AC Transit
Alameda-Contra Costa Transit District

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

November 12, 2002

fp 796

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

Alameda County
NOV 15 2002
Environmental Health

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 third quarter of 2002 for the AC Transit facility located at 1100 Seminary Avenue in Oakland. Groundwater sampling of monitoring wells MW-1 through MW-3 and MW-9 through MW-11 was performed by Cameron-Cole in accordance with directives from your office.

Groundwater samples were collected from the six on-site monitoring wells on September 17, 2002. 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 and nitrate and sulfate using Standard Methods 300.0A. Field parameters collected during sampling included pH, temperature, electrical conductivity, dissolved oxygen, ferrous iron and oxidation reduction potential. In addition, monitoring well MW-2 is being purged dry monthly and during each quarterly sampling event

Analytical results of grab water samples showed benzene concentrations above the California maximum contaminant level of 1 ppb in wells MW-2, and MW-3. Ethylbenzene was detected above the MCL of 700 ppb in well MW-2 at a concentration of 1,600 ppb. Unspecified hydrocarbons, thought to be degraded diesel, were detected at concentrations above laboratory reporting limits in all wells.

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 Engineer

Enclosure
Barneychan11'12'02.doc

"MOVING TOWARD THE 21ST CENTURY"

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

October 2002

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

Prepared By:
Cameron-Cole
101 W. Atlantic, Building 90
Alameda, California 94501

Project No: 2016

CAMERON-COLE, LLC

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

October 2002

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

Prepared By:
Cameron-Cole
101 W. Atlantic Avenue, Building 90
Alameda, California 94501

Project No: 2016

for: Written By
Emily Waters
Environmental Scientist I

Approved By
Brad Wright, RG,
Sr. Hydrogeologist

STATE OF CALIFORNIA
REGISTERED GEOLOGIST
#6276
Exp. 9/04
BRADLEY D. WRIGHT
REGISTERED GEOLOGIST

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INTRODUCTION

This report presents the results of the September 2002 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 Cameron-Cole, in accordance with directives from the Alameda County Health Care Services Agency (ACHCS).

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 collecting water samples. Field parameters collected during sampling included pH, temperature, electric conductivity, dissolved oxygen (DO), ferrous iron (Fe^{2+}) 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) 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 six 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. As shown, groundwater flow is to the northwest at a gradient of 0.003 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, Fe^{2+} and temperature were monitored using calibrated field meters.

In addition, MW-2 is now being purged of ten casing volumes monthly and during all quarterly sampling events to expedite the removal of free phase hydrocarbons from the vicinity of the well. Field data sheets the over-purge events are included in Appendix B.

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 third quarter 2002 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-2 and MW-3. Ethylbenzene was detected above the MCL of 700 ppb in monitor well MW-2. TPH-Gas was detected above the reporting limit in monitor wells MW-1 and MW-2. Unspecified hydrocarbons, which are likely degraded diesel, were detected in all monitoring wells. 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.

