AC Transit
Alameda-Contra Costa Transit District

10626 East 14th Street, Oakland, California 94603 ☐ (510) 577-8804
FAX ☐ (510) 577-8859

August 24, 2000

Mr. Barney Chan
Alameda County Health Division
Division of Environmental Protection
Department of Environmental Health
1131 Harbor Bay Parkway, Second Floor
Alameda, CA 94502

Dear Mr. Chan:

Subject: Quarterly Groundwater Monitoring Report
AC Transit. 1100 Seminary Avenue, Oakland, CA

AC Transit hereby submits the enclosed quarterly groundwater monitoring report for the second quarter of 2000 for the AC Transit facility located at 1100 Seminary Avenue in Oakland. The report was prepared by our consultant, Safety-Kleen Consulting.

Groundwater samples were collected from the six on-site monitoring wells on May 25, 2000. Samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline and diesel using EPA Method 8015, benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl-tert butyl ether (MTBE) using EPA Method 8260B, iron using EPA Method 6010B and nitrate and sulfate using Standard Methods 300.0A.

Analytical results of grab water samples showed benzene concentrations above the California maximum contaminant level of 1 ppb in wells MW-1, MW-2 and MW-3 and nondetectable concentrations in wells MW-9, MW-10 and MW11. Chemical concentrations above laboratory reporting limits in the three newly installed wells MW-9, MW-10, and MW-11, were limited to unspecified hydrocarbons, except for 16 ppb MTBE detected in MW-11. Results of geochemical analyses (dissolved oxygen, oxidation reduction potential, iron, sulfate and nitrate) of samples taken from all six wells suggest that biodegradation of TPH and related compounds may be occurring.

If you have any questions regarding this report or other matters pertaining to this site, please call me at (510) 577-8869.

Sincerely,

Suzanne Patton

Suzanne Patton, P.E.
Environmental Manager

SP/sp
enclosure

00 AUG 25 PM 2:57

Barneychan2.doc

GROUNDWATER MONITORING REPORT FOR THE AC TRANSIT FACILITY LOCATED AT 1100 SEMINARY AVENUE, OAKLAND, CALIFORNIA

August 17, 2000

Prepared For:
Ms. Suzanne Patton
AC Transit
10626 E. 14th Street
Oakland, California 94603

Prepared By:
Safety-Kleen Consulting
2233 Santa Clara Avenue
Alameda, California 94501

Project No: 792588

safety-kleen

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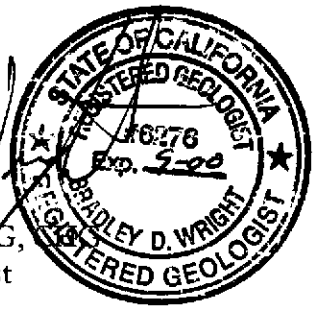
Written by
Greg Pedersen
Geologist I

Reviewed By
Brad Wright, RG,
Senior Geologist



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INTRODUCTION

This report presents the results from the May 2000 sampling event for the AC Transit Facility located at 1100 Seminary Avenue, Oakland, California (Site) (Figure 1). Groundwater sampling of monitor wells MW-1 through MW-3 and MW-9 through MW-11 was performed by Safety-Kleen Consulting, in accordance with directives by Alameda County Water District and the California Regional Water Quality Board, San Francisco Bay Region.

OBJECTIVES AND SCOPE OF WORK

Work performed during quarterly sampling included measuring depth to water and presence of free phase hydrocarbons in the monitor wells and sample collection. Field parameters collected during sampling included pH, temperature, electric conductivity, dissolved oxygen (DO) and oxygen reduction potential (ORP). Groundwater samples were collected for laboratory analysis using United States Environmental Protection Agency (USEPA) Method 8015 for total petroleum hydrocarbons (TPH) gasoline/diesel, USEPA Method 8260B for benzene, toluene, ethylbenzene, and xylene (BTEX) and methyl-tert, butyl ether (MTBE), USEPA Method 6010B for iron, and methods of chemical analysis for water and waste (MCAWW) 300.0A for nitrate and sulfate.

Chain-of-custody documents and certified analytical reports are presented in Appendix A. Field data sheets are included in Appendix B.

Groundwater Elevations and Flow Direction

Prior to purging and sample collection, all site monitor wells were inspected and measured for presence of free phase hydrocarbons and depth to groundwater. Measurements of depths to groundwater are presented on Table 1 and were used to construct the groundwater elevation contours shown in Figure 2. A free phase hydrocarbon layer was detected in MW-2 at a measured thickness of 0.12 feet. As shown on Figure 2, groundwater flow is to the west at a gradient of 0.02 feet/foot.

Groundwater Sampling Activities

The monitor wells were purged a minimum of three casing volumes, using a centrifugal pump and samples were collected using disposable polyethylene bailers. During well purging, field parameters for pH, electrical conductivity, DO, ORP and temperature were monitored using calibrated field meters. Due to the very low yield encountered while purging monitoring well MW-11, only one casing volume was evacuated before it became dry. Purge water was transferred to 55-gallon drums and placed in the Site's drum waste storage area.

Groundwater samples were transferred to appropriate laboratory supplied and preserved containers and placed in an ice-filled cooler for shipment under chain-of-custody to a State of California certified laboratory. A trip blank was submitted for analysis by USEPA Method 8260B.

Groundwater Analytical Results

Table 2 presents groundwater historic and second quarter 2000 analytical results. Concentrations of benzene above the State of California maximum contaminant level (MCL) of 1.0 part per billion (ppb) were detected in monitor wells MW-1 through MW-3. Chemical concentrations above laboratory reporting limits detected in newly installed wells MW-9 through MW-11 were limited to unspecified hydrocarbons, with the exception of 16 ppb MTBE detected in MW-11. The carbon chain range of the unspecified hydrocarbon suggest that these concentrations represent degraded diesel. No analytes were detected in the trip blanks or method blanks. A lab control spike and lab control spike duplicate passed the USEPA's criteria for acceptance.

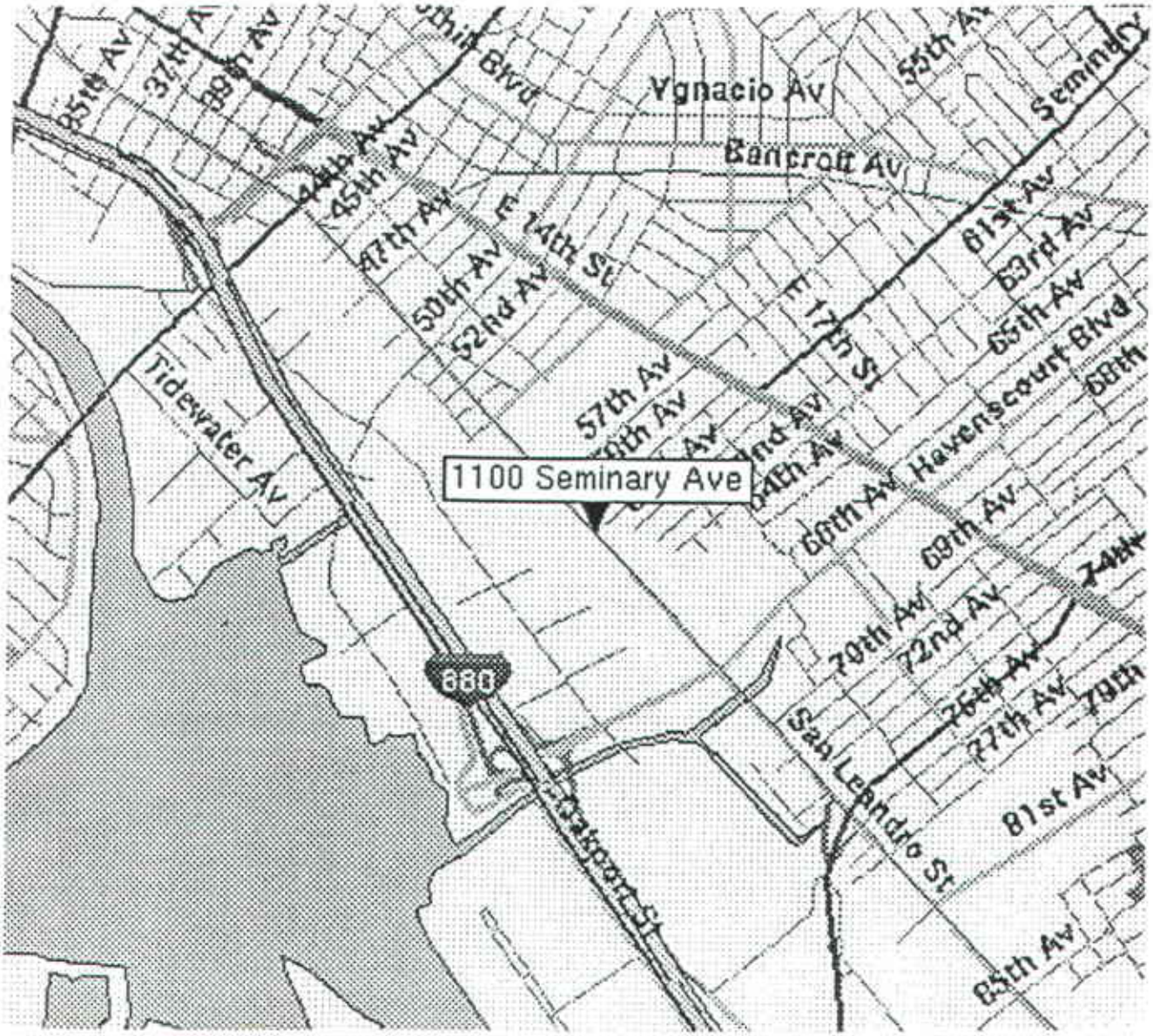
Additional geochemical analysis was performed to monitor natural attenuation and/or degradation of TPH and related compounds in groundwater. These included analysis for DO, ORP, iron, sulfate and nitrate. An evaluation of concentrations of the geochemical parameters for wells MW-1 through MW-3 and MW-9 through MW-11, suggests that biodegradation processes may be occurring. This is supported by higher sulfate and nitrate concentrations observed along the edge of contamination as compared to those detected in the interior of the affected area.

