.00E+00	1.59E+09	NA	ND	0.00E+00	1.59E+09	NA
1,1,2-Trichloro-trifluoroethane	4:17	18048048			0.00E+00	16069224		
RF		3.61E+09	3.69E+09	-2	ND	3.21E+09	3.69E+09	-13
1,1-Dichloroethene (PID)	4:15	308824			0.00E+00	372097		
RF		6.18E+07	6.53E+07	-5	ND	7.44E+07	6.53E+07	14
Methylene chloride	4:71	0			0.00E+00	0		
RF		0.00E+00	2.61E+09	NA	ND	0.00E+00	2.61E+09	NA
trans-1,2-Dichloroethene	5:01	15020256			0.00E+00	14453680		
RF		3.00E+09	2.90E+09	4	ND	2.89E+09	2.90E+09	-0
1,1-Dichloroethane	5:46	13797728			0.00E+00	15876160		
RF		2.76E+09	2.85E+09	-3	ND	3.18E+09	2.85E+09	12
Cis-1,2-Dichloroethene	5:08	15934944			0.00E+00	15092816		
RF		3.19E+09	2.76E+09	15	ND	3.02E+09	2.76E+09	9
Bromochloromethane (Surrogate)	6:23	0			0.00E+00	0		
RF		0.00E+00	1.49E+09	NA	ND	0.00E+00	1.49E+09	NA
Chloroform	6:41	0			0.00E+00	0		
RF		0.00E+00	5.39E+09	NA	ND	0.00E+00	5.39E+09	NA
1,1,1-Trichloroethane	6:68	21655824			0.00E+00	23291248		
RF		4.33E+09	4.97E+09	-13	ND	4.66E+09	4.97E+09	-6
Carbon tetrachloride	6:88	0			0.00E+00	0		
RF		0.00E+00	6.45E+09	NA	ND	0.00E+00	6.45E+09	NA
Benzene (PID)	7:09	1266953			0.00E+00	1233594		
RF		2.53E+08	2.59E+08	-2	ND	2.47E+08	2.59E+08	-5
1,2-Dichloroethane	7:10	23063056			0.00E+00	25126656		
RF		4.61E+09	4.72E+09	-2	ND	5.03E+09	4.72E+09	6
Trichloroethene	7:87	21910816			0.00E+00	22554832		
RF		4.38E+09	3.88E+09	13	ND	4.51E+09	3.88E+09	16
Toluene (PID)	9:57	1186114			0.00E+00	1159825		
RF		2.37E+08	2.74E+08	-13	ND	2.32E+08	2.74E+08	-15
1,1,2-Trichloroethane	10:14	17927584			0.00E+00	19688864		
RF		3.59E+09	3.50E+09	3	ND	3.94E+09	3.50E+09	13
Tetrachloroethene	10:41	24939600			0.00E+00	23175792		
RF		4.99E+09	4.64E+09	8	ND	4.64E+09	4.64E+09	-0
Chlorobenzene (Surrogate-PID)	11:69	0			0.00E+00	0		
RF		0.00E+00	2.77E+08	NA	ND	0.00E+00	2.77E+08	NA
1,1,1,2-Tetrachloroethane	11:84	0			0.00E+00	0		
RF		0.00E+00	4.59E+09	NA	ND	0.00E+00	4.59E+09	NA
Ethylbenzene (PID)	11:86	0			0.00E+00	0		
RF		0.00E+00	2.39E+08	NA	ND	0.00E+00	2.39E+08	NA
m,p-Xylene (PID)	12:05	2727845			0.00E+00	2557202		
RF		5.46E+08	5.57E+08	-2	ND	5.11E+08	5.57E+08	-8
o-Xylene (PID)	12:71	1042589			0.00E+00	971611		
RF		2.09E+08	2.27E+08	-8	ND	1.94E+08	2.27E+08	-15
1,1,2,2-Tetrachloroethane	13:79	0			0.00E+00			
RF		0.00E+00	3.73E+09	NA	ND	0.00E+00	3.73E+09	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

7/2/96

ANALYST: David M. Pride

REVIEWED BY: Ragi Abraham

TABLE B-2
QUALITY ASSURANCE/QUALITY CONTROL REPORT
DAILY MID-POINT, BLANK ANALYSIS, AND LAST GC TEST RUN
JULY 5, 1996

PID/ELCD #1

FILE: 296RRQCMP.WK

		DAILY MID-POINT			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	2:87	0			0.00E+00	0		
RF		0.00E+00	9.69E+07	NA	ND	0.00E+00	9.69E+07	NA
Vinyl chloride	3:20	0			0.00E+00	0		
RF		0.00E+00	4.52E+08	NA	ND	0.00E+00	4.52E+08	NA
Chloroethane	3:48	0			0.00E+00	0		
RF		0.00E+00	1.95E+08	NA	ND	0.00E+00	1.95E+08	NA
Trichlorofluoromethane	3:67	0			0.00E+00	0		
RF		0.00E+00	5.18E+08	NA	ND	0.00E+00	5.18E+08	NA
1,1,2-Trichloro-trifluoroethane	4:28	3976493			0.00E+00	2810113		
RF		7.95E+08	6.74E+08	18	ND	5.62E+08	6.74E+08	-17
1,1-Dichloroethene (PID)	4:26	189131			0.00E+00	213557		
RF		3.78E+07	3.78E+07	0	ND	4.27E+07	3.78E+07	13
Methylene chloride	4:91	0			0.00E+00	0		
RF		0.00E+00	1.10E+09	NA	ND	0.00E+00	1.10E+09	NA
trans-1,2-Dichloroethene	5:19	4514545			0.00E+00	4933519		
RF		9.03E+08	9.98E+08	-10	ND	9.87E+08	9.98E+08	-1
1,1-Dichloroethane	5:68	4594677			0.00E+00	5585151		
RF		9.19E+08	1.03E+09	-10	ND	1.12E+09	1.03E+09	9
Cis-1,2-Dichloroethene	6:34	4837609			0.00E+00	3968965		
RF		9.68E+08	9.71E+08	-0	ND	7.94E+08	9.71E+08	-18
Bromochloromethane (Surrogate)	6:57	0			2.27E+06	0		
RF		0.00E+00	5.36E+08	NA	85%	0.00E+00	5.36E+08	NA
Chloroform	6:70	0			0.00E+00	0		
RF		0.00E+00	1.30E+09	NA	ND	0.00E+00	1.30E+09	NA
1,1,1-Trichloroethane	6:93	6058365			0.00E+00	5627638		
RF		1.21E+09	1.23E+09	-2	ND	1.13E+09	1.23E+09	-9
Carbon tetrachloride	7:12	0			0.00E+00	0		
RF		0.00E+00	1.59E+09	NA	ND	0.00E+00	1.59E+09	NA
Benzene (PID)	7:36	570308			0.00E+00	537129		
RF		1.14E+08	1.20E+08	-5	ND	1.07E+08	1.20E+08	-10
1,2-Dichloroethane	7:41	5087466			0.00E+00	4489072		
RF		1.02E+09	1.06E+09	-4	ND	8.98E+08	1.06E+09	-15
Trichloroethene	8:16	5421791			0.00E+00	4638243		
RF		1.08E+09	1.15E+09	-6	ND	9.28E+08	1.15E+09	-19
Toluene (PID)	9:84	615002			0.00E+00	567235		
RF		1.23E+08	1.17E+08	5	ND	1.13E+08	1.17E+08	-3
1,1,2-Trichloroethane	10:43	5230510			0.00E+00	4930709		
RF		1.05E+09	1.06E+09	-1	ND	9.86E+08	1.06E+09	-7
Tetrachloroethene	10:65	4963103			0.00E+00	4575627		
RF		9.93E+08	9.95E+08	-0	ND	9.15E+08	9.95E+08	-8
Chlorobenzene (Surrogate-PID)	11:87	0			538324	0		
RF		0.00E+00	8.93E+07	NA	121%	0.00E+00	8.93E+07	NA
1,1,1,2-Tetrachloroethane	12:00	0			0.00E+00	0		
RF		0.00E+00	1.12E+09	NA	ND	0.00E+00	1.12E+09	NA
Ethylbenzene (PID)	12:00	0			0.00E+00	0		
RF		0.00E+00	1.41E+08	NA	ND	0.00E+00	1.41E+08	NA
m,p-Xylene (PID)	12:16	1309518			0.00E+00	1509919		
RF		2.62E+08	3.04E+08	-14	ND	3.02E+08	3.04E+08	-1
o-Xylene (PID)	12:77	542305			0.00E+00	577499		
RF		1.08E+08	1.08E+08	0	ND	1.15E+08	1.08E+08	7
1,1,2,2-Tetrachloroethane	13:77	0			0.00E+00	0		
RF		0.00E+00	9.81E+08	NA	ND	0.00E+00	9.81E+08	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