SUMMARY OF RESULTS

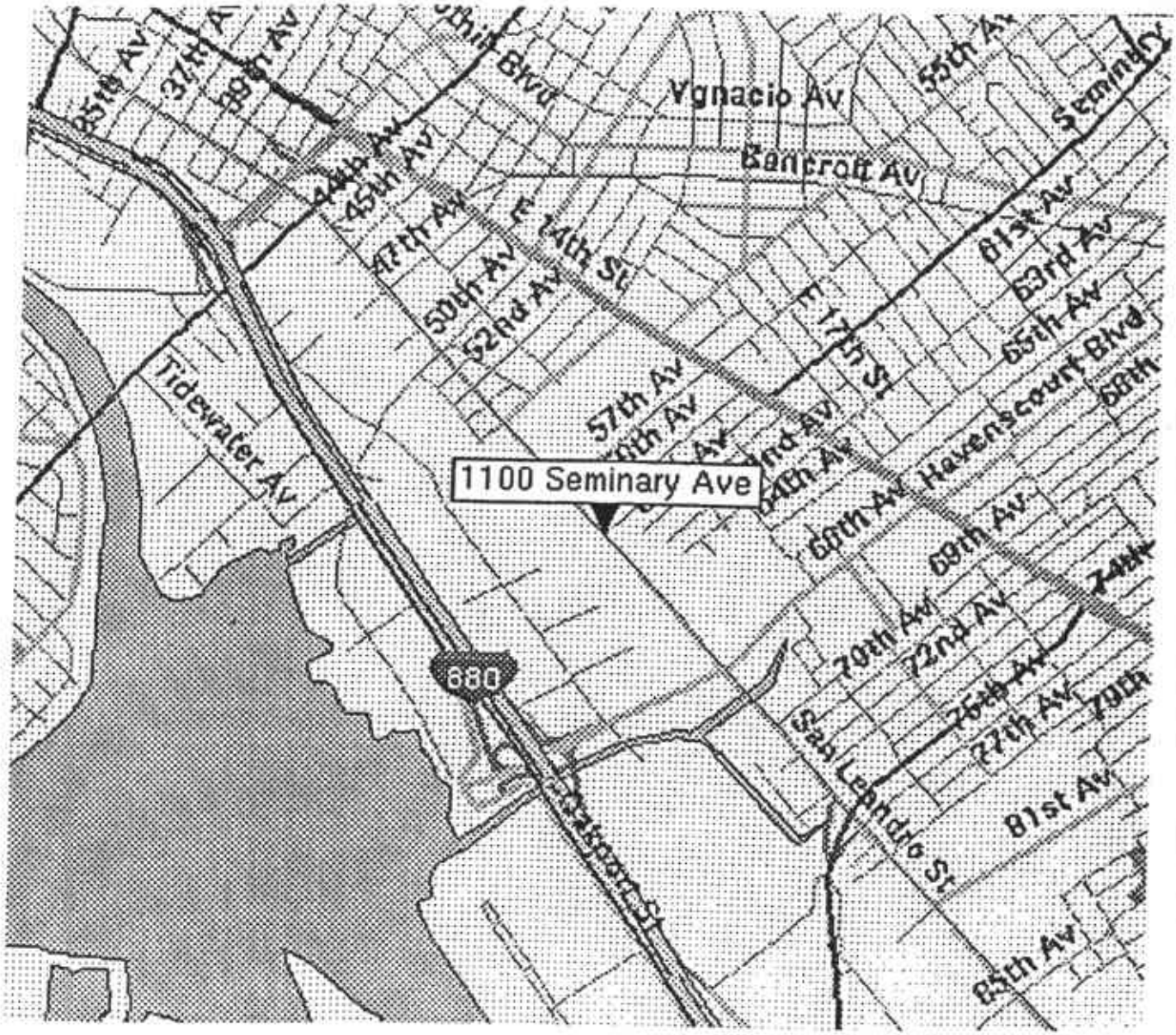
- Groundwater flow direction is towards the northwest at a gradient of 0.003 feet/foot.

- Chemical concentrations in excess of MCLs were limited to benzene in wells MW-2 and MW-3 and ethylbenzene in MW-2.

PROJECTED WORK AND RECOMMENDATIONS

- Quarterly groundwater monitoring is scheduled for November 2002.

- Continued monthly over purges of MW-2.