SUMMARY OF RESULTS

- A 0.12 foot free phase hydrocarbon layer was measured in monitor well MW-2.
- Groundwater flow direction is towards the west at a gradient of 0.02 feet/foot;
- Chemical concentrations of in excess of MCLs were limited to benzene in wells MW-1 through MW-3; and
- Sulfate and nitrate concentrations detected in Site monitor wells suggest that biodegradation of TPH and related compounds may be occurring.

PROJECTED WORK AND RECOMMENDATIONS

- Quarterly groundwater monitoring is scheduled for August 2000.



LOCMAP

North

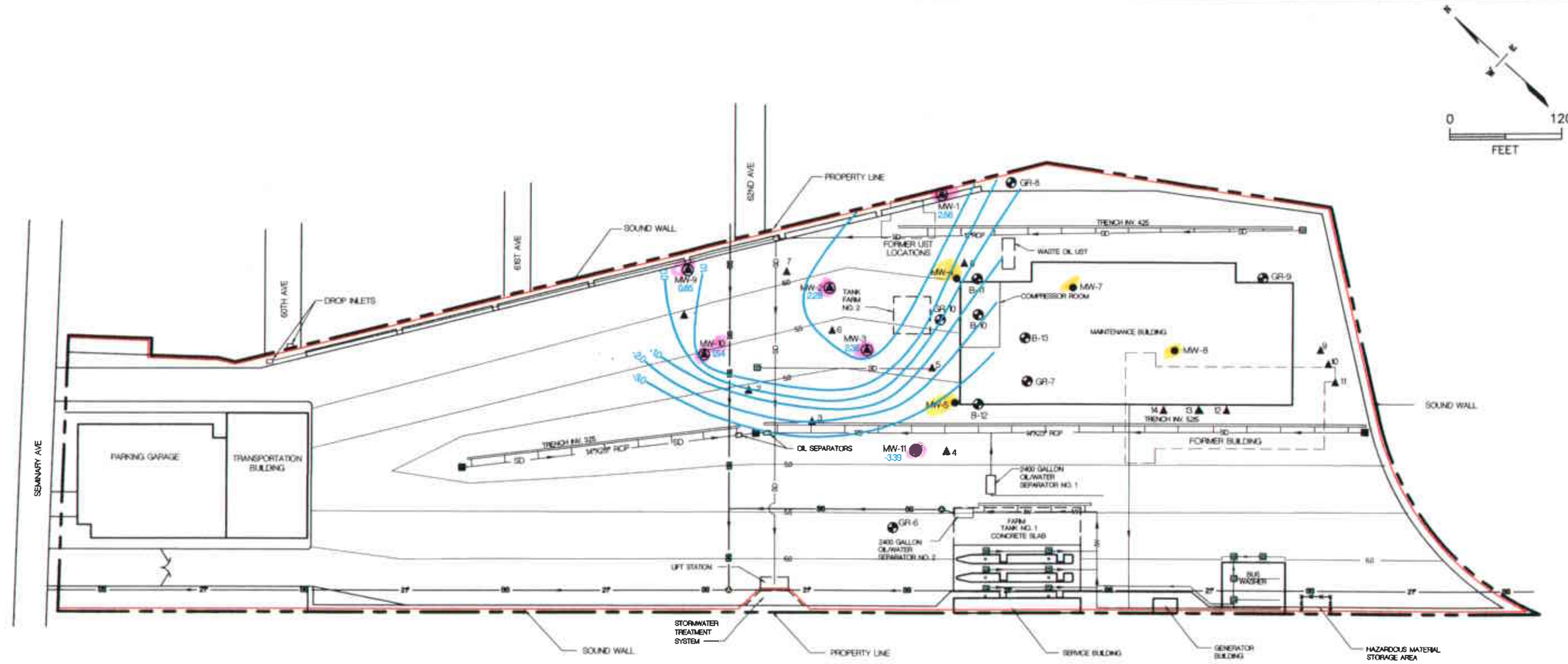
safety-kleen consulting

AC TRANSIT - OAKLAND, CALIFORNIA

FIGURE 1
SITE LOCATION MAP
1100 SEMINARY ROAD

SCALE: NO SCALE

DATE: 3/22/00



LEGEND:

GROUNDWATER ELEVATION CONTOUR	EXISTING MONITORING WELL
-10 GROUNDWATER ELEVATION (FT. MSL)	ABANDONED MONITORING WELL
6.0 CONTOUR	PREVIOUSLY INSTALLED SOIL BORING
SD STORM DRAIN PIPELINE	NEWLY INSTALLED SOIL BORING
SS SANITARY SEWER PIPELINE	MANHOLE
IW INDUSTRIAL WASTE PIPELINE	CATCH BASIN
SURFACE DRAINAGE TRENCH	

	BY	DATE
DRAWN	WRB	8-16-00
CHECKED		
APPROVED		
APPROVED		
APPROVED		

safety-kleen consulting

FIGURE 2

AC TRANSIT - OAKLAND, CALIFORNIA

1100 SEMINARY ROAD-POTENTIOMETRIC SURFACE MAP MAY 25, 2000

SCALE: 1" = 120'

DWG. NO: 792489-07

TABLE 1
GROUNDWATER LEVEL MEASUREMENTS
AC Transit Facility
1100 Seminary Avenue, Oakland, California

Well	Date	Top of Casing Elevation (ft-msl)*	Product Thickness (feet)	DTW (feet)	Measured Groundwater Elevation (ft-msl)	Groundwater Elevation Corrected for Product Thickness**
MW-1	7-Jan-99	6.25	None	5.13	1.12	
	7-Feb-00		None	3.75	2.5	
	25-May-00		**None**	**3.69**	**2.56**	
MW-2	7-Jan-99	5.53	2.27	6.91	-1.38	0.44
	8-Jun-99		2.23	5.83	-0.3	1.48
	9-Jun-99		0	3.9	1.63	1.63
	10-Jun-99		0	3.9	1.63	1.63
	15-Jun-99		0.42	3.92	1.61	1.95
	8-Jul-99		0.2	4.3	1.23	1.39
	7-Feb-00		**Sheen**	**3.8**	**1.73**	
	25-May-00		**0.12**	**3.35**	**2.18**	2.28
MW-3	7-Jan-99	4.76	None	4.11	0.65	
	7-Feb-00		None	3.1	1.66	
	25-May-00		**None**	**2.41**	**2.35**	
MW-9	7-Feb-00	5.8	None	4.37	1.43	
	25-May-00		**None**	**4.95**	**0.85**	
MW-10	7-Feb-00	4.65	None	3.19	1.46	
	25-May-00		**None**	**3.11**	**1.54**	
MW-11	**7-Feb-00**	**4.19**	**None**	**4.97**	**-0.78**	
	25-May-00		**None**	**7.58**	**-3.39**	

Notes:

* ft-msl: feet-mean sea level
** used 0.8 specific gravity of product
DTW: Depth to Water

TABLE 2
ANALYTICAL RESULTS OF GROUNDWATER SAMPLES (ppb)
AC Transit Facility
1100 Seminary Avenue, Oakland, California