7/5/96

ANALYST: Ragi Abraham

REVIEWED BY: David M. Pride

TABLE B-2
QUALITY ASSURANCE/QUALITY CONTROL REPORT
DAILY MID-POINT, BLANK ANALYSIS, AND LAST GC TEST RUN
JULY 10, 1996

PID/ELCD #1

FILE: 296SSQCM.WK

		DAILY MID-POINT			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	2:87	0			0.00E+00	0		
RF		0.00E+00	9.69E+07	NA	ND	0.00E+00	9.69E+07	NA
Vinyl chloride	3:20	0			0.00E+00	0		
RF		0.00E+00	4.52E+08	NA	ND	0.00E+00	4.52E+08	NA
Chloroethane	3:48	0			0.00E+00	0		
RF		0.00E+00	1.95E+08	NA	ND	0.00E+00	1.95E+08	NA
Trichlorofluoromethane	3:67	0			0.00E+00	0		
RF		0.00E+00	5.18E+08	NA	ND	0.00E+00	5.18E+08	NA
1,1,2-Trichloro-trifluoroethane	4:28	0			0.00E+00	0		
RF		0.00E+00	6.74E+08	NA	ND	0.00E+00	6.74E+08	NA
1,1-Dichloroethene (PID)	4:26	160530			0.00E+00	211069		
RF		3.21E+07	3.78E+07	-15	ND	4.22E+07	3.78E+07	12
Methylene chloride	4:91	0			0.00E+00	0		
RF		0.00E+00	1.10E+09	NA	ND	0.00E+00	1.10E+09	NA
trans-1,2-Dichloroethene	5:19	5243047			0.00E+00	4803131		
RF		1.05E+09	9.98E+08	5	ND	9.61E+08	9.98E+08	-4
1,1-Dichloroethane	5:68	5535052			0.00E+00	5203640		
RF		1.11E+09	1.03E+09	8	ND	1.04E+09	1.03E+09	1
Cis-1,2-Dichloroethene	6:34	4299792			0.00E+00	4722435		
RF		8.60E+08	9.71E+08	-11	ND	9.44E+08	9.71E+08	-3
Bromochloromethane (Surrogate)	6:57	0			2.69E+06	0		
RF		0.00E+00	5.36E+08	NA	100%	0.00E+00	5.36E+08	NA
Chloroform	6:70	0			0.00E+00	0		
RF		0.00E+00	1.30E+09	NA	ND	0.00E+00	1.30E+09	NA
1,1,1-Trichloroethane	6:93	5971323			0.00E+00	6196937		
RF		1.19E+09	1.23E+09	-3	ND	1.24E+09	1.23E+09	0
Carbon tetrachloride	7:12	0			0.00E+00	0		
RF		0.00E+00	1.59E+09	NA	ND	0.00E+00	1.59E+09	NA
Benzene (PID)	7:36	522651			0.00E+00	638238		
RF		1.05E+08	1.20E+08	-13	ND	1.28E+08	1.20E+08	7
1,2-Dichloroethane	7:41	5318307			0.00E+00	4344759		
RF		1.06E+09	1.06E+09	0	ND	8.69E+08	1.06E+09	-18
Trichloroethene	8:16	5842586			0.00E+00	6662864		
RF		1.17E+09	1.15E+09	1	ND	1.33E+09	1.15E+09	16
Toluene (PID)	9:84	613138			0.00E+00	706312		
RF		1.23E+08	1.17E+08	4	ND	1.41E+08	1.17E+08	20
1,1,2-Trichloroethane	10:43	5305532			0.00E+00	4413011		
RF		1.06E+09	1.06E+09	0	ND	8.83E+08	1.06E+09	-17
Tetrachloroethene	10:65	5421365			0.00E+00	5280622		
RF		1.08E+09	9.95E+08	9	ND	1.06E+09	9.95E+08	6
Chlorobenzene (Surrogate-PID)	11:87	0			478157	0		
RF		0.00E+00	8.93E+07	NA	107%	0.00E+00	8.93E+07	NA
1,1,1,2-Tetrachloroethane	12:00	0			0.00E+00	0		
RF		0.00E+00	1.12E+09	NA	ND	0.00E+00	1.12E+09	NA
Ethylbenzene (PID)	12:00	0			0.00E+00	0		
RF		0.00E+00	1.41E+08	NA	ND	0.00E+00	1.41E+08	NA
m,p-Xylene (PID)	12:16	1467666			0.00E+00	1418298		
RF		2.94E+08	3.04E+08	-3	ND	2.84E+08	3.04E+08	-7
o-Xylene (PID)	12:77	496969			0.00E+00	584321		
RF		9.94E+07	1.08E+08	-8	ND	1.17E+08	1.08E+08	8
1,1,2,2-Tetrachloroethane	13:77	0			0.00E+00	0		
RF		0.00E+00	9.81E+08	NA	ND	0.00E+00	9.81E+08	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

7/10/96

ANALYST: David M. Pride

REVIEWED BY: Marcia LeFrancois

TABLE B-3
RESPONSE FACTORS FOR THREE POINT CALIBRATION
SUBJECT SITE, CALIFORNIA
JUNE 11, 1996

FDUILCO #1

FILE: 061113PT.WK3

STANDARD CONC. (ug/L)		5000	5000	5000	AVERAGE		RELATIVE
INJECTION VOLUME(uL)		0.50	1.00	2.00	RESPONSE	STANDARD	% STANDARD
COMPOUND/WEIGHT(ug)	RT	0.0025	0.0050	0.0100	FACTOR	DEVIATION	DEVIATION
Dichlorodifluoromethane	2:87	242694	491385	953537			
CF		9.71E+07	9.83E+07	9.54E+07	9.69E+07	1.47E+06	2
Vinyl chloride	3:20	1222677	1969214	4735684			
CF		4.89E+08	3.94E+08	4.74E+08	4.52E+08	5.11E+07	11
Chloroethane	3:48	465013	904500	2170714			
CF		1.86E+08	1.81E+08	2.17E+08	1.95E+08	1.96E+07	10
Trichlorofluoromethane	3:87	1543304	2024479	5326518			
CF		6.17E+08	4.05E+08	5.33E+08	5.18E+08	1.07E+08	21
1,1,2-Trichloro-trifluoroethane	4:28	1717670	3352063	6659969			
CF		6.87E+08	6.70E+08	6.66E+08	6.74E+08	1.11E+07	2
1,1-Dichloroethene (PID)	4:26	98098	199100	343179			
CF		3.92E+07	3.98E+07	3.43E+07	3.78E+07	3.02E+06	8
Methylene chloride	4:91	3130434	4873284	10690733			
CF		1.25E+09	9.75E+08	1.07E+09	1.10E+09	1.41E+08	13
trans-1,2-Dichloroethene	5:19	2703538	4428074	10280368			
CF		1.08E+09	8.86E+08	1.03E+09	9.98E+08	1.01E+08	10
1,1-Dichloroethane	5:68	2834524	4618221	10205546			
CF		1.13E+09	9.24E+08	1.02E+09	1.03E+09	1.05E+08	10
cis-1,2-Dichloroethene	6:34	2690851	4471766	9423301			
CF		1.08E+09	8.94E+08	9.42E+08	9.71E+08	9.43E+07	10
Bromochloromethane (Surrogate)	6:57	1331478	2536433	5678421			
CF		5.33E+08	5.07E+08	5.68E+08	5.36E+08	3.04E+07	6
Chloroform	6:70	2922162	7042828	13206540			
CF		1.17E+09	1.41E+09	1.32E+09	1.30E+09	1.21E+08	9
1,1,1-Trichloroethane	6:93	3407288	5593457	12192926			
CF		1.36E+09	1.12E+09	1.22E+09	1.23E+09	1.23E+08	10
Carbon tetrachloride	7:12	4383040	7222286	15752193			
CF		1.75E+09	1.44E+09	1.58E+09	1.59E+09	1.55E+08	10
Benzene (PID)	7:36	330160	539019	1192756			
CF		1.32E+08	1.08E+08	1.19E+08	1.20E+08	1.21E+07	10
1,2-Dichloroethane	7:41	2837031	5119321	10212894			
CF		1.13E+09	1.02E+09	1.02E+09	1.06E+09	6.48E+07	6
Trichloroethene	8:16	3176619	5541815	10765678			
CF		1.27E+09	1.11E+09	1.08E+09	1.15E+09	1.04E+08	9
Toluene (PID)	9:84	284042	594722	1197331			
CF		1.14E+08	1.19E+08	1.20E+08	1.17E+08	3.33E+06	3
1,1,2-Trichloroethane	10:43	2691128	5984053	9078205			
CF		1.08E+09	1.20E+09	9.08E+08	1.06E+09	1.45E+08	14
Tetrachloroethene	10:65	2338885	5978956	8524493			
CF		9.36E+08	1.20E+09	8.52E+08	9.95E+08	1.79E+08	18
Chlorobenzene (Surrogate-PID)	11:87	194631	441745	1016675			
CF		7.79E+07	8.83E+07	1.02E+08	8.93E+07	1.19E+07	13
1,1,1,2-Tetrachloroethane	12:00	2673943	6464342	9926914			
CF		1.07E+09	1.29E+09	9.93E+08	1.12E+09	1.56E+08	14
Ethylbenzene (PID)	12:00	417647	728804	1100433			
CF		1.67E+08	1.46E+08	1.10E+08	1.41E+08	2.88E+07	20
m,p-Xylene (PID)	12:16	858044	1532849	2621210			
CF		3.43E+08	3.07E+08	2.62E+08	3.04E+08	4.06E+07	13
o-Xylene (PID)	12:77	254627	639803	953345			
CF		1.02E+08	1.28E+08	9.53E+07	1.08E+08	1.73E+07	16
1,1,2,2-Tetrachloroethane	13:77	2591864	5074712	8921429			
CF		1.04E+09	1.01E+09	8.92E+08	9.81E+08	7.80E+07	8