CAMERON-COLE

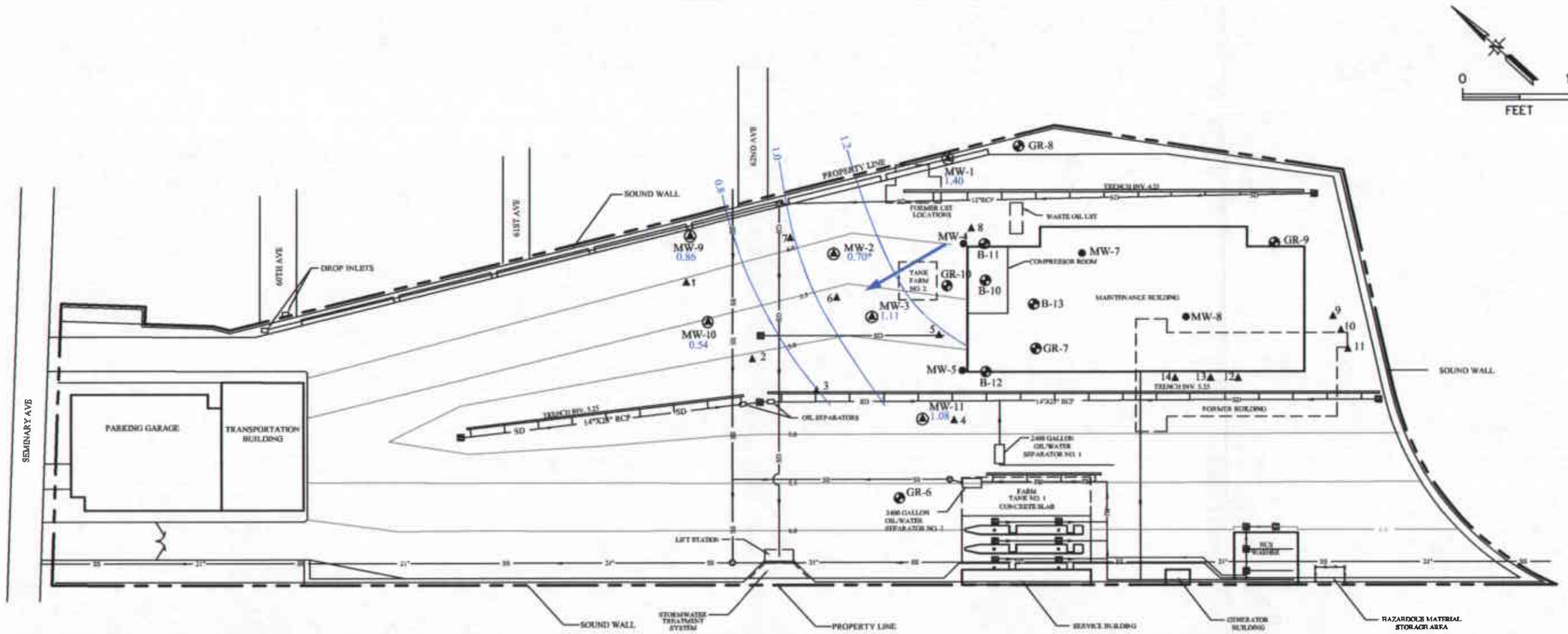
AC TRANSIT - OAKLAND, CALIFORNIA

FIGURE 1
SITE LOCATION MAP
1100 SEMINARY ROAD

SCALE	DATE
NO SCALE	3/22/00

North

LOCMAP



LEGEND

1.0	GROUNDWATER ELEVATION CONTOUR	0.54	GROUNDWATER ELEVATION (FT. MSL)
	REPORTED GROUNDWATER FLOW	*	NOT USED IN CONTOURING
6.0	CONTOUR		EXISTING MONITORING WELL
SD	STORM DRAIN PIPELINE		ABANDONED MONITORING WELL
SS	SANITARY SEWER PIPELINE		PREVIOUSLY INSTALLED SOIL BORING
IW	INDUSTRIAL WASTE PIPELINE		NEWLY INSTALLED SOIL BORING
	SURFACE DRAINAGE TRENCH		MANHOLE
			CATCH BASIN

	BY	DATE
DRAWN	WRB	10/28/02
CHECKED		
APPROVED		
APPROVED		
APPROVED		

CAMERON-COLE

FIGURE 2

AC TRANSIT - OAKLAND, CALIFORNIA

1100 SEMINARY ROAD-POTENTIOMETRIC SURFACE MAP
SEPTEMBER 17, 2002

SCALE: 1" = 120'

DWG. NO.: 2011-05

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	
	22-Aug-00		None	4.79	1.46	
	20-Nov-00		None	4.92	1.33	
	1-Mar-01		None	2.75	3.50	
	14-May-01		None	3.67	2.58	
	26-Jul-01		None	4.73	1.52	
	16-Oct-01		None	5.35	0.90	
	21-Feb-02		None	3.30	2.95	
	29-May-02		None	3.70	2.55	
	17-Sep-02		**None**	**4.85**	**1.40**	
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	3.23	2.3	2.40
	22-Aug-00		0.23	4.45	1.08	1.10
	20-Nov-00		0.23	4.70	0.83	0.85
	1-Mar-01		0.13	2.75	2.78	2.79
	14-May-01		Sheen	3.30	2.23	
	26-Jul-01		None	3.27	2.26	
	16-Oct-01		0.02	5.25	0.28	0.28
	21-Feb-02		0.01	3.32	2.21	2.21
	29-May-02		0.02	2.98	2.55	2.55
	17-Sep-02		**None**	**4.83**	**0.70**	
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	
	22-Aug-00		None	3.45	1.31	
	20-Nov-00		None	3.42	1.34	
	1-Mar-01		None	2.00	2.76	
	14-May-01		None	2.64	2.12	
	26-Jul-01		None	3.17	1.59	
	16-Oct-01		None	3.97	0.79	
	21-Feb-02		None	2.20	2.56	
	29-May-02		None	2.52	2.24	
	17-Sep-02		**None**	**3.65**	**1.11**	