Well/Boring	Date	TPH-G	TPH-D	TPH	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	Nitrate	Sulfate	DO	Fe
	MCL (ppb)				1	150	700	1,750					
MW-1	7-Jan-99	<100	470	NA	17	2	31	18	<50	150	3,400	360	53
	7-Feb-00	390	<60	1,300	13	<10	<10	<10	<20	<50	1,200	1,220	11,800
	25-May-00	**<50**	**<50**	**1,000**	**12**	**<1.0**	**<1.0**	**<1.0**	**<2.0**	**140**	**1,500**	**1,950**	**1,380**
MW-2 (Product)	8-Jun-99	11,000	434,000	117,000	1,000,000	<100,000	260,000	<300,000	<5,000,000	NA	NA	NA	NA
	7-Feb-00	51,000	160,000	<5000	19,000	<500	920	<500	<1000	51	<1000	6,660	7,300
	25-May-00	**<1200**	**<50000**	**65,000**	**11,000**	**<500**	**670**	**530**	**<1000**	**330**	**<1000**	**5,670**	**0**
MW-3	7-Jan-99	199	2,680	NA	450	<10	250	190	<500	170	3,300	880	0
	7-Feb-00	2,000	<150	3,100	26	<2	5	2	<4	<50	47,300	6,480	17,800
	25-May-00	**<50**	**<50**	**1,000**	**35**	**<1.0**	**6**	**4**	**<2.0**	**<50**	**21,700**	**4,640**	**600**
MW-9	7-Feb-00	<50	<50	240	<1	<1	<1	<1	<2	230	183,000	6,940	9,000
	25-May-00	**<50**	**<50**	**130**	**<1.0**	**<1.0**	**<1.0**	**<1.0**	**<2.0**	**250**	**172,000**	**6,020**	**1,200**
MW-10	7-Feb-00	<50	<50	470	<1	<1	<1	<1	<2	53	114,000	1,200	55,000
	25-May-00	**<50**	**<50**	**220**	**<1.0**	**<1.0**	**<1.0**	**<1.0**	**<2.0**	**480**	**136,000**	**1,940**	**0**
MW-11	7-Feb-00	<50	<50	400	<1	<1	<1	<1	25	800	167,000	7,300	16,200
	25-May-00	**<50**	**<50**	**200**	**<1.0**	**<1.0**	**<1.0**	**<1.0**	**16**	**480**	**207,000**	**6,540**	**0**

Notes:
ppb: parts per billion
TPH-G: total petroleum hydrocarbons as gasoline
TPH-D: total petroleum hydrocarbons as diesel
TPH: total petroleum hydrocarbons as motor oil or unknow hydrocarbon
MCL: Maximum Contaminant Level
MTBE: Methyl-tert,butylether
DO: Dissolved Oxygen
Fe: Ferrous Iron

APPENDIX A

CERTIFIED ANALYTICAL REPORTS

CHAIN-OF-CUSTODY DOCUMENTS

Quanterra
880 Riverside Parkway
West Sacramento, California 95605-1500

916 373-5600 Telephone
916 372-1059 Fax
www.quanterra.com

June 29, 2000

QUANTERRA INCORPORATED PROJECT NUMBER: G0E260150

Brad Wright
Safety Kleen Consulting
2233 Santa Clara Ave
Suite 7
Alameda, CA 94501

Dear Mr. Wright,

This report contains the analytical results for the samples received under chain of custody by Quanterra Incorporated on 5/26/00. These samples are associated with your AC Transit Seminary project.

The case narrative is an integral part of this report.

Preliminary results were sent via facsimile on June 29, 2000.

If you have any questions, please feel free to call me at (916)374-4414.

Sincerely,

Bonnie J. McNeill
Project Manager

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QUANTERRA INCORPORATED PROJECT NUMBER G0E260150

CASE NARRATIVE

QUANTERRA INCORPORATED PROJECT NUMBER G0E260150

General Comments

Samples were received at 16 degrees Centigrade.

WATER, 8015 MOD, TEPH

The recoveries for the surrogate in the method and diesel in the LCS/LCSD were below the QC limit. The batch was re-extracted and the LCS/LCSD recoveries for diesel were still below the QC limits. There was no sample left for a second re-extraction. Surrogate recoveries were within limits for all samples in both extractions. This demonstrates acceptable extraction efficiency in the samples.

There were no other anomalies associated with this project.

Quanterra - Western Region

Quality Control Definitions

QC Parameter	Definition
QC Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Duplicate Control Sample (DCS)	Consist of a pair of LCSs analyzed within the same QC batch to monitor precision and accuracy independent of sample matrix effects. This QC is performed only if required by client or when insufficient sample is available to perform MS/MSD.
Duplicate Sample (DU)	A second aliquot of an environmental sample, taken from the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative of the precision for other samples in the batch.
Laboratory Control Sample (LCS)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. An LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried through the entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank (MB)	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate Spike	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.

Source: Quanterra® Quality Control Program, Policy QA-003, Rev. 0, 8/19/96.

Sample Summary
G0E260150

WO#	Sample #	Client Sample ID	Sampling Date	Received Date
DDRP1	1	MW-1	5/25/00 10:15 AM	5/25/00 06:20 PM
DDRP5	2	MW-3	5/25/00 11:30 AM	5/25/00 06:20 PM
DDRP7	3	MW-10	5/25/00 12:30 AM	5/25/00 06:20 PM
DDRP9	4	MW-11	5/25/00 12:50 AM	5/25/00 06:20 PM
DDRPA	5	MW-9	5/25/00 01:45 PM	5/25/00 06:20 PM
DDRPC	6	MW-2	5/25/00 02:50 PM	5/25/00 06:20 PM
DDRPH	7	TRIP BLANK	5/25/00	5/25/00 06:20 PM

Notes(s):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must no be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity, pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weigh

Chain of Custody Record

Quanterra

QUA-4124 0797

Client: Safety-Kleen	Project Manager: Brad Wright	Date: 5-25-00	Chain of Custody Number: 31394
Address: 2233 Santa Clara	Telephone Number (Area Code)/Fax Number: 510-337-8660	Lab Number:	Page 1 of 1
City: Alameda / State: Ca / Zip Code: 94501	Site Contact:	Lab Contact:	
Project Name: AC Transit Seminary	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Matrix: Sed.	Matrix: Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: Nitrate/Sulfate	Analysis: 8260 BTEX/MTBE	Analysis: G&O 8015	Analysis: D&O 8015
MW-1	5-25-00	10:15	X									X	X	X	X
MW-3		11:30	X									X	X	X	X
MW-10		12:30	X									X	X	X	X
MW-11		12:50	X									X	X	X	X
MW-9		13:45	X									X	X	X	X
MW-2		14:50	X									X	X	X	X
Trip Blank													X		

Special Instructions/ Conditions of Receipt: good

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other_____

QC Requirements (Specify)

1. Relinquished By: Greg Peters	Date: 5-25-00	Time: 1600	1. Received By: Courier	Date: 5-25-00	Time: 1600
2. Relinquished By:	Date:	Time:	2. Received By: Cynthia	Date: 5-25-00	Time: 2100
3. Relinquished By:	Date:	Time:	3. Received By:	Date:	Time:

Comments:

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

WATER, CA LUFT, TVPH (*Gas*)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-1

GC Volatiles

Lot-Sample #...: G0E260150-001	**Work Order #...:** DDRP1104	**Matrix.....:** WATER	
Date Sampled...: 05/25/00	**Date Received..:** 05/25/00		
Prep Date.....: 06/07/00	**Analysis Date..:** 06/08/00		
Prep Batch #...: 0166356			
Dilution Factor: 1	**Method.....:** DHS CA LUFT		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Gasoline)	ND	50	ug/L
Unknown Hydrocarbon	**210**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	113	(70 - 130)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-3

GC Volatiles

Lot-Sample #...: G0E260150-002	**Work Order #...:** DDRP5104	**Matrix.....:** WATER	
Date Sampled...: 05/25/00	**Date Received..:** 05/25/00		
Prep Date.....: 06/07/00	**Analysis Date..:** 06/08/00		
Prep Batch #...: 0166356			
Dilution Factor: 1	**Method.....:** DHS CA LUFT		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Gasoline)	ND	50	ug/L
Unknown Hydrocarbon	**1400**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	122	(70 - 130)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-10

GC Volatiles

Lot-Sample #...: G0E260150-003 Work Order #...: DDRP7104 Matrix.....: WATER
Date Sampled...: 05/25/00 Date Received..: 05/25/00
Prep Date.....: 06/07/00 Analysis Date..: 06/08/00
Prep Batch #...: 0166356
Dilution Factor: 1 Method.....: DHS CA LUFT

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Gasoline)	ND	50	ug/L
Unknown Hydrocarbon	ND	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	102	(70 - 130)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-11

GC Volatiles

Lot-Sample #...: G0E260150-004 Work Order #...: DDRP9104 Matrix.....: WATER
Date Sampled...: 05/25/00 Date Received..: 05/25/00
Prep Date.....: 06/07/00 Analysis Date..: 06/08/00
Prep Batch #...: 0166356
Dilution Factor: 1 Method.....: DHS CA LUFT

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Gasoline)	ND	50	ug/L
Unknown Hydrocarbon	ND	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	98	(70 - 130)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-9