RT = Retention Time

CF = Calibration Factor

ug/L = Micrograms per Liter

uL = Microliter

ug = Microgram

6/11/96

Analyst: Ragi Abraham

Reviewed by: David M. Pride

TABLE B-3
RESPONSE FACTORS FOR THREE POINT CALIBRATION
SUBJECT SITE, CALIFORNIA
JUNE 17, 1996

PIONEER CO. #4

FILE: 0417UPT.WK3

STANDARD CONC. (ug/L)		5000	5000	5000	AVERAGE		RELATIVE
INJECTION VOLUME (uL)		0.50	1.00	2.00	RESPONSE	STANDARD	% STANDARD
COMPOUND/WEIGHT(ug)	RT	0.0025	0.0050	0.0100	FACTOR	DEVIATION	DEVIATION
Dichlorodifluoromethane	2:77	1120302	2289141	3983594			
CF		4.48E+08	4.58E+08	3.98E+08	4.34E+08	3.30E+07	8
Vinyl chloride	3:05	4291670	5970762	21771728			
CF		1.72E+09	1.19E+09	2.18E+09	1.70E+09	4.92E+08	29
Chloroethane	3:37	2648218	3598668	7620973			
CF		1.06E+09	7.20E+08	7.62E+08	8.47E+08	1.85E+08	22
Trichlorofluoromethane	3:56	2866068	9998371	18164987			
CF		1.15E+09	2.00E+09	1.82E+09	1.59E+09	4.27E+08	27
1,1,2-Trichloro-trifluoroethane	4:17	8845318	17204704	40791520			
CF		3.54E+09	3.44E+09	4.08E+09	3.69E+09	3.44E+08	9
1,1-Dichloroethene (PID)	4:15	142769	402484	581974			
CF		5.71E+07	8.05E+07	5.82E+07	6.53E+07	1.32E+07	20
Methylene chloride	4:71	6907298	15255744	20239056			
CF		2.76E+09	3.05E+09	2.02E+09	2.61E+09	5.30E+08	20
trans-1,2-Dichloroethene	5:01	8463738	13709056	25738752			
CF		3.39E+09	2.74E+09	2.57E+09	2.90E+09	4.28E+08	15
1,1-Dichloroethane	5:46	7397354	13449600	28904816			
CF		2.96E+09	2.69E+09	2.89E+09	2.85E+09	1.40E+08	5
cis-1,2-Dichloroethene	6:08	6862186	15250784	24927984			
CF		2.74E+09	3.05E+09	2.49E+09	2.76E+09	2.79E+08	10
Bromochloromethane (Surrogate)	6:23	2859290	8864845	15547160			
CF		1.14E+09	1.78E+09	1.55E+09	1.49E+09	3.21E+08	22
Chloroform	6:41	15619468	22316272	54605504			
CF		6.25E+09	4.46E+09	5.46E+09	5.39E+09	8.94E+08	17
1,1,1-Trichloroethane	6:68	14888552	21500544	46440544			
CF		5.96E+09	4.30E+09	4.64E+09	4.97E+09	8.74E+08	18
Carbon tetrachloride	6:88	12821160	38235008	65694784			
CF		5.13E+09	7.65E+09	6.59E+09	6.45E+09	1.26E+09	20
Benzene (PID)	7:09	619403	1240367	2805645			
CF		2.48E+08	2.48E+08	2.81E+08	2.59E+08	1.88E+07	7
1,2-Dichloroethane	7:10	14382362	19396272	45410568			
CF		5.75E+09	3.88E+09	4.54E+09	4.72E+09	9.50E+08	20
Trichloroethene	7:87	10012272	17717632	40867168			
CF		4.00E+09	3.54E+09	4.09E+09	3.88E+09	2.93E+08	8
Toluene (PID)	9:57	677539	1364120	2773917			
CF		2.71E+08	2.73E+08	2.77E+08	2.74E+08	3.29E+06	1
1,1,2-Trichloroethane	10:14	8440986	15785432	39541440			
CF		3.38E+09	3.16E+09	3.95E+09	3.50E+09	4.12E+08	12
Tetrachloroethene	10:41	11172400	19704160	54992352			
CF		4.47E+09	3.94E+09	5.50E+09	4.64E+09	7.93E+08	17
Chlorobenzene (Surrogate-PID)	11:69	689413	1373704	2819880			
CF		2.76E+08	2.75E+08	2.82E+08	2.77E+08	3.92E+06	1
1,1,1,2-Tetrachloroethane	11:84	11861600	20430544	49379232			
CF		4.74E+09	4.09E+09	4.94E+09	4.59E+09	4.47E+08	10
Ethylbenzene (PID)	11:86	571432	1180557	2526626			
CF		2.29E+08	2.36E+08	2.53E+08	2.39E+08	1.23E+07	5
m,p-Xylene (PID)	12:05	1368642	2742886	5738429			
CF		5.47E+08	5.49E+08	5.74E+08	5.57E+08	1.49E+07	3
o-Xylene (PID)	12:71	541468	1142100	2372133			
CF		2.17E+08	2.28E+08	2.37E+08	2.27E+08	1.04E+07	5
1,1,2,2-Tetrachloroethane	13:79	9222918	17263984	40405472			
CF		3.69E+09	3.45E+09	4.04E+09	3.73E+09	2.96E+08	8

RT = Retention Time
CF = Calibration Factor

ug/L = Micrograms per Liter
uL = Microliter
ug = Microgram

6/17/96

Analyst: Ragi Abraham

Reviewed by: David M. Pride

TABLE B-3
RESPONSE FACTORS FOR THREE POINT CALIBRATION
SUBJECT SITE, CALIFORNIA
MAY 29, 1996

PIDVELCD #1

FILE: 052993PT.WK3

STANDARD CONC. (ug/L) INJECTION VOLUME(uL) COMPOUND/WEIGHT(ug)	RT	5000 0.50 0.0025	5000 1.00 0.0050	5000 2.00 0.0100	AVERAGE RESPONSE FACTOR	STANDARD DEVIATION	RELATIVE % STANDARD DEVIATION
Dichlorodifluoromethane	2:96	810318	1304923	2745758			
CF		3.24E+08	2.61E+08	2.75E+08	2.87E+08	3.32E+07	12
Vinyl chloride	3:32	1825975	3000213	5715667			
CF		7.30E+08	6.00E+08	5.72E+08	6.34E+08	8.47E+07	13
Chloroethane	3:61	1475621	2488133	5985375			
CF		5.90E+08	4.98E+08	5.99E+08	5.62E+08	5.60E+07	10
Trichlorofluoromethane	3:79	1446521	3556310	7125783			
CF		5.79E+08	7.11E+08	7.13E+08	6.67E+08	7.70E+07	12
1,1,2-Trichloro-trifluoroethane	4:45	3533299	8042216	14559981			
CF		1.41E+09	1.61E+09	1.46E+09	1.49E+09	1.03E+08	7
1,1-Dichloroethene (PID)	4:42	93668	162318	427729			
CF		3.75E+07	3.25E+07	4.28E+07	3.76E+07	5.16E+06	14
Methylene chloride	5:01	3408478	5611795	10950023			
CF		1.36E+09	1.12E+09	1.10E+09	1.19E+09	1.48E+08	12
trans-1,2-Dichloroethene	5:29	2958224	4764529	9427377			
CF		1.18E+09	9.53E+08	9.43E+08	1.03E+09	1.36E+08	13
1,1-Dichloroethane	5:76	3009014	5016787	10229822			
CF		1.20E+09	1.00E+09	1.02E+09	1.08E+09	1.10E+08	10
cis-1,2-Dichloroethene	6:40	2849928	4868023	9887094			
CF		1.14E+09	9.74E+08	9.89E+08	1.03E+09	9.20E+07	9
Chloroform	6:75	3795750	6258293	12642365			
CF		1.52E+09	1.25E+09	1.26E+09	1.34E+09	1.50E+08	11
1,1,1-Trichloroethane	6:99	3316620	5626015	11501537			
CF		1.33E+09	1.13E+09	1.15E+09	1.20E+09	1.10E+08	9
Carbon tetrachloride	7:19	4385037	7480685	14703725			
CF		1.75E+09	1.50E+09	1.47E+09	1.57E+09	1.57E+08	10
Benzene (PID)	7:41	385807	644210	1272637			
CF		1.54E+08	1.29E+08	1.27E+08	1.37E+08	1.52E+07	11
1,2-Dichloroethane	7:47	2967703	5206516	10741522			
CF		1.19E+09	1.04E+09	1.07E+09	1.10E+09	7.65E+07	7
Trichloroethene	8:21	3365925	5616256	11715171			
CF		1.35E+09	1.12E+09	1.17E+09	1.21E+09	1.17E+08	10
Toluene (PID)	9:90	341248	880259	1432929			
CF		1.36E+08	1.76E+08	1.43E+08	1.52E+08	2.11E+07	14
1,1,2-Trichloroethane	10:50	3423996	5767923	10582088			
CF		1.37E+09	1.15E+09	1.06E+09	1.19E+09	1.60E+08	13
Tetrachloroethene	10:72	3638328	6167243	12803544			
CF		1.46E+09	1.23E+09	1.28E+09	1.32E+09	1.17E+08	9
1,1,1,2-Tetrachloroethane	12:08	3482832	6062960	11208577			
CF		1.39E+09	1.21E+09	1.12E+09	1.24E+09	1.39E+08	11
Ethylbenzene (PID)	12:06	317083	535879	1106471			
CF		1.27E+08	1.07E+08	1.11E+08	1.15E+08	1.05E+07	9
m,p-Xylene (PID)	12:22	967955	1546610	2887939			
CF		3.87E+08	3.09E+08	2.89E+08	3.28E+08	5.19E+07	16
o-Xylene (PID)	12:84	352008	524218	1080265			
CF		1.41E+08	1.05E+08	1.08E+08	1.18E+08	1.99E+07	17
1,1,2,2-Tetrachloroethane	13:86	3478808	5903736	11230671			
CF		1.39E+09	1.18E+09	1.12E+09	1.23E+09	1.41E+08	11