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-9	7-Feb-00	5.8	None	4.37	1.43	
	25-May-00		None	4.95	0.85	
	22-Aug-00		None	5.18	0.62	
	20-Nov-00		None	4.70	1.10	
	1-Mar-01		None	3.03	2.77	
	14-May-01		None	4.56	1.24	
	26-Jul-01		None	5.17	0.63	
	16-Oct-01		None	5.19	0.61	
	21-Feb-02		None	4.79	1.01	
	29-May-02		None	4.07	1.73	
	17-Sep-02		**None**	**4.94**	**0.86**	
MW-10	7-Feb-00	4.65	None	3.19	1.46	
	25-May-00		None	3.11	1.54	
	22-Aug-00		None	4.35	0.30	
	20-Nov-00		None	4.18	0.47	
	1-Mar-01		None	3.14	1.51	
	14-May-01		None	3.27	1.38	
	26-Jul-01		None	3.95	0.70	
	16-Oct-01		None	4.57	0.08	
	21-Feb-02		None	3.29	1.36	
	29-May-02		None	3.30	1.35	
	17-Sep-02		**None**	**4.11**	**0.54**	
MW-11	7-Feb-00	4.19	None	4.97	-0.78	
	25-May-00		None	7.58	-3.39	
	22-Aug-00		None	3.01	1.18	
	20-Nov-00		None	2.88	1.31	
	1-Mar-01		None	1.91	2.28	
	14-May-01		None	4.49	-0.3	
	26-Jul-01		None	2.95	1.24	
	16-Oct-01		None	3.35	0.84	
	21-Feb-02		None	1.85	2.34	
	29-May-02		None	2.36	1.83	
	17-Sep-02		**None**	**3.11**	**1.08**	

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	Date	TPH-G	TPH-D	TPH	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	Nitrate	Sulfate	DO	Fe
	MCL (ppb)				1.0	150	700	1,750	13				
MW-1	7-Jan-99	<100	470	NA	17.0	2	31.0	18	<50	150	3,400	360	53
	7-Feb-00	390	<60	1,300	13.0	<10	<10	<10	<20	<50	1,200	1,220	11,800
	25-May-00	<50	<50	1,000	12.0	<1.0	<1.0	<1.0	<2.0	140	1,500	1,950	1,380
	22-Aug-00	<50	<50	600	6.3	<1.0	2.3	<1.0	<2.0	75	2,100	6,850	2,350
	20-Nov-00	<50	<50	630	2.8	<1.0	1.1	<1.0	<2.0	<50	4,500	11,210	1,170
	1-Mar-01	<50	<50	900	29.0	1.2	16.0	6	<2.0	<50	2,800	6,020	2,920
	14-May-01	<50	<50	540	4.1	<1.0	3.1	<1.0	<2.0	<50	2,500	13,970	1,870
	26-Jul-01	190	<50	500	<1.0	<1.0	<1.0	<1.0	<2.0	75	3,700	8,480	1,950
	16-Oct-01	<50	<50	650	16.0	1.1	4.6	1.6	<2.0	<50	3,600	9,480	2,560
	21-Feb-02	560	<50	550	21	1.0	19	15	<2.0	<50	3,000	5,890	2,200
	29-May-02	130	<50	510	<1.0	<1.0	<1.0	<1.0	<2.0	<50	2,300	6,820	1,300
	17-Sep-02	**140**	**<50**	**330**	**<1.0**	**<1.0**	**<1.0**	**<1.0**	**<2.0**	**<50**	**5,200**	**5,840**	**>3300**
MW-2	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
	22-Aug-00	<2500	<2500	150,000	23,000	<500	1,100	1,100	<1000	370	<1000	4,530	3,680
	20-Nov-00	<1200	<25000	430,000	18,000	<500	840	610	<1000	<250	<500	1,700	3,300
	3-Mar-01	<500	<25000	610,000	14,000	<830	<830	<830	<1700	<250	<5000	7,880	3,300
	14-May-01	<1000	280,000	51,000	19,000	240	1,100	1,200	<330	<50	<1000	3,330	>3300
	26-Jul-01	54,000	590,000	<25000	19,000	<500	1,300	1,500	<1000	<50	<1000	9,960	>3300
	16-Oct-01	43,000	560,000	<25000	18,000	280	1,100	1,300	<100	<50	1,500	17,630	>3300
	21-Feb-02	46,000	180,000	<12000	18,000	<500	950	1,500	<1000	<100	<2000	3,650	>3300
	29-May-02	49,000	130,000	<5000	17,000	350	970	1,700	<500	<50	1,000	2,220	>3300
	17-Sep-02	**60,000**	**<25000**	**470,000**	**21,000**	**<500**	**1,600**	**2,700**	**<1000**	**<50**	**<1000**	**4,270**	**>3300**