GC Volatiles

Lot-Sample #...: G0E260150-005 **Work Order #...:** DDRPA104 **Matrix.....:** WATER
Date Sampled...: 05/25/00 **Date Received..:** 05/25/00
Prep Date.....: 06/07/00 **Analysis Date..:** 06/08/00
Prep Batch #...: 0166356
Dilution Factor: 1 **Method.....:** DHS CA LUFT

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Gasoline)	ND	50	ug/L
Unknown Hydrocarbon	ND	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	94	(70 - 130)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-2

GC Volatiles

Lot-Sample #...: G0E260150-006	**Work Order #...:** DDRPC104	**Matrix.....:** WATER	
Date Sampled...: 05/25/00	**Date Received..:** 05/25/00		
Prep Date.....: 06/07/00	**Analysis Date..:** 06/08/00		
Prep Batch #...: 0166356			
Dilution Factor: 25	**Method.....:** DHS CA LUFT		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Gasoline)	ND	1200	ug/L
Unknown Hydrocarbon	**34000**	**1200**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	110	(70 - 130)

QC DATA ASSOCIATION SUMMARY

G0E260150

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	DHS CA LUFT		0166356	
002	WATER	DHS CA LUFT		0166356	
003	WATER	DHS CA LUFT		0166356	
004	WATER	DHS CA LUFT		0166356	
005	WATER	DHS CA LUFT		0166356	
006	WATER	DHS CA LUFT		0166356	

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: G0E260150 **Work Order #...:** DEN2J101 **Matrix.....:** WATER
MB Lot-Sample #: G0F140000-356

Prep Date.....: 06/07/00
Analysis Date..: 06/07/00 **Prep Batch #...:** 0166356
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
TPH (as Gasoline)	ND	50	ug/L	DHS CA LUFT
Unknown Hydrocarbon	ND	50	ug/L	DHS CA LUFT

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	100	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: G0E260150 **Work Order #...:** DEN2J102-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G0F140000-356 DEN2J103-LCSD
Prep Date.....: 06/07/00 **Analysis Date..:** 06/07/00
Prep Batch #...: 0166356
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
TPH (as Gasoline)	**1000**	**1060**	**ug/L**	**106**		**DHS CA LUFT**
	1000	**903**	**ug/L**	**90**	**16**	**DHS CA LUFT**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	119	(70 - 130)
	121	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: G0E260150 **Work Order #...:** DEN2J102-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G0F140000-356 DEN2J103-LCSD
Prep Date.....: 06/07/00 **Analysis Date..:** 06/07/00
Prep Batch #...: 0166356
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
TPH (as Gasoline)	**106**	**(70 - 130)**			**DHS CA LUFT**
	90	**(70 - 130)**	**16**	**(0-35)**	**DHS CA LUFT**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	119	(70 - 130)
	121	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

WATER, 8260B, BTEX + MTBE

SAFETY KLEEN CONSULTING

Client Sample ID: MW-1

GC/MS Volatiles

Lot-Sample #...: G0E260150-001 **Work Order #...:** DDRP1105 **Matrix.....:** WATER
Date Sampled...: 05/25/00 **Date Received..:** 05/25/00
Prep Date.....: 06/05/00 **Analysis Date..:** 06/05/00
Prep Batch #...: 0159321
Dilution Factor: 1 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	**12**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	109	(70 - 130)
1,2-Dichloroethane-d4	111	(70 - 130)
Toluene-d8	110	(70 - 130)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-3

GC/MS Volatiles

Lot-Sample #...: G0E260150-002 **Work Order #...:** DDRP5105 **Matrix.....:** WATER
Date Sampled...: 05/25/00 **Date Received..:** 05/25/00
Prep Date.....: 06/05/00 **Analysis Date..:** 06/05/00
Prep Batch #...: 0159321
Dilution Factor: 1 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	**35**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
Ethylbenzene	**6.2**	**1.0**	**ug/L**
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L
Xylenes (total)	**3.5**	**1.0**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	112	(70 - 130)
1,2-Dichloroethane-d4	106	(70 - 130)
Toluene-d8	112	(70 - 130)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-10

GC/MS Volatiles

Lot-Sample #...: G0E260150-003 **Work Order #...:** DDRP7105 **Matrix.....:** WATER
Date Sampled...: 05/25/00 **Date Received..:** 05/25/00
Prep Date.....: 06/05/00 **Analysis Date..:** 06/05/00
Prep Batch #...: 0159321
Dilution Factor: 1 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	108	(70 - 130)
1,2-Dichloroethane-d4	115	(70 - 130)
Toluene-d8	106	(70 - 130)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-11

GC/MS Volatiles

Lot-Sample #...: G0E260150-004 **Work Order #...:** DDRP9105 **Matrix.....:** WATER
Date Sampled...: 05/25/00 **Date Received..:** 05/25/00
Prep Date.....: 06/05/00 **Analysis Date..:** 06/05/00
Prep Batch #...: 0159321
Dilution Factor: 1 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Methyl tert-butyl ether (MTBE)	**16**	**2.0**	**ug/L**
Xylenes (total)	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	105	(70 - 130)
1,2-Dichloroethane-d4	114	(70 - 130)
Toluene-d8	107	(70 - 130)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-9

GC/MS Volatiles

Lot-Sample #...: G0E260150-005 **Work Order #...:** DDRPA105 **Matrix.....:** WATER
Date Sampled...: 05/25/00 **Date Received..:** 05/25/00
Prep Date.....: 06/05/00 **Analysis Date..:** 06/05/00
Prep Batch #...: 0159321
Dilution Factor: 1 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	106	(70 - 130)
1,2-Dichloroethane-d4	113	(70 - 130)
Toluene-d8	110	(70 - 130)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-2

GC/MS Volatiles

Lot-Sample #...: G0E260150-006	**Work Order #...:** DDRPC105	**Matrix.....:** WATER
Date Sampled...: 05/25/00	**Date Received..:** 05/25/00	
Prep Date.....: 06/08/00	**Analysis Date..:** 06/08/00	
Prep Batch #...: 0160468		
Dilution Factor: 500	**Method.....:** SW846 8260B	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	**11000 Q**	**500**	**ug/L**
Toluene	ND	500	ug/L
Ethylbenzene	**670**	**500**	**ug/L**
Methyl tert-butyl ether (MTBE)	ND	1000	ug/L
Xylenes (total)	**530**	**500**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	100	(70 - 130)
1,2-Dichloroethane-d4	95	(70 - 130)
Toluene-d8	99	(70 - 130)

NOTE(S):

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

SAFETY KLEEN CONSULTING

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: G0E260150-007 **Work Order #...:** DDRPH101 **Matrix.....:** WATER
Date Sampled...: 05/25/00 **Date Received..:** 05/25/00
Prep Date.....: 06/05/00 **Analysis Date..:** 06/05/00
Prep Batch #...: 0159321
Dilution Factor: 1 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	107	(70 - 130)
1,2-Dichloroethane-d4	111	(70 - 130)
Toluene-d8	104	(70 - 130)

QC DATA ASSOCIATION SUMMARY

G0E260150

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	SW846 8260B		0159321	
002	WATER	SW846 8260B		0159321	
003	WATER	SW846 8260B		0159321	
004	WATER	SW846 8260B		0159321	
005	WATER	SW846 8260B		0159321	
006	WATER	SW846 8260B		0160468	
007	WATER	SW846 8260B		0159321	

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: G0E260150 **Work Order #...:** DEA18101 **Matrix.....:** WATER
MB Lot-Sample #: G0F070000-321

Prep Date.....: 06/05/00
Analysis Date..: 06/05/00 **Prep Batch #...:** 0159321
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Chloromethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
Acetone	ND	2.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
Vinyl acetate	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone (MIBK)	ND	2.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
2-Butanone (MEK)	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: G0E260150 **Work Order #...:** DEA18101 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	109	(70 - 130)
1,2-Dichloroethane-d4	111	(70 - 130)
Toluene-d8	107	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: G0E260150 **Work Order #...:** DEEHE101 **Matrix.....:** WATER
MB Lot-Sample #: G0F080000-468