RT = Retention Time
CF = Calibration Factor

ug/L = Micrograms per Liter
uL = Microliter
ug = Microgram

5/29/96

Analyst: David M. Pride

Reviewed by: Ragi Abraham

TABLE B-3
RESPONSE FACTORS FOR THREE POINT CALIBRATION
SUBJECT SITE, CALIFORNIA
MAY 22, 1996

PID\ELCD #1

FILE: 052223RT.WK3

STANDARD CONC. (ug/L) INJECTION VOLUME(uL) COMPOUND/WEIGHT(ug)	RT	5000 0.50 0.0025	5000 1.00 0.0050	5000 2.00 0.0100	AVERAGE RESPONSE FACTOR	STANDARD DEVIATION	RELATIVE % STANDARD DEVIATION
Dichlorodifluoromethane	2:97	288358	593711	1413232			
CF		1.15E+08	1.19E+08	1.41E+08	1.25E+08	1.41E+07	11
Vinyl chloride	3:33	898968	1888791	5344417			
CF		3.60E+08	3.78E+08	5.34E+08	4.24E+08	9.61E+07	23
Chloroethane	3:62	674734	1461085	3511565			
CF		2.70E+08	2.92E+08	3.51E+08	3.04E+08	4.20E+07	14
Trichlorofluoromethane	3:81	1390162	2069393	6581512			
CF		5.56E+08	4.14E+08	6.58E+08	5.43E+08	1.23E+08	23
1,1,2-Trichloro-trifluoroethane	4:47	2641983	5835195	12637896			
CF		1.06E+09	1.17E+09	1.26E+09	1.16E+09	1.04E+08	9
1,1-Dichloroethene (PID)	4:45	70368	136513	359738			
CF		2.81E+07	2.73E+07	3.60E+07	3.05E+07	4.78E+06	16
Methylene chloride	5:02	2103247	4476132	10380821			
CF		8.41E+08	8.95E+08	1.04E+09	9.25E+08	1.02E+08	11
trans-1,2-Dichloroethene	5:31	2518054	4024020	9413172			
CF		1.01E+09	8.05E+08	9.41E+08	9.18E+08	1.03E+08	11
1,1-Dichloroethane	5:78	2427007	3894451	9030242			
CF		9.71E+08	7.79E+08	9.03E+08	8.84E+08	9.73E+07	11
cis-1,2-Dichloroethene	6:42	2804001	4662718	10802202			
CF		1.12E+09	9.33E+08	1.08E+09	1.04E+09	9.94E+07	10
Chloroform	6:77	3160497	5359737	11983468			
CF		1.26E+09	1.07E+09	1.20E+09	1.18E+09	9.77E+07	8
1,1,1-Trichloroethane	7:01	2793602	4584996	10547914			
CF		1.12E+09	9.17E+08	1.05E+09	1.03E+09	1.03E+08	10
Carbon tetrachloride	7:21	3430579	5783777	12924546			
CF		1.37E+09	1.16E+09	1.29E+09	1.27E+09	1.09E+08	9
Benzene (PID)	7:43	248282	488270	1017676			
CF		9.93E+07	9.77E+07	1.02E+08	9.96E+07	2.07E+06	2
1,2-Dichloroethane	7:48	2679215	4874237	10359169			
CF		1.07E+09	9.75E+08	1.04E+09	1.03E+09	4.90E+07	5
Trichloroethene	8:23	2865500	4971336	11193353			
CF		1.15E+09	9.94E+08	1.12E+09	1.09E+09	8.11E+07	7
Toluene (PID)	9:93	248451	477240	980491			
CF		9.94E+07	9.54E+07	9.80E+07	9.76E+07	2.00E+06	2
1,1,2-Trichloroethane	10:51	2654174	4532598	9640443			
CF		1.06E+09	9.07E+08	9.64E+08	9.77E+08	7.84E+07	8
Tetrachloroethene	10:72	3175501	5665857	12452090			
CF		1.27E+09	1.13E+09	1.25E+09	1.22E+09	7.30E+07	6
1,1,1,2-Tetrachloroethane	12:09	2846951	5031700	10473957			
CF		1.14E+09	1.01E+09	1.05E+09	1.06E+09	6.78E+07	6
Ethylbenzene (PID)	12:09	223652	430339	875439			
CF		8.95E+07	8.61E+07	8.75E+07	8.77E+07	1.70E+06	2
m,p-Xylene (PID)	12:25	554788	1097912	2183941			
CF		2.22E+08	2.20E+08	2.18E+08	2.20E+08	1.79E+06	1
o-Xylene (PID)	12:86	213008	438942	839269			
CF		8.52E+07	8.78E+07	8.39E+07	8.56E+07	1.97E+06	2
1,1,2,2-Tetrachloroethane	13:87	2507047	4477848	9464526			
CF		1.00E+09	8.96E+08	9.46E+08	9.48E+08	5.36E+07	6

RT = Retention Time
CF = Calibration Factor

ug/L = Micrograms per Liter
uL = Microliter
ug = Microgram

5/22/96

Analyst: Ragi Abraham

Reviewed by: David M. Pride

TABLE B-4
QUALITY ASSURANCE/QUALITY CONTROL REPORT
LAB CONTROL SAMPLE, BLANK ANALYSIS, AND LAST GC TEST RUN
JUNE 11, 1996

PID/ELCD #1

FILE: 0611QCLC.WK

		LAB CONTROL SAMPLE			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	2:87	453350			0.00E+00	0		
RF		9.07E+07	9.69E+07	-6	ND	0.00E+00	9.69E+07	NA
Vinyl chloride	3:20	2183288			0.00E+00	0		
RF		4.37E+08	4.52E+08	-3	ND	0.00E+00	4.52E+08	NA
Chloroethane	3:48	1010596			0.00E+00	0		
RF		2.02E+08	1.95E+08	4	ND	0.00E+00	1.95E+08	NA
Trichlorofluoromethane	3:67	2367574			0.00E+00	0		
RF		4.74E+08	5.18E+08	-9	ND	0.00E+00	5.18E+08	NA
1,1,2-Trichloro-trifluoroethane	4:28	3785969			0.00E+00	0		
RF		7.57E+08	6.74E+08	12	ND	0.00E+00	6.74E+08	NA
1,1-Dichloroethene (PID)	4:26	161782			0.00E+00	0		
RF		3.24E+07	3.78E+07	-14	ND	0.00E+00	3.78E+07	NA
Methylene chloride	4:91	5346191			0.00E+00	0		
RF		1.07E+09	1.10E+09	-3	ND	0.00E+00	1.10E+09	NA
trans-1,2-Dichloroethene	5:19	4768086			0.00E+00	0		
RF		9.54E+08	9.98E+08	-4	ND	0.00E+00	9.98E+08	NA
1,1-Dichloroethane	5:68	4778432			0.00E+00	0		
RF		9.56E+08	1.03E+09	-7	ND	0.00E+00	1.03E+09	NA
Cis-1,2-Dichloroethene	6:34	4556263			0.00E+00	0		
RF		9.11E+08	9.71E+08	-6	ND	0.00E+00	9.71E+08	NA
Bromochloromethane (Surrogate)	6:57	2712801			0.00E+00	0		
RF		5.43E+08	5.36E+08	1	ND	0.00E+00	5.36E+08	NA
Chloroform	6:70	6851478			0.00E+00	0		
RF		1.37E+09	1.30E+09	5	ND	0.00E+00	1.30E+09	NA
1,1,1-Trichloroethane	6:93	5698736			0.00E+00	0		
RF		1.14E+09	1.23E+09	-8	ND	0.00E+00	1.23E+09	NA
Carbon tetrachloride	7:12	7459200			0.00E+00	0		
RF		1.49E+09	1.59E+09	-6	ND	0.00E+00	1.59E+09	NA
Benzene (PID)	7:36	572027			0.00E+00	0		
RF		1.14E+08	1.20E+08	-4	ND	0.00E+00	1.20E+08	NA
1,2-Dichloroethane	7:41	5079459			0.00E+00	0		
RF		1.02E+09	1.06E+09	-4	ND	0.00E+00	1.06E+09	NA
Trichloroethene	8:16	5506176			0.00E+00	0		
RF		1.10E+09	1.15E+09	-4	ND	0.00E+00	1.15E+09	NA
Toluene (PID)	9:84	613380			0.00E+00	0		
RF		1.23E+08	1.17E+08	4	ND	0.00E+00	1.17E+08	NA
1,1,2-Trichloroethane	10:43	4915909			0.00E+00	0		
RF		9.83E+08	1.06E+09	-7	ND	0.00E+00	1.06E+09	NA
Tetrachloroethene	10:65	4853417			0.00E+00	0		
RF		9.71E+08	9.95E+08	-2	ND	0.00E+00	9.95E+08	NA
Chlorobenzene (Surrogate-PID)	11:87	469588			0.00E+00	0		
RF		9.39E+07	8.93E+07	5	ND	0.00E+00	8.93E+07	NA
1,1,1,2-Tetrachloroethane	12:00	6221628			0.00E+00	0		
RF		1.24E+09	1.12E+09	11	ND	0.00E+00	1.12E+09	NA
Ethylbenzene (PID)	12:00	770291			0.00E+00	0		
RF		1.54E+08	1.41E+08	9	ND	0.00E+00	1.41E+08	NA
m,p-Xylene (PID)	12:16	1521317			0.00E+00	0		
RF		3.04E+08	3.04E+08	0	ND	0.00E+00	3.04E+08	NA
o-Xylene (PID)	12:77	555113			0.00E+00			
RF		1.11E+08	1.08E+08	2	ND	0.00E+00	1.08E+08	NA
1,1,2,2-Tetrachloroethane	13:77	4895281			0.00E+00			
RF		9.79E+08	9.81E+08	-0	ND	0.00E+00	9.81E+08	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