Prep Date.....: 06/08/00
Analysis Date..: 06/08/00 **Prep Batch #...:** 0160468
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	97	(70 - 130)
1,2-Dichloroethane-d4	94	(70 - 130)
Toluene-d8	101	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: G0E260150 **Work Order #...:** DEA18102-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G0F070000-321 DEA18103-LCSD
Prep Date.....: 06/05/00 **Analysis Date..:** 06/05/00
Prep Batch #...: 0159321
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethene	**10.0**	**10.4**	**ug/L**	**104**		**SW846 8260B**
	10.0	**11.6**	**ug/L**	**116**	**11**	**SW846 8260B**
Benzene	**10.0**	**10.0**	**ug/L**	**100**		**SW846 8260B**
	10.0	**10.9**	**ug/L**	**109**	**8.2**	**SW846 8260B**
Trichloroethene	**10.0**	**9.82**	**ug/L**	**98**		**SW846 8260B**
	10.0	**10.8**	**ug/L**	**108**	**9.9**	**SW846 8260B**
Toluene	**10.0**	**10.1**	**ug/L**	**101**		**SW846 8260B**
	10.0	**11.0**	**ug/L**	**110**	**8.3**	**SW846 8260B**
Chlorobenzene	**10.0**	**10.3**	**ug/L**	**103**		**SW846 8260B**
	10.0	**11.1**	**ug/L**	**111**	**7.6**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	102	(70 - 130)
	108	(70 - 130)
1,2-Dichloroethane-d4	99	(70 - 130)
	112	(70 - 130)
Toluene-d8	101	(70 - 130)
	106	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: G0E260150 **Work Order #...:** DEA18102-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G0F070000-321 DEA18103-LCSD
Prep Date.....: 06/05/00 **Analysis Date..:** 06/05/00
Prep Batch #...: 0159321
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	**104**	**(70 - 130)**			**SW846 8260B**
	116	**(70 - 130)**	**11**	**(0-35)**	**SW846 8260B**
Benzene	**100**	**(70 - 130)**			**SW846 8260B**
	109	**(70 - 130)**	**8.2**	**(0-35)**	**SW846 8260B**
Trichloroethene	**98**	**(70 - 130)**			**SW846 8260B**
	108	**(70 - 130)**	**9.9**	**(0-35)**	**SW846 8260B**
Toluene	**101**	**(70 - 130)**			**SW846 8260B**
	110	**(70 - 130)**	**8.3**	**(0-35)**	**SW846 8260B**
Chlorobenzene	**103**	**(70 - 130)**			**SW846 8260B**
	111	**(70 - 130)**	**7.6**	**(0-35)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	102	(70 - 130)
	108	(70 - 130)
1,2-Dichloroethane-d4	99	(70 - 130)
	112	(70 - 130)
Toluene-d8	101	(70 - 130)
	106	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: G0E260150 **Work Order #...:** DEEHE102-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G0F080000-468 DEEHE103-LCSD
Prep Date.....: 06/08/00 **Analysis Date..:** 06/08/00
Prep Batch #...: 0160468
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**10.0**	**11.2**	**ug/L**	**112**		**SW846 8260B**
	10.0	**10.5**	**ug/L**	**105**	**6.4**	**SW846 8260B**
Toluene	**10.0**	**11.1**	**ug/L**	**111**		**SW846 8260B**
	10.0	**10.7**	**ug/L**	**107**	**3.6**	**SW846 8260B**
Chlorobenzene	**10.0**	**11.5**	**ug/L**	**115**		**SW846 8260B**
	10.0	**10.6**	**ug/L**	**106**	**8.0**	**SW846 8260B**
1,1-Dichloroethene	**10.0**	**11.6**	**ug/L**	**116**		**SW846 8260B**
	10.0	**11.1**	**ug/L**	**111**	**4.0**	**SW846 8260B**
Trichloroethene	**10.0**	**11.0**	**ug/L**	**110**		**SW846 8260B**
	10.0	**10.4**	**ug/L**	**104**	**6.2**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	100	(70 - 130)
	101	(70 - 130)
1,2-Dichloroethane-d4	95	(70 - 130)
	97	(70 - 130)
Toluene-d8	97	(70 - 130)
	98	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: G0E260150 **Work Order #...:** DEEHE102-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G0F080000-468 DEEHE103-LCSD
Prep Date.....: 06/08/00 **Analysis Date..:** 06/08/00
Prep Batch #...: 0160468
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**112**	**(70 - 130)**			**SW846 8260B**
	105	**(70 - 130)**	**6.4**	**(0-35)**	**SW846 8260B**
Toluene	**111**	**(70 - 130)**			**SW846 8260B**
	107	**(70 - 130)**	**3.6**	**(0-35)**	**SW846 8260B**
Chlorobenzene	**115**	**(70 - 130)**			**SW846 8260B**
	106	**(70 - 130)**	**8.0**	**(0-35)**	**SW846 8260B**
1,1-Dichloroethene	**116**	**(70 - 130)**			**SW846 8260B**
	111	**(70 - 130)**	**4.0**	**(0-35)**	**SW846 8260B**
Trichloroethene	**110**	**(70 - 130)**			**SW846 8260B**
	104	**(70 - 130)**	**6.2**	**(0-35)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	100	(70 - 130)
	101	(70 - 130)
1,2-Dichloroethane-d4	95	(70 - 130)
	97	(70 - 130)
Toluene-d8	97	(70 - 130)
	98	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

WATER, 8015 MOD, TEPH

SAFETY KLEEN CONSULTING

Client Sample ID: MW-1

GC Semivolatiles

Lot-Sample #...: G0E260150-001	**Work Order #...:** DDRP1103	**Matrix.....:** WATER	
Date Sampled...: 05/25/00	**Date Received..:** 05/25/00		
Prep Date.....: 05/31/00	**Analysis Date..:** 06/09/00		
Prep Batch #...: 0152442			
Dilution Factor: 1	**Method.....:** SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	**880**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	108	(66 - 136)

NOTE(S):

The unknown from n-C8 to n-C40 is quantitated based on a diesel reference from n-C 10 to n-C24.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-1

GC Semivolatiles

Lot-Sample #...: G0E260150-001	**Work Order #...:** DDRP1203	**Matrix.....:** WATER	
Date Sampled...: 05/25/00	**Date Received..:** 05/25/00		
Prep Date.....: 06/13/00	**Analysis Date..:** 06/22/00		
Prep Batch #...: 0165436			
Dilution Factor: 1	**Method.....:** SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	**1000**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	131	(66 - 136)

NOTE(S):

The unknown from n-C8 to n-C40 is quantitated based on a diesel reference from n-C10 to n-C24.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-3

GC Semivolatiles

Lot-Sample #...: G0E260150-002	Work Order #...: DDRP5103	Matrix.....: WATER	
Date Sampled...: 05/25/00	Date Received..: 05/25/00		
Prep Date.....: 05/31/00	Analysis Date..: 06/09/00		
Prep Batch #...: 0152442			
Dilution Factor: 1	Method.....: SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	690	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	66	(66 - 136)

NOTE(S):

The unknown from n-C8 to n-C40 is quantitated based on a diesel reference from n-C10 to n-C24.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-3

GC Semivolatiles

Lot-Sample #...: G0E260150-002	Work Order #...: DDRP5203	Matrix.....: WATER	
Date Sampled...: 05/25/00	Date Received..: 05/25/00		
Prep Date.....: 06/13/00	Analysis Date..: 06/22/00		
Prep Batch #...: 0165436			
Dilution Factor: 1	Method.....: SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	**720**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	107	(66 - 136)

NOTE(S):

The unknown from n-C8 to n-C40 is quantitated based on a diesel reference from n-C10 to n-C24.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-10

GC Semivolatiles

Lot-Sample #...: G0E260150-003	Work Order #...: DDRP7103	Matrix.....: WATER	
Date Sampled...: 05/25/00	Date Received..: 05/25/00		
Prep Date.....: 05/31/00	Analysis Date..: 06/13/00		
Prep Batch #...: 0152442			
Dilution Factor: 1	Method.....: SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	**96**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	69	(66 - 136)

NOTE(S):

The unknown from n-C9 to n-C40 is quantitated based on a diesel reference from n-C10 to n-C24.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-10

GC Semivolatiles

Lot-Sample #...: G0E260150-003	Work Order #...: DDRP7203	Matrix.....: WATER	
Date Sampled...: 05/25/00	Date Received..: 05/25/00		
Prep Date.....: 06/13/00	Analysis Date..: 06/22/00		
Prep Batch #...: 0165436			
Dilution Factor: 1	Method.....: SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	**220**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	71	(66 - 136)

NOTE(S):

The unknown from n-C9 to n-C40 is quantitated based on a diesel reference from n-C10 to n-C24.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-11

GC Semivolatiles

Lot-Sample #...:	G0E260150-004	**Work Order #...:**	DDRP9103	**Matrix.....:**	WATER
Date Sampled...:	05/25/00	**Date Received..:**	05/25/00		
Prep Date.....:	05/31/00	**Analysis Date..:**	06/10/00		
Prep Batch #...:	0152442				
Dilution Factor:	1	**Method.....:**	SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	**180**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	72	(66 - 136)

NOTE(S):

The unknown from n-C10 to n-C40 is quantitated based on a diesel reference from n-C10 to n-C24.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-11

GC Semivolatiles

Lot-Sample #...: G0E260150-004	Work Order #...: DDRP9203	Matrix.....: WATER
Date Sampled...: 05/25/00	Date Received..: 05/25/00	
Prep Date.....: 06/13/00	Analysis Date..: 06/22/00	
Prep Batch #...: 0165436		
Dilution Factor: 1	Method.....: SW846 8015 MOD	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	200	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	81	(66 - 136)

NOTE(S):

The unknown from n-C8 to n-C40 is quantitated based on a diesel reference from n-C10 to n-C24.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-9

GC Semivolatiles

Lot-Sample #...: G0E260150-005	Work Order #...: DDRPA103	Matrix.....: WATER
Date Sampled...: 05/25/00	Date Received..: 05/25/00	
Prep Date.....: 05/31/00	Analysis Date..: 06/09/00	
Prep Batch #...: 0152442		
Dilution Factor: 1	Method.....: SW846 8015 MOD	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	**96**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	67	(66 - 136)

NOTE(S):

The unknown from n-C14 to n-C30 is quantitated based on a diesel reference from n-C10 to n-C24.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-9

GC Semivolatiles

Lot-Sample #...: G0E260150-005	Work Order #...: DDRPA203	Matrix.....: WATER	
Date Sampled...: 05/25/00	Date Received..: 05/25/00		
Prep Date.....: 06/13/00	Analysis Date..: 06/22/00		
Prep Batch #...: 0165436			
Dilution Factor: 1	Method.....: SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	**130**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	90	(66 - 136)

NOTE(S):

The unknown from n-C10 to n-C24 is quantitated based on a diesel reference from n-C10 to n-C24.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-2

GC Semivolatiles

Lot-Sample #...: G0E260150-006 Work Order #...: DDRPC103 Matrix.....: WATER
Date Sampled...: 05/25/00 Date Received..: 05/25/00
Prep Date.....: 05/31/00 Analysis Date..: 06/09/00
Prep Batch #...: 0152442
Dilution Factor: 1000 Method.....: SW846 8015 MOD

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50000	ug/L
Unknown Hydrocarbon	**65000**	**50000**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	0.0 SRD	(66 - 136)

NOTE(S):

SRD The surrogate recovery was not calculated because the extract was diluted beyond the ability to quantitate a recovery.

Elevated reporting limits. The reporting limits are elevated due to matrix interference.

The unknown from n-C10 to n-C24 is quantitated based on a diesel reference from n-C10 to n-C24.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-2

GC Semivolatiles

Lot-Sample #...: G0E260150-006	**Work Order #...:** DDRPC203	**Matrix.....:** WATER
Date Sampled...: 05/25/00	**Date Received..:** 05/25/00	
Prep Date.....: 06/13/00	**Analysis Date..:** 06/22/00	
Prep Batch #...: 0165436		
Dilution Factor: 500	**Method.....:** SW846 8015 MOD	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	25000	ug/L
Unknown Hydrocarbon	**58000**	**25000**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	0.0 SRD	(66 - 136)

NOTE(S):

SRD The surrogate recovery was not calculated because the extract was diluted beyond the ability to quantitate a recovery.

Elevated reporting limits. The reporting limits are elevated due to matrix interference.

The unknown from n-C10 to n-C24 is quantitated based on a diesel reference from n-C10 to n-C24.

QC DATA ASSOCIATION SUMMARY

G0E260150

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	SW846 8015 MOD		0152442	
	WATER	SW846 8015 MOD		0165436	
002	WATER	SW846 8015 MOD		0152442	
	WATER	SW846 8015 MOD		0165436	
003	WATER	SW846 8015 MOD		0152442	
	WATER	SW846 8015 MOD		0165436	
004	WATER	SW846 8015 MOD		0152442	
	WATER	SW846 8015 MOD		0165436	
005	WATER	SW846 8015 MOD		0152442	
	WATER	SW846 8015 MOD		0165436	
006	WATER	SW846 8015 MOD		0152442	
	WATER	SW846 8015 MOD		0165436	

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: G0E260150 **Work Order #...:** DELN6101 **Matrix.....:** WATER
MB Lot-Sample #: G0P130000-436

Prep Date.....: 06/13/00
Analysis Date..: 06/24/00 **Prep Batch #...:** 0165436
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
TPH (as Diesel)	ND	50	ug/L	SW846 8015 MOD
Unknown Hydrocarbon	ND	50	ug/L	SW846 8015 MOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	67	(66 - 136)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: G0E260150 **Work Order #...:** DE15T101 **Matrix.....:** WATER
MB Lot-Sample #: G0E310000-442

Prep Date.....: 05/31/00
Analysis Date..: 06/09/00 **Prep Batch #...:** 0152442
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
TPH (as Diesel)	ND	50	ug/L	SW846 8015 MOD
Unknown Hydrocarbon	ND	50	ug/L	SW846 8015 MOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	61 *	(66 - 136)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

* Surrogate recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: G0E260150 **Work Order #...:** DELN6102-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G0F130000-436 DELN6103-LCSD
Prep Date.....: 06/13/00 **Analysis Date..:** 06/22/00
Prep Batch #...: 0165436
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
TPH (as Diesel)	**300**	**120 a**	**ug/L**	**40**		**SW846 8015 MOD**
	300	**140 a**	**ug/L**	**47**	**16**	**SW846 8015 MOD**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	77	(66 - 136)
	83	(66 - 136)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: G0E260150 **Work Order #...:** DE15T102-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G0E310000-442 DE15T103-LCSD
Prep Date.....: 05/31/00 **Analysis Date..:** 06/09/00
Prep Batch #...: 0152442
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
TPH (as Diesel)	**300**	**133 a**	**ug/L**	**44**		**SW846 8015 MOD**
	300	**138 a**	**ug/L**	**46**	**3.5**	**SW846 8015 MOD**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	75	(66 - 136)
	82	(66 - 136)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: G0E260150 **Work Order #...:** DELN6102-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G0F130000-436 DELN6103-LCSD
Prep Date.....: 06/13/00 **Analysis Date..:** 06/22/00
Prep Batch #...: 0165436
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
TPH (as Diesel)	**40 a**	**(50 - 129)**			**SW846 8015 MOD**
	47 a	**(50 - 129)**	**16**	**(0-23)**	**SW846 8015 MOD**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	77	(66 - 136)
	83	(66 - 136)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: G0E260150 **Work Order #...:** DE15T102-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G0E310000-442 DE15T103-LCSD
Prep Date.....: 05/31/00 **Analysis Date..:** 06/09/00
Prep Batch #...: 0152442
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
TPH (as Diesel)	**44 a**	**(50 - 129)**			**SW846 8015 MOD**
	46 a	**(50 - 129)**	**3.5**	**(0-23)**	**SW846 8015 MOD**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	75	(66 - 136)
	82	(66 - 136)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

General Chemistry - Various Methods

SAFETY KLEEN CONSULTING

Client Sample ID: MW-1

General Chemistry

Lot-Sample #...: G0E260150-001 Work Order #...: DDRP1 Matrix.....: WATER
Date Sampled...: 05/25/00 Date Received..: 05/25/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	0.14	0.050	mg/L	MCAWW 300.0A	05/26/00	0151362
	Dilution Factor: 1					
Sulfate	1.5	1.0	mg/L	MCAWW 300.0A	05/26/00	0151365
	Dilution Factor: 1					

SAFETY KLEEN CONSULTING

Client Sample ID: MW-3

General Chemistry

Lot-Sample #...: G0E260150-002 Work Order #...: DDRP5 Matrix.....: WATER
Date Sampled...: 05/25/00 Date Received..: 05/25/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	ND	0.050	mg/L	MCAWW 300.0A	05/26/00	0151362
		Dilution Factor: 1				
Sulfate	21.7	1.0	mg/L	MCAWW 300.0A	05/26/00	0151365
		Dilution Factor: 1				

SAFETY KLEEN CONSULTING

Client Sample ID: MW-10

General Chemistry

Lot-Sample #...: G0E260150-003 Work Order #...: DDRP7 Matrix.....: WATER
Date Sampled...: 05/25/00 Date Received..: 05/25/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	0.48	0.050	mg/L	MCAWW 300.0A	05/26/00	0151362
		Dilution Factor: 1				
Sulfate	136 Q	20.0	mg/L	MCAWW 300.0A	05/26/00	0151365
		Dilution Factor: 20				

NOTE(S):

RL Reporting Limit

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-11

General Chemistry

Lot-Sample #...: G0E260150-004 Work Order #...: DDRP9 Matrix.....: WATER
Date Sampled...: 05/25/00 Date Received..: 05/25/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	0.48	0.050	mg/L	MCAWW 300.0A	05/26/00	0151362
		Dilution Factor: 1				
Sulfate	207 Q	20.0	mg/L	MCAWW 300.0A	05/26/00	0151365
		Dilution Factor: 20				

NOTE(S):

RL Reporting Limit

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-9

General Chemistry

Lot-Sample #...: G0E260150-005 Work Order #...: DDRPA Matrix.....: WATER
Date Sampled...: 05/25/00 Date Received..: 05/25/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	0.25	0.050	mg/L	MCAWW 300.0A	05/26/00	0151362
		Dilution Factor: 1				
Sulfate	172 Q	20.0	mg/L	MCAWW 300.0A	05/26/00	0151365
		Dilution Factor: 20				

NOTE(S):