6/11/96

ANALYST: Ragi Abraham

REVIEWED BY: David M. Pride

TABLE B-4
QUALITY ASSURANCE/QUALITY CONTROL REPORT
LAB CONTROL SAMPLE, BLANK ANALYSIS, AND LAST GC TEST RUN
JUNE 17, 1996

PID/ELCD #2

FILE: 0617QCLC3WK

		LAB CONTROL SAMPLE			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	2:77	2362898			0.00E+00	0		
RF		4.73E+08	4.34E+08	9	ND	0.00E+00	4.34E+08	NA
Vinyl chloride	3:05	10202848			0.00E+00	0		
RF		2.04E+09	1.70E+09	20	ND	0.00E+00	1.70E+09	NA
Chloroethane	3:37	3121528			0.00E+00	0		
RF		6.24E+08	8.47E+08	-26	ND	0.00E+00	8.47E+08	NA
Trichlorofluoromethane	3:56	9698003			0.00E+00	0		
RF		1.94E+09	1.59E+09	22	ND	0.00E+00	1.59E+09	NA
1,1,2-Trichloro-trifluoroethane	4:17	14517888			0.00E+00	0		
RF		2.90E+09	3.69E+09	-21	ND	0.00E+00	3.69E+09	NA
1,1-Dichloroethene (PID)	4:15	307677			0.00E+00	0		
RF		6.15E+07	6.53E+07	-6	ND	0.00E+00	6.53E+07	NA
Methylene chloride	4:71	11195496			0.00E+00	0		
RF		2.24E+09	2.61E+09	-14	ND	0.00E+00	2.61E+09	NA
trans-1,2-Dichloroethene	5:01	12682616			0.00E+00	0		
RF		2.54E+09	2.90E+09	-13	ND	0.00E+00	2.90E+09	NA
1,1-Dichloroethane	5:46	13277976			0.00E+00	0		
RF		2.66E+09	2.85E+09	-7	ND	0.00E+00	2.85E+09	NA
Cis-1,2-Dichloroethene	6:08	13209800			0.00E+00	0		
RF		2.64E+09	2.76E+09	-4	ND	0.00E+00	2.76E+09	NA
Bromochloromethane (Surrogate)	6:23	7750611			0.00E+00	0		
RF		1.55E+09	1.49E+09	4	ND	0.00E+00	1.49E+09	NA
Chloroform	6:41	28327392			0.00E+00	0		
RF		5.67E+09	5.39E+09	5	ND	0.00E+00	5.39E+09	NA
1,1,1-Trichloroethane	6:68	22563184			0.00E+00	0		
RF		4.51E+09	4.97E+09	-9	ND	0.00E+00	4.97E+09	NA
Carbon tetrachloride	6:88	34828768			0.00E+00	0		
RF		6.97E+09	6.45E+09	8	ND	0.00E+00	6.45E+09	NA
Benzene (PID)	7:09	1345364			0.00E+00	0		
RF		2.69E+08	2.59E+08	4	ND	0.00E+00	2.59E+08	NA
1,2-Dichloroethane	7:10	26342864			0.00E+00	0		
RF		5.27E+09	4.72E+09	12	ND	0.00E+00	4.72E+09	NA
Trichloroethene	7:87	21447728			0.00E+00	0		
RF		4.29E+09	3.88E+09	11	ND	0.00E+00	3.88E+09	NA
Toluene (PID)	9:57	1298746			0.00E+00	0		
RF		2.60E+08	2.74E+08	-5	ND	0.00E+00	2.74E+08	NA
1,1,2-Trichloroethane	10:14	16744632			0.00E+00	0		
RF		3.35E+09	3.50E+09	-4	ND	0.00E+00	3.50E+09	NA
Tetrachloroethene	10:41	24037072			0.00E+00	0		
RF		4.81E+09	4.64E+09	4	ND	0.00E+00	4.64E+09	NA
Chlorobenzene (Surrogate-PID)	11:69	1329675			0.00E+00	0		
RF		2.66E+08	2.77E+08	-4	ND	0.00E+00	2.77E+08	NA
1,1,1,2-Tetrachloroethane	11:84	25040256			0.00E+00	0		
RF		5.01E+09	4.59E+09	9	ND	0.00E+00	4.59E+09	NA
Ethylbenzene (PID)	11:86	1160790			0.00E+00	0		
RF		2.32E+08	2.39E+08	-3	ND	0.00E+00	2.39E+08	NA
m,p-Xylene (PID)	12:05	2786085			0.00E+00	0		
RF		5.57E+08	5.57E+08	0	ND	0.00E+00	5.57E+08	NA
o-Xylene (PID)	12:71	1105797			0.00E+00			
RF		2.21E+08	2.27E+08	-3	ND	0.00E+00	2.27E+08	NA
1,1,2,2-Tetrachloroethane	13:79	19632640			0.00E+00			
RF		3.93E+09	3.73E+09	5	ND	0.00E+00	3.73E+09	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

6/17/96

ANALYST: Ragi Abraham

REVIEWED BY: David M. Pride

TABLE B-4
QUALITY ASSURANCE/QUALITY CONTROL REPORT
LAB CONTROL SAMPLE, BLANK ANALYSIS, AND LAST GC TEST RUN
MAY 29, 1996

PID/ELCD #1

FILE: 0529QCLC.WK

		LAB CONTROL SAMPLE			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	2:98	1337477			0.00E+00	0		
RF		2.67E+08	2.87E+08	-7	ND	0.00E+00	1.29E+09	NA
Vinyl chloride	3:34	3196283			0.00E+00	0		
RF		6.39E+08	6.34E+08	1	ND	0.00E+00	6.34E+08	NA
Chloroethane	3:63	2556506			0.00E+00	0		
RF		5.11E+08	5.62E+08	-9	ND	0.00E+00	5.62E+08	NA
Trichlorofluoromethane	3:83	3742058			0.00E+00	0		
RF		7.48E+08	6.67E+08	12	ND	0.00E+00	6.67E+08	NA
1,1,2-Trichloro-trifluoroethane	4:49	8014866			0.00E+00	0		
RF		1.60E+09	1.49E+09	8	ND	0.00E+00	1.49E+09	NA
1,1-Dichloroethene (PID)	4:46	160728			0.00E+00	0		
RF		3.21E+07	3.76E+07	-15	ND	0.00E+00	3.76E+07	NA
Methylene chloride	5:03	5663166			0.00E+00	0		
RF		1.13E+09	1.19E+09	-5	ND	0.00E+00	1.19E+09	NA
trans-1,2-Dichloroethene	5:32	4607110			0.00E+00	0		
RF		9.21E+08	1.03E+09	-11	ND	0.00E+00	1.03E+09	NA
1,1-Dichloroethane	5:78	5076599			0.00E+00	0		
RF		1.02E+09	1.08E+09	-6	ND	0.00E+00	1.08E+09	NA
Cis-1,2-Dichloroethene	6:43	4802583			0.00E+00	0		
RF		9.61E+08	1.03E+09	-7	ND	0.00E+00	1.03E+09	NA
Chloroform	6:77	6404579			0.00E+00	0		
RF		1.28E+09	1.34E+09	-4	ND	0.00E+00	1.34E+09	NA
1,1,1-Trichloroethane	7:02	5738509			0.00E+00	0		
RF		1.15E+09	1.02E+09	13	ND	0.00E+00	1.02E+09	NA
Carbon tetrachloride	7:22	7478899			0.00E+00	0		
RF		1.50E+09	1.57E+09	-5	ND	0.00E+00	1.57E+09	NA
Benzene (PID)	7:43	617773			0.00E+00	0		
RF		1.24E+08	1.37E+08	-10	ND	0.00E+00	1.37E+08	NA
1,2-Dichloroethane	7:49	5233482			0.00E+00	0		
RF		1.05E+09	1.10E+09	-5	ND	0.00E+00	1.10E+09	NA
Trichloroethene	8:24	5499932			0.00E+00	0		
RF		1.10E+09	1.21E+09	-9	ND	0.00E+00	1.21E+09	NA
Toluene (PID)	9:92	738645			0.00E+00	0		
RF		1.48E+08	1.52E+08	-3	ND	0.00E+00	1.52E+08	NA
1,1,2-Trichloroethane	10:52	5673295			0.00E+00	0		
RF		1.13E+09	1.19E+09	-5	ND	0.00E+00	1.19E+09	NA
Tetrachloroethene	10:74	5992031			0.00E+00	0		
RF		1.20E+09	1.32E+09	-9	ND	0.00E+00	1.32E+09	NA
1,1,1,2-Tetrachloroethane	12:10	5793442			0.00E+00	0		
RF		1.16E+09	1.24E+09	-7	ND	0.00E+00	1.24E+09	NA
Ethylbenzene (PID)	12:07	539405			0.00E+00	0		
RF		1.08E+08	1.15E+08	-6	ND	0.00E+00	1.15E+08	NA
m,p-Xylene (PID)	12:23	1484520			0.00E+00	0		
RF		2.97E+08	3.28E+08	-9	ND	0.00E+00	3.28E+08	NA
o-Xylene (PID)	12:85	573616			0.00E+00	0		
RF		1.15E+08	1.18E+08	-3	ND	0.00E+00	1.18E+08	NA
1,1,2,2-Tetrachloroethane	13:88	5871901			0.00E+00	0		
RF		1.17E+09	1.23E+09	-5	ND	0.00E+00	1.23E+09	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

5/29/96

ANALYST: David M. Pride

REVIEWED BY: Ragi Abraham

TABLE B-4
QUALITY ASSURANCE/QUALITY CONTROL REPORT
LAB CONTROL SAMPLE, BLANK ANALYSIS, AND LAST GC TEST RUN
MAY 22, 1996

PID/ELCD #1

FILE: 0522QCLC.WK

		LAB CONTROL SAMPLE			BLANK	LAST GC TEST RUN		
STANDARD CONC. (ug/L)		5000	AVERAGE		AMBIENT AIR	5000	AVERAGE	
INJECTION VOLUME(uL)		1.00	RESPONSE	PERCENT	500	1.00	RESPONSE	PERCENT
COMPOUND/WEIGHT(ug)	RT	0.00500	FACTOR	DIFFERENCE		0.00500	FACTOR	DIFFERENCE
Dichlorodifluoromethane	2:95	671995			0.00E+00	0		
RF		1.34E+08	1.25E+08	7	ND	0.00E+00	1.25E+08	NA
Vinyl chloride	3:31	2421791			0.00E+00	0		
RF		4.84E+08	4.24E+08	14	ND	0.00E+00	4.24E+08	NA
Chloroethane	3:60	1504223			0.00E+00	0		
RF		3.01E+08	3.04E+08	-1	ND	0.00E+00	3.04E+08	NA
Trichlorofluoromethane	3:79	3022467			0.00E+00	0		
RF		6.04E+08	5.43E+08	11	ND	0.00E+00	5.43E+08	NA
1,1,2-Trichloro-trifluoroethane	4:44	6689007			0.00E+00	0		
RF		1.34E+09	1.16E+09	15	ND	0.00E+00	1.16E+09	NA
1,1-Dichloroethene (PID)	4:40	144637			0.00E+00	0		
RF		2.89E+07	3.05E+07	-5	ND	0.00E+00	3.05E+07	NA
Methylene chloride	5:00	4984400			0.00E+00	0		
RF		9.97E+08	9.25E+08	8	ND	0.00E+00	9.25E+08	NA
trans-1,2-Dichloroethene	5:28	4356119			0.00E+00	0		
RF		8.71E+08	9.18E+08	-5	ND	0.00E+00	9.18E+08	NA
1,1-Dichloroethane	5:76	4371174			0.00E+00	0		
RF		8.74E+08	8.84E+08	-1	ND	0.00E+00	8.84E+08	NA
Cis-1,2-Dichloroethene	6:41	5175442			0.00E+00	0		
RF		1.04E+09	1.04E+09	-1	ND	0.00E+00	1.04E+09	NA
Chloroform	6:75	5862219			0.00E+00	0		
RF		1.17E+09	1.18E+09	-0	ND	0.00E+00	1.18E+09	NA
1,1,1-Trichloroethane	7:00	5088617			0.00E+00	0		
RF		1.02E+09	1.03E+09	-1	ND	0.00E+00	1.03E+09	NA
Carbon tetrachloride	7:20	6394429			0.00E+00	0		
RF		1.28E+09	1.27E+09	0	ND	0.00E+00	1.27E+09	NA
Benzene (PID)	7:40	503591			0.00E+00	0		
RF		1.01E+08	9.96E+07	1	ND	0.00E+00	9.96E+07	NA
1,2-Dichloroethane	7:47	5040526			0.00E+00	0		
RF		1.01E+09	1.03E+09	-2	ND	0.00E+00	1.03E+09	NA
Trichloroethene	8:21	5358464			0.00E+00	0		
RF		1.07E+09	1.09E+09	-1	ND	0.00E+00	1.09E+09	NA
Toluene (PID)	9:91	499446			0.00E+00	0		
RF		9.99E+07	9.76E+07	2	ND	0.00E+00	9.76E+07	NA
1,1,2-Trichloroethane	10:51	4764205			0.00E+00	0		
RF		9.53E+08	9.77E+08	-3	ND	0.00E+00	9.77E+08	NA
Tetrachloroethene	10:72	5937888			0.00E+00	0		
RF		1.19E+09	1.22E+09	-2	ND	0.00E+00	1.22E+09	NA
1,1,1,2-Tetrachloroethane	12:10	5265245			0.00E+00	0		
RF		1.05E+09	1.06E+09	-1	ND	0.00E+00	1.06E+09	NA
Ethylbenzene (PID)	12:08	434428			0.00E+00	0		
RF		8.69E+07	8.77E+07	-1	ND	0.00E+00	8.77E+07	NA
m,p-Xylene (PID)	12:24	1074317			0.00E+00	0		
RF		2.15E+08	2.20E+08	-2	ND	0.00E+00	2.20E+08	NA
o-Xylene (PID)	12:85	415953			0.00E+00	0		
RF		8.32E+07	8.56E+07	-3	ND	0.00E+00	8.56E+07	NA
1,1,2,2-Tetrachloroethane	13:88	4880341			0.00E+00	0		
RF		9.76E+08	9.48E+08	3	ND	0.00E+00	9.48E+08	NA

RT = Retention Time
RF = Response Factor
NA = Not Applicable

ug/L = microgram per Liter
uL = microliter
ug = microgram

5/22/96

ANALYST: Ragi Abraham

REVIEWED BY: David M. Pride

Appendix C

CHAIN-OF-CUSTODY FORMS

CLEAN II

7821

CHAIN-OF-CUSTODY RECORD

Site Name: Site 24 VOC Source Area
CTO Number: 073

Sampler's Name(s): Dan Eldredge
Sampler's Signature(s): [signature]

Site Contact/Supervisor: Carl Lind.

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Parkway Suite E6 Laguna Hills, CA
Field QC Package Number:
Field Logbook/Page Number: AT-73W001 Page 34
Date: 5-23-96

Pay Items/Analyses Required: 8260 VOC

QC Level: C | (D) | E

TAT (in days): (2) | 7 | 14 | 30

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Preservation: None	Container Nos. (2 digit)	Remarks (e.g., MS, MSD)
73W2350	5-23-96 1900	DATE 5-23-96 DGDBMW 45	Soil GAS		Tedlar 1 liter		01	

Relinquished By	Received By	Date	Time	Reason for Transfer
[signature]	Marcia A. Francis	5-23-96	1:25	Transport to Lab

Comments/Instructions: Pat Brooks Project Mgr. 619-687-8851

Method of Shipment: Hand Carry

Airbill No.:

Total No. of Coolers Shipped: 1

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9605-211

CLEAN II

CHAIN-OF-CUSTODY RECORD

12069

Site Name: Site 24 VOC Source Area
CTO Number: 073

Sampler's Name(s): Don Eldredge
Sampler's Signature(s): Don Eldredge

Site Contact/Supervisor: Carl Lind.