RL Reporting Limit

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-2

General Chemistry

Lot-Sample #...: G0E260150-006 **Work Order #...:** DDRPC **Matrix.....:** WATER
Date Sampled...: 05/25/00 **Date Received..:** 05/25/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	**0.33**	**0.050**	**mg/L**	**MCAWW 300.0A**	**05/26/00**	**0151362**
		Dilution Factor: 1				
Sulfate	ND	1.0	mg/L	MCAWW 300.0A	05/26/00	0151365
		Dilution Factor: 1				

QC DATA ASSOCIATION SUMMARY

G0E260150

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	MCAWW 300.0A		0151365	0151117
	WATER	MCAWW 300.0A		0151362	0151115
002	WATER	MCAWW 300.0A		0151365	0151117
	WATER	MCAWW 300.0A		0151362	0151115
003	WATER	MCAWW 300.0A		0151365	0151117
	WATER	MCAWW 300.0A		0151362	0151115
004	WATER	MCAWW 300.0A		0151365	0151117
	WATER	MCAWW 300.0A		0151362	0151115
005	WATER	MCAWW 300.0A		0151365	0151117
	WATER	MCAWW 300.0A		0151362	0151115
006	WATER	MCAWW 300.0A		0151365	0151117
	WATER	MCAWW 300.0A		0151362	0151115

METHOD BLANK REPORT

General Chemistry

Client Lot #...: G0E260150 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N		Work Order #: DDWRD101		MB Lot-Sample #: G0E300000-362		
	ND	0.050	mg/L	MCAWW 300.0A	05/26/00	0151362
		Dilution Factor: 1				
Sulfate		Work Order #: DDWRH101		MB Lot-Sample #: G0E300000-365		
	ND	1.0	mg/L	MCAWW 300.0A	05/26/00	0151365
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: G0E260150 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N			Work Order #: DDWRD102 LCS Lot-Sample#: G0E300000-362				
	1.00	0.952	mg/L	95	MCAWW 300.0A	05/26/00	0151362
			Dilution Factor: 1				
Sulfate			Work Order #: DDWRH102 LCS Lot-Sample#: G0E300000-365				
	20.0	20.5	mg/L	103	MCAWW 300.0A	05/26/00	0151365
			Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: G0E260150 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N		Work Order #: DDWRD102 LCS Lot-Sample#: G0E300000-362			
	95	(90 - 110)	MCAWW 300.0A	05/26/00	0151362
		Dilution Factor: 1			
Sulfate		Work Order #: DDWRH102 LCS Lot-Sample#: G0E300000-365			
	103	(90 - 110)	MCAWW 300.0A	05/26/00	0151365
		Dilution Factor: 1			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: G0E260150 **Matrix.....:** WATER
Date Sampled...: 05/25/00 **Date Received..:** 05/25/00

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH
Nitrate as N			WO#: DDRP1106-MS/DDRP1107-MSD		MS Lot-Sample #: G0E260150-001				
	0.14	20.0	19.6	mg/L	97		MCAWW 300.0A	05/26/00	01513
	0.14	20.0	19.8	mg/L	98	1.2	MCAWW 300.0A	05/26/00	01513
			Dilution Factor: 1						
Sulfate			WO#: DDRP1108-MS/DDRP1109-MSD		MS Lot-Sample #: G0E260150-001				
	1.5	300	310	mg/L	103		MCAWW 300.0A	05/26/00	01513
	1.5	300	310	mg/L	103	0.23	MCAWW 300.0A	05/26/00	01513
			Dilution Factor: 1						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: G0E260150 **Matrix.....:** WATER
Date Sampled...: 05/25/00 **Date Received..:** 05/25/00

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N		WO#: DDRP1106-MS/DDRP1107-MSD				MS Lot-Sample #: G0E260150-001	
	97	(90 - 110)			MCAWW 300.0A	05/26/00	0151362
	98	(90 - 110)	1.2	(0-10)	MCAWW 300.0A	05/26/00	0151362
		Dilution Factor: 1					
Sulfate		WO#: DDRP1108-MS/DDRP1109-MSD				MS Lot-Sample #: G0E260150-001	
	103	(90 - 110)			MCAWW 300.0A	05/26/00	0151365
	103	(90 - 110)	0.23	(0-10)	MCAWW 300.0A	05/26/00	0151365
		Dilution Factor: 1					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

APPENDIX B

SAMPLING EVENT DATA SHEETS

DEPTH TO WATER

DATE: 5-25

PROJECT 792586 AC Transit Seminary

EVENT Quarterly

TECHNICIAN CP/BW

NO.	WELL OR LOCATION	DATE	TIME	MEASUREMENT	CODE	COMMENTS
1	MW-1	5-25	8:51	3.69		
2	MW-2		9.13	3.35	Product Strata 3.23	3.80 O
3	MW-3		9:06	2.41		3.92 GWI
4					GWI	3.23 MW-2
5					OIL	3.35 9.13
6						
7						
8						
9	MW-9		8:57	4.95		
10	MW-10		9:02	3.11		
11	MW-11		9:05	7.58		
8						
9						
10						
11						
12						
13						
14						
15						

Project Name: ACT LES-SSI Seminary Project Number:
Casing Diameter (in): 2"
Total Well Depth (ft): 15.50
Depth to Water (ft), before purging: 3.69
Sample Date: 5-25-00
Sample ID: MW-1

Development Method:

___ Bailer: ___ Teflon ___ Stainless Steel ___ PVC ___ ABS Plastic

_X_ Pump: ___ Dedicated Submersible Pump ___ Bladder Pump
_X_ Non-Dedicated Submersible Pump

Time	pH	Conduct. (umho/cm)	Temp. (Celsius)	Water Level (to 0.01 ft)	Cum. Vol. (gal)	Pump Rate (GPM)
928	6.7	1697	19.9	5.36	2	0.5
933	7.0	1473	20.0	5.47	4	↓
936	7.0	1447	19.9	5.64	6	↓
			Total	Vol. = 6.15g		

Water Volume to be Purged (gal) = (15.50 - 3.69) × .165 = 1.9 × 3 = 5.8
(Casing Length in Ft - Depth to Water in Ft) x X x 3
Where X = 1 Well Volume in gal/ft, X = 0.165 for 2 in. wells, X = 0.37 for 3 in. wells, X = 0.65 for 4 in. w
NOTE: 3 to 5 Well Casing Volumes required prior to sample collection.

At least 3 well casing volumes were removed prior to sampling.

Sample Collection Method:

_X_ Bailer: ___ Teflon ___ Stainless Steel ___ PVC ___ ABS Plastic

___ Pump: ___ Dedicated Submersible Pump ___ Bladder Pump
___ Non-Dedicated Submersible Pump

QA/QC Samples if any (Duplicate, Field Blank, Rinse Blank, etc.):

Trip Blank @ 1000

Parameter Collected: Nitrate/Sulfate 8260
Sample Appearance 8015 GRO/DRO
___ OVA Reading (ppm)
___ Suspended Solids (describe):

D.O. = 1.95 mg/L
F.E. = 01.58 mg/L
ORP - 61

Decontamination Performed: Centrifugal pump to purge
rinsed/washed Sounder/meters

Comments / Calculations:

Slight ODOR

Start @ 9:25
Stop @ 937
Sampled @ 1015

5-25-00

Project Name: A-T LEE-SSI Seminary
Project Number:
Casing Diameter (in): 2"
Sample Date: 5-25-00
Total Well Depth (ft): 16.80
Sample ID: MW-3
Depth to Water (ft), before purging: 2.41

Development Method:

____ Bailer: ____ Teflon ____ Stainless Steel ____ PVC ____ ABS Plastic

__X__ Pump: ____ Dedicated Submersible Pump ____ Bladder Pump
__X__ Non-Dedicated Submersible Pump

Time	pH	Conduct. (umho/cm)	Temp. (Celsius)	Water Level (to 0.01 ft)	Cum. Vol. (gal)	Pump Rate (GPM)
1106	7.6	1168	24.8	6.31	2.5	0.5
1111	7.6	965	24.6	7.25	5	↓
1114	7.6	920	24.3	8.37	7.5	↓
			Tot Vol. purged		7.55	

Water Volume to be Purged (gal) = $16.80 - 14.^{2.41}$ x .165 = 2.3 x3 = 7
(Casing Length in Ft - Depth to Water in Ft) x X x 3
Where X = 1 Well Volume in gal/ft, X = 0.165 for 2 in. wells, X = 0.37 for 3 in. wells, X = 0.65 for 4 in. w
NOTE: 3 to 5 Well Casing Volumes required prior to sample collection.

At least __3__ well casing volumes were removed prior to sampling.