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Pkwy, Suite E6 Laguna Hills, CA
Field QC Package Number:
Field Logbook/Page Number: AT-73W001
Date: 5-28-96

Pay Items/Analyses Required: 7021.5 Total VOC; 7200.6 D-2; 7000.6 CO2

QC Level: C D E

TAT (in days): 2 7 14 30

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Preservation: None	None	None	Remarks (e.g., MS, MSD)
						Container Nos. (2 digit)			
73W2351	5-28-96 1400	VES System	Soil GAS		Tedlar 1 liter	01			
73W2352	5-28-96 1400	24AS 1	Soil GAS		Tedlar 1 liter	01	02	03	

Relinquished By	Received By	Date	Time	Reason for Transfer
Don Eldredge	Marcia A. Le Barcos	5/28/96	3:15	Transport to Lab
Marcia A. Le Barcos	R. Forsyth	5/28/96	5:30	

Comments/Instructions: Pat Brooks Project Mgr. 619 687-8851

Method of Shipment: Hand carry

Airbill No.: ——

Total No. of Coolers Shipped: 1

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CLEAN II

9605-235

CHAIN-OF-CUSTODY RECORD

12070

Site Name: Site 24 VOC Source Area
CTO Number: 073

Sampler's Name(s): Dan Eldridge
Sampler's Signature(s): [signature]

Site Contact/Supervisor: Carl Lind

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Pkwy Suite E6 Laguna Hills CA
Field QC Package Number: OPE 5-31-96
Field Logbook/Page Number: ~~AF~~ VT-73W-002
Date: 5-30-96

Pay Items/Analyses Required: 8021 VOC, 700.5, 700.6, 700.7, 700.8

QC Level: C | (D) | E

TAT (in days): 2 | (7) | 14 | 30

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Preservation: None	Preservation: None	Preservation: None	Container Nos. (2 digit)									Remarks (e.g., MS, MSD)
73W2353	1035 5-30-96	249VE 1	Soil Gas		1 liter Tedlar				01	02	03							9124
73W2354	1026 5-30-96	VES Sys. Exhaust	Soil GAS		1 liter Tedlar				01									9125
OPE 5-30-96																		

Relinquished By	Received By	Date	Time	Reason for Transfer	Comments/Instructions:
[signature]	Marcia A. Szymanski	5/30/96	4:20	Transport to lab.	Pat Brooks (619) 687-8851
Marcia A. Szymanski	Rick Forsyth	5/30/96	5:30	"	

Method of Shipment: Hand Carry

Airbill No.: NA

Total No. of Coolers Shipped: 1

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CLEAN II

CHAIN-OF-CUSTODY RECORD

13728

Site Name: MCAS El Toro
CTO Number: 073

Sampler's Name(s): Carl J. Lind
Sampler's Signature(s): [signature]

Site Contact/Supervisor: Carl J. Lind

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Parkway, Suite E6, Laguna Hills CA 92653
Field QC Package Number: NA
Field Logbook/Page Number: VT-73W-002 / 0027
Date: 06/10/96

Pay Items/Analyses Required: 700.5 / 8010/8020

QC Level: C | (D) | E

TAT (in days): (2) | 7 | 14 | 30

Preservation: NA

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Container Nos. (2 digit)	Remarks (e.g., MS, MSD)
~~73W2348~~ 73W2355 M	6-10/1740	24SVE1	SG	NO	TEDLAR	01	REG

Relinquished By	Received By	Date	Time	Reason for Transfer
[signature]	Marcia LeFrancois	6/11/96	12:40	

Comments/Instructions: Soil Gas

Method of Shipment: HAND CARRY

Airbill No.: NA

Total No. of Coolers Shipped: 1

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CLEAN II

CHAIN-OF-CUSTODY RECORD

13727

Site Name: MCAS EL TORO
CTO Number: 073

Sampler's Name(s): Carl J. Lind
Sampler's Signature(s): CARL J. LIND

Site Contact/Supervisor: CARL J. LIND

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Parkway, Suite E6, Laguna Niguel, CA 92653
Field QC Package Number: NA
Field Logbook/Page Number: VT-73W-002 / 0028
Date: 06/11/96

Pay Items/Analyses Required: 8010/8620; 700.5

QC Level: C | (D) | E

TAT (in days): (2) | 7 | 14 | 30

Preservation: NA

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Container Nos. (2 digit)	Remarks (e.g., MS, MSD)
73W2349	6-11/1623	245VE1	SG	NO	TEDLAR	01	REG
73W2356 ML							

Relinquished By	Received By	Date	Time	Reason for Transfer
Carl J. Lind	Marcia J. Davis	6/11/96	5:25	Analysis

Comments/Instructions: Soil Gas

Method of Shipment: HAND CARRY

Airbill No.: NA

Total No. of Coolers Shipped: 1

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CLEAN II

CHAIN-OF-CUSTODY RECORD

13729

Site Name: MCAS El Toro
CTO Number: 073

Sampler's Name(s): Carl J. Lind
Sampler's Signature(s): [signature]

Site Contact/Supervisor: Carl J. Lind

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Parkway, Suite E6 Laguna Hills, CA 92653
Field QC Package Number: NA
Field Logbook/Page Number: VT-73W-002/029
Date:

Pay Items/Analyses Required: 700.5 / 8010/8020

QC Level: C | (D) | E

TAT (in days): (2) | 7 | 14 | 30

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Preservation: NA	Container Nos. (2 digit)	Remarks (e.g., MS, MSD)
73W23500 (invisal)	6-12/1740	24 SVE1	SG	NO	TEDLAR		01	REG
73W2307 ML	6/10							

06-12-96

Relinquished By	Received By	Date	Time	Reason for Transfer
[signature]	Marcia A. LeBrunche	6/13/96	8:53	ANALYSES

Comments/Instructions: Soil Gas

Method of Shipment: HAND CARRY

Airbill No.: NA

Total No. of Coolers Shipped: 1

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CLEAN II

CHAIN-OF-CUSTODY RECORD

13726

Site Name: MCAS El Toro
CTO Number: 073

Sampler's Name(s): Carl J. Lind
Sampler's Signature(s): Carl J. Lind

Site Contact/Supervisor: CARL J LIND

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Parkway, Suite E-6, Laguna Hills, CA 92653
Field QC Package Number: NA
Field Logbook/Page Number: VT-73W-002 / 0030
Date: 6-13-96

Pay Items/Analyses Required: 700.5, 8010/8020

QC Level: C | (D) | E

TAT (in days): (2) | 7 | 14 | 30

Preservation: NA

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Container Nos. (2 digit)	Remarks (e.g., MS, MSD)
73W2351	6-13/1	245VE1	SOG	NO	TEDLAR	01	REG
73W2358 mc							

Relinquished By	Received By	Date	Time	Reason for Transfer
Carl J. Lind	Maria M. Francisco	6/14/96	8:25	ANALYSIS

Comments/Instructions: Soil GAS

Method of Shipment: HAND CARRY

Airbill No.: NA

Total No. of Coolers Shipped: 1

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CLEAN II

CHAIN-OF-CUSTODY RECORD

13725

Site Name: MCAS El Toro
CTO Number: 073

Sampler's Name(s): CARL J. LIND
Sampler's Signature(s): Carl J. Lind

Site Contact/Supervisor: CARL J. LIND

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Parkway, Ste E-6, Laguna Hills, CA 92653
Field QC Package Number: NA
Field Logbook/Page Number: VT-73W-002/0031
Date: 06-14-96

Pay Items/Analyses Required: 700.5 / 8010/8020

Preservation: NA

QC Level: C D E

TAT (in days): 2 7 14 30

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Container Nos. (2 digit)	Remarks (e.g., MS, MSD)
73W2352	6-14/1023	245VE1	SOG	NO	TEDLAR	01	REG/ EFFLUENT
73W2353	6-14/1210	245VE1	SOG	NO	TEDLAR	01	REG/ INFLUENT

Carl J. Lind 6-14-96

Relinquished By	Received By	Date	Time	Reason for Transfer
Carl J. Lind	Michael McCullough	6/14/96	4:10pm	Analysis

Comments/Instructions: Soil Gas

Method of Shipment: HAND CARRY

Airbill No.: NA

Total No. of Coolers Shipped: 1

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CLEAN II

CHAIN-OF-CUSTODY RECORD

13724

Site Name: MCAS El Toro
CTO Number: 073

Sampler's Name(s): Dan Eldridge
Sampler's Signature(s): Dan Eldridge

Site Contact/Supervisor: Carl Lind

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Parkway Ste K-6 Laguna Hills CA
Field QC Package Number: NA
Field Logbook/Page Number: VT-23W-001/0023
Date: 6-18-96

Pay Items/Analyses Required: 8010/8020 (Air)

QC Level: C D E

TAT (in days): 2 7 14 30

Preservation: NA

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Container Nos. (2 digit)	Remarks (e.g., MS, MSD)
23W2361	6-18-96 0826	24SVE 1	SOG	NO	Tedlar Bag	01	Rep. ~~IN~~/Effluent (per 6-18-96)

Relinquished By	Received By	Date	Time	Reason for Transfer
Dan Eldridge	Marcia DeFrancesco	6/18/96	2:45pm	Transport to lab.