Sample Collection Method:

__X__ Bailer: ____ Teflon ____ Stainless Steel ____ PVC ____ ABS Plastic

____ Pump: ____ Dedicated Submersible Pump ____ Bladder Pump
____ Non-Dedicated Submersible Pump

QA/QC Samples if any (Duplicate, Field Blank, Rinse Blank, etc.):

Parameter Collected: Nitrate/Sulfate 8200
Sample Appearance 8015 GRO/DRO
____ OVA Reading (ppm)
____ Suspended Solids (describe):

D. O. = 4.64
F.E. = 0.60
ORP = -72
centrifugal pump to purge
Sonde/meter

Decontamination Performed:

rinsed/washed

Comments / Calculations:

Hydrocarbon Oder

Start @ 1100
Stop @ 1116
Sampled @ 1130

Project Name: AC-T LCE-SSI Summary Project Number:
Casing Diameter (in): 2"
Total Well Depth (ft): 11.40
Depth to Water (ft), before purging: 3.11
Sample Date: 5-25-00
Sample ID: MW-10

Development Method:

____ Bailer: ____ Teflon ____ Stainless Steel ____ PVC ____ ABS Plastic

__X__ Pump: ____ Dedicated Submersible Pump ____ Bladder Pump
__X__ Non-Dedicated Submersible Pump

Time	pH	Conduct. (umho/cm)	Temp. (Celsius)	Water Level (to 0.01 ft)	Cum. Vol. (gal)	Pump Rate (GPM)
1201	7.4	2.86mMhos	25.4	4.85	1.5	0.5
1203	7.4	3.32	24.8	5.24	3	↓
1206	7.4	3.23	24.4	5.81	4.5	↓
			Tot. Vol purged		4.5g	

Water Volume to be Purged (gal) = 11.40 - 3.11 = 8.29 x .165 = 1.3 x 3 = 4.1
(Casing Length in Ft - Depth to Water in Ft) x X x 3
Where X = 1 Well Volume in gal/ft, X = 0.165 for 2 in. wells, X = 0.37 for 3 in. wells, X = 0.65 for 4 in. w
NOTE: 3 to 5 Well Casing Volumes required prior to sample collection.

At least 3 well casing volumes were removed prior to sampling.

Sample Collection Method:

__X__ Bailer: ____ Teflon ____ Stainless Steel ____ PVC ____ ABS Plastic

____ Pump: ____ Dedicated Submersible Pump ____ Bladder Pump
____ Non-Dedicated Submersible Pump

QA/QC Samples if any (Duplicate, Field Blank, Rinse Blank, etc.):

Nitrate/Sulfate

Parameter Collected: 8260
Sample Appearance 8015 GRO/DRO
____ OVA Reading (ppm)
____ Suspended Solids (describe):

D.O. = 1.94
F.E. = 0
ORP = -40

Decontamination Performed: Cent. pump used to purge

R/W1 S/M

Comments / Calculations:

Start @ 1158
Stop @ 1207
Sampled @ 1230

Project Name: AC-T LES-SSI Seminary
Casing Diameter (in): 2"
Total Well Depth (ft): 13.5
Depth to Water (ft), before purging: 7.58

Project Number:
Sample Date: 5-25-00
Sample ID: MW-11

Development Method:

____ Bailer: ____ Teflon ____ Stainless Steel ____ PVC ____ ABS Plastic

__X__ Pump: ____ Dedicated Submersible Pump ____ Bladder Pump
__X__ Non-Dedicated Submersible Pump

Time	pH	Conduct. (umho/cm)	Temp. (Celsius)	Water Level (to 0.01 ft)	Cum. Vol. (gal)	Pump Rate (GPM)
1053	7.5	1737	23.1		1	NA
					2	
					3	

Water Volume to be Purged (gal) = 13.50 - 7.58 = 5.92 x .165 = .9 x3 = 2.9
(Casing Length in Ft - Depth to Water in Ft) x X x 3
Where X = 1 Well Volume in gal/ft, X = 0.165 for 2 in. wells, X = 0.37 for 3 in. wells, X = 0.65 for 4 in. w
NOTE: 3 to 5 Well Casing Volumes required prior to sample collection.

At least __1__ well casing volumes were removed prior to sampling.

Sample Collection Method:

__X__ Bailer: ____ Teflon ____ Stainless Steel ____ PVC ____ ABS Plastic

____ Pump: ____ Dedicated Submersible Pump ____ Bladder Pump
____ Non-Dedicated Submersible Pump

QA/QC Samples if any (Duplicate, Field Blank, Rinse Blank, etc.):

Nitrate / Sulfate
8260

Parameter Collected: 8015 GRO/DRO

Sample Appearance

____ OVA Reading (ppm)
____ Suspended Solids (describe):

D.O. = 6.54
F.E. = 0
ORP = -41

Cent. pump used to purge
R/W S/M
Start @ 1049
Stop @ 1054

Decontamination Performed:

Comments / Calculations:

Well ran dry after purging on
casing Volume.
Sampled after well recovered 90%
Sampled @ 1250

Brian Pedersen

Project Name: ACT LEE-CO: Seminary Project Number:
Casing Diameter (in): 2" Sample Date:
Total Well Depth (ft): 19.50 Sample ID: MW-9
Depth to Water (ft), before purging: 4.95

Development Method:

___ Bailer: ___ Teflon ___ Stainless Steel ___ PVC ___ ABS Plastic

X Pump: ___ Dedicated Submersible Pump ___ Bladder Pump
X Non-Dedicated Submersible Pump

Time	pH	Conduct. (umho/cm)	Temp. (Celsius)	Water Level (to 0.01 ft)	Cum. Vol. (gal)	Pump Rate (GPM)
1327	7.8	2.14 mS/cm	23.5	7.49	2.5	0.6
1330	7.7	2.13	23.5	9.39	5	↓
1335	7.7	2.12	23.7	11.47	7.5	↓
			Total Vol. →		7.5	

Water Volume to be Purged (gal) = 19.50 - 4.95 = 14.5 x .165 = 2.4 x 3 = 7.2
(Casing Length in Ft - Depth to Water in Ft) x X x 3
Where X = 1 Well Volume in gal/ft, X = 0.165 for 2 in. wells, X = 0.37 for 3 in. wells, X = 0.65 for 4 in. wells
NOTE: 3 to 5 Well Casing Volumes required prior to sample collection.

At least ___ well casing volumes were removed prior to sampling.

Sample Collection Method:

X Bailer: ___ Teflon ___ Stainless Steel ___ PVC ___ ABS Plastic

___ Pump: ___ Dedicated Submersible Pump ___ Bladder Pump
___ Non-Dedicated Submersible Pump

QA/QC Samples if any (Duplicate, Field Blank, Rinse Blank, etc.):

Parameter Collected: Nitrate/Sulfate 8200, 8015 GRO/DRO
Sample Appearance
___ OVA Reading (ppm)
___ Suspended Solids (describe):

D.O. = 6.02
F.E. = 1.20
ORP = -27

Decontamination Performed: Cent. pump used to purge: rinsed/washed sounder/meters

Comments / Calculations:

Start @ 1323
Stop @ 1336

Sampled @ 1345

Ron Pedersen

Project Name: AC-1 LEG-SSI Seminary
Casing Diameter (in): 2"
Total Well Depth (ft): 23.50
Depth to Water (ft), before purging: 3.23

Project Number:
Sample Date: 5-25-00
Sample ID: MW-2

Development Method:

___ Bailer: ___ Teflon ___ Stainless Steel ___ PVC ___ ABS Plastic

_X_ Pump: ___ Dedicated Submersible Pump ___ Bladder Pump
_X_ Non-Dedicated Submersible Pump

Time	pH	Conduct. (umho/cm)	Temp. (Celsius)	Water Level (to 0.01 ft)	Cum. Vol. (gal)	Pump Rate (GPM)
1418	8.1	879	26.4	9.31	3.5	0.5
1424	8.1	1.99	26.4	11.65	7	↓
1428	8.0	2.04	26.6	14.30	10.5	↓
			Tot Vol. →	10.5		

Water Volume to be Purged (gal) = 23.50 − 3.23 = 20.27 x .165 = 3.3 x 3 = 10.
(Casing Length in Ft - Depth to Water in Ft) x X x 3
Where X = 1 Well Volume in gal/ft, X = 0.165 for 2 in. wells, X = 0.37 for 3 in. wells, X = 0.65 for 4 in. w
NOTE: 3 to 5 Well Casing Volumes required prior to sample collection.

At least 3 well casing volumes were removed prior to sampling.

Sample Collection Method:

_X_ Bailer: ___ Teflon ___ Stainless Steel ___ PVC ___ ABS Plastic

___ Pump: ___ Dedicated Submersible Pump ___ Bladder Pump
___ Non-Dedicated Submersible Pump

QA/QC Samples if any (Duplicate, Field Blank, Rinse Blank, etc.):

Parameter Collected: Nitrate/Sulfate
Sample Appearance 8260
8015 GRO/DRO

D.O = 5.67 mg/L
F.E = [redacted] mg/L
ORP = -47

___ OVA Reading (ppm)
___ Suspended Solids (describe):

Decontamination Performed:

rinsed/washed Sounde/meters

Comments / Calculations:

ODOR
Sheen w/product layer
Cloudy

Centrifugal pump to purge
Start @ 1411
Stop @ 1430
Sampled @ 1450

5-25-00