Comments/Instructions:
Soil Gas
Patric Brooks (619) 687-8851

Method of Shipment: Hand carry
Airbill No.: —NA—
Total No. of Coolers Shipped: 1

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CLEAN II

CHAIN-OF-CUSTODY RECORD

12076

Site Name: MCAS EL TORO
CTO Number: 073

Sampler's Name(s): Don Eldridge
Sampler's Signature(s): Don Eldridge

Site Contact/Supervisor: Carl Lind

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Pkwy — Suite 6 Laguna Hills CA
Field QC Package Number: NA
Field Logbook/Page Number: SG-73W-010/38
Date: 6-19-96

Pay Items/Analyses Required: 8021 VOCs 7000's

QC Level: C D E

TAT (in days): 2 7 14 30

Preservation: ICE

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Container Nos. (2 digit)	Remarks (e.g., MS, MSD)
73W2362 01	1545 6-19-95	24SVE 1	SOG	NO	1 Liter Tedlar	01	Influent

Relinquished By	Received By	Date	Time	Reason for Transfer	Comments/Instructions:
Don Eldridge	Maria A Lizarcobe	6-20-96	12:25	Analyses	Pat Brooks (619) 687-8851

Method of Shipment: Hand Carry

Airbill No.: — NA —

Total No. of Coolers Shipped: 1

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CLEAN II

CHAIN-OF-CUSTODY RECORD

13723

Site Name: MCAS EL TORO
CTO Number: 073

Sampler's Name(s): Dan Eldredge
Sampler's Signature(s): Dan Eldredge

Site Contact/Supervisor: Carl Lind

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Pkwy Suite 6 Laguna Hills CA
Field QC Package Number: — NA —
Field Logbook/Page Number: VT 73 - 001/24
Date: 6-20-96

Pay Items/Analyses Required

QC Level: C | (D) | E

TAT (in days): (2) | 7 | 14 | 30

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	VOC 8021	TDOLS	Preservation: None	Remarks (e.g., MS, MSD)
						Container Nos. (2 digit)			
73W2364	1400 6-20-96	24 VES 1	SOG	NO	1 liter Tedlar	01			Influent

Relinquished By	Received By	Date	Time	Reason for Transfer
Dan Eldredge	M. Lefrancois	6/20/96	4:10	Transport to Lab

Comments/Instructions: Pat Brooks (619) 687-8851

Method of Shipment: Hand Carry

Airbill No.: — NA —

Total No. of Coolers Shipped: 1

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CLEAN II

CHAIN-OF-CUSTODY RECORD

13715

Site Name: MCAS EL TORO
CTO Number: 073

Sampler's Name(s): Dan Eldridge
Sampler's Signature(s): Dan Eldridge

Site Contact/Supervisor: Carl Lind.

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Pkwy Laguna Hills Ste #6
Field QC Package Number: -NA-
Field Logbook/Page Number: VT-7340D1/26
Date: 6-20-96

Pay Items/Analyses Required: 8021 VOC's 2005

QC Level: C D E

TAT (in days): 2 7 14 30

Preservation: None

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Container Nos. (2 digit)	Remarks (e.g., MS, MSD)
73W2365	1100 6-20-96	24SVE 1	SOG	NO	1 liter Tedlar	01	Influent

Relinquished By	Received By	Date	Time	Reason for Transfer
Dan Eldridge	Maria [illegible]	6/21/96	1300	Transport to lab

Comments/Instructions: Pat Brooks 619 687-8851

Method of Shipment: Hand Carry

Airbill No.: -NA-

Total No. of Coolers Shipped: 1

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CLEAN II

CHAIN-OF-CUSTODY RECORD

13716

Site Name: MCAS EL TORO
CTO Number: 073

Sampler's Name(s): Dan Eldredge
Sampler's Signature(s): Dan Eldredge

Site Contact/Supervisor: Carl Lind

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Pkwy, Laguna Hills CA
Field QC Package Number: -NA-
Field Logbook/Page Number: VT-73W-001/6 SG-73W-011/29
Date: 6-25-96

Pay Items/Analyses Required

QC Level: C D E

TAT (in days): 2 7 14 30

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	SD21 VOC TO15 (Container Nos. 2 digit)	SD21 VOC TO15 (Container Nos. 2 digit)	Preservation	Remarks (e.g., MS, MSD)
73W2366	6-25-96 1455	24SVE 1	SOG	NO	1 liter Tedlar	01			Influent
73W2367	6-25-96 1450	24SVE 1	SOG	NO	1 liter Tedlar	01			Effluent (Stack)

Relinquished By	Received By	Date	Time	Reason for Transfer
Dan Eldredge	Marcia A. Espinosa	6/25/96	15:30	Transport to lab

Comments/Instructions: Pat Brooks (619) 687-8851

Method of Shipment: Hand carry

Airbill No.: -NA-

Total No. of Coolers Shipped: 1

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CLEAN II

CHAIN-OF-CUSTODY RECORD

13722

Site Name: MCAS EL TORO
CTO Number: 073

Sampler's Name(s): Don Eldredge
Sampler's Signature(s): Don Eldredge

Site Contact/Supervisor: Carl Lind

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Pkwy Laguna Hills CA
Field QC Package Number: -NA-
Field Logbook/Page Number: VT 73W-001
Date: 6-28-96

Pay Items/Analyses Required: 8021 VOC's 7400

QC Level: C D E

TAT (in days): 2 7 14 30

Preservation: None

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Container Nos. (2 digit)	Remarks (e.g., MS, MSD)
73W2368	1345 6-28-96	24SVE 1	SOG	NO	1 liter Tedlar	01	Influent
73W2369	1350 6-28-96	24SVE 1	SOG	NO	1 liter Tedlar	01	Effluent

Relinquished By	Received By	Date	Time	Reason for Transfer
Don Eldredge	Marshall M Cullough	6/28/96	3:55pm	Transport to lab

Comments/Instructions: Pat Brooks 619 687 8851

Method of Shipment: Hand Carry

Airbill No.: -NA-

Total No. of Coolers Shipped:

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CLEAN II

CHAIN-OF-CUSTODY RECORD

13721

Site Name: MCAS EL TORO
CTO Number: 073

Sampler's Name(s): Don Eldridge
Sampler's Signature(s): Don Eldridge

Site Contact/Supervisor: Jaque Lord

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Pkwy, Laguna Hills CA 92653
Field QC Package Number: -NA-
Field Logbook/Page Number: SG-73W-011 / Pg 31
Date: 7-1-96

Pay Items/Analyses Required: SOIL VOC 1005

QC Level: C D E

TAT (in days): 2 7 14 30

Preservation: None

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Container Nos. (2 digit)	Remarks (e.g., MS, MSD)
73W2370	7-1-96 1315	24SVE 1	SOG	NO	1 liter Tedlar	01	Influent

Relinquished By	Received By	Date	Time	Reason for Transfer
Don Eldridge	Michael Mullaugh	7/1/96	1:58	Transport to lab

Comments/Instructions: Pat Brooks (619) 687-8851

Method of Shipment: Hand carry

Airbill No.: -NA-

Total No. of Coolers Shipped:

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CLEAN II

CHAIN-OF-CUSTODY RECORD

13717

Site Name: MCAS EL TORO	Sampler's Name(s): Dan Eldridge	Site Contact/Supervisor: Jacques Lord
CTO Number: 073	Sampler's Signature(s): [signature]	

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Pky Laguna Hills CA
Field QC Package Number: -NA-
Field Logbook/Page Number: SG-73W-011
Date:

Pay Items/Analyses Required: 8021, 2005

QC Level: C D E

TAT (in days): 2 7 14 30

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Preservation: None	Container Nos. (2 digit)	Remarks (e.g., MS, MSD)
73W2321	7-3-96 1500	24SVE 1	SOG	NO	1 Liter Tedlar		01	Influent

Relinquished By	Received By	Date	Time	Reason for Transfer	Comments/Instructions:
[signature]	[signature]	7/3/96	4:01pm	Transport to lab	Pat Brooks 619 687 8851

Method of Shipment: Hand Carry
Airbill No.: -NA-
Total No. of Coolers Shipped: 1

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7829

CLEAN II

CHAIN-OF-CUSTODY RECORD

Site Name: MCAS El Toro CA.
CTO Number: 073

Sampler's Name(s): Don Eldredge
Sampler's Signature(s): Don Eldredge

Site Contact/Supervisor: Pat Castle

Analytical Laboratory Name: EST
Analytical Laboratory Address: 23011 Moulton Pkwy. Laguna Hills CA #6
Field QC Package Number: -NA-
Field Logbook/Page Number: SG73W-011/4
Date: 7-8-96

Pay Items/Analyses Required: 8021 VOC 700.5; CO2 700.6; O2 700.6

QC Level: C | (D) | E

TAT (in days): (2) | 7 | 14 | 30

Sample ID Number (7 digit)	Date/Time Collected	Station Description	Sample Matrix	Archive	Type of Container	Preservation: None	Container Nos. (2 digit)									Remarks (e.g., MS, MSD)
73W2373	7-8-96 1406	243VE 1	SOG	NO	1 liter Tedlar		01	02	03							Influent

Relinquished By	Received By	Date	Time	Reason for Transfer
Don Eldredge	Marcia H. LiFrancois	7/10/96	15:23	Transport to Lab

Comments/Instructions: Pat Brooks (619) 687-8851

Method of Shipment: Hand Carry

Airbill No.: -NA-

Total No. of Coolers Shipped: 1

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