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

Well	Date	TPH-G	TPH-D	TPH	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	Nitrate	Sulfate	DO	Fe
	MCL (ppb)				1.0	150	700	1,750	13				
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
	22-Aug-00	<50	<50	2,400	240	<10	<10	<10	<20	<50	19,300	3,970	20
	20-Nov-00	<50	<50	2,400	<25	<25	<25	<25	<50	<50	26,500	4,120	20
	1-Mar-01	<50	<50	1,200	100	<5.0	8.3	<5.0	<10	<50	27,000	1,510	50
	14-May-01	<50	<50	860	8.4	<1.0	1.2	<1.0	<2.0	<50	21,100	9,800	0
	26-Jul-01	1,200	<50	790	140	<5.0	12	<5.0	<10	<50	18,700	8,650	80
	16-Oct-01	1,000	<50	1,600	5.1	<1.0	4.3	<1.0	<2.0	<50	29,800	11,360	640
	21-Feb-02	1,700	<50	990	200	<10	29.0	12	<20	<50	20,500	5,730	0
	29-May-02	630	<50	840	68	<1.0	4.2	3.3	<2.0	<50	14,300	5,870	1,070
	17-Sep-02	**<50**	**<50**	**1,100**	**4.1**	**<1.0**	**1.8**	**1.0**	**<2.0**	**<50**	**17,000**	**6,820**	**2,820**
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
	22-Aug-00	<50	<50	120	<1.0	<1.0	<1.0	<1.0	<2.0	280	157,000	7,250	0
	20-Nov-00	<50	<50	130	<1.0	<1.0	<1.0	<1.0	<2.0	340	147,000	9,690	0
	1-Mar-01	<50	<50	150	<1.0	<1.0	<1.0	<1.0	<2.0	230	116,000	4,210	0
	14-May-01	<50	<50	110	<1.0	<1.0	<1.0	<1.0	<2.0	100	140,000	8,290	0
	26-Jul-01	<50	<50	71	<1.0	<1.0	<1.0	<1.0	<2.0	130	143,000	7,560	0
	16-Oct-01	<50	<50	120	<1.0	<1.0	<1.0	<1.0	<2.0	89	141,000	967	50
	21-Feb-02	<50	<50	89	<1.0	<1.0	<1.0	<1.0	<2.0	94	137,000	3,500	70
	29-May-02	<50	<50	95	<1.0	<1.0	<1.0	<1.0	<2.0	94	141,000	4,590	90
	17-Sep-02	**<50**	**<50**	**96**	**<1.0**	**<1.0**	**<1.0**	**<1.0**	**<2.0**	**100**	**143,000**	**3,860**	**2,130**

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AC Transit Facility
1100 Seminary Avenue, Oakland, California

Well	Date	TPH-G	TPH-D	TPH	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	Nitrate	Sulfate	DO	Fe
	MCL (ppb)				1.0	150	700	1,750	13				
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
	22-Aug-00	<50	<50	140	<1.0	<1.0	<1.0	<1.0	<2.0	69	126,000	4,350	0
	20-Nov-00	<50	<50	300	<1.0	<1.0	<1.0	<1.0	<2.0	<50	76,200	3,790	0
	1-Mar-01	<50	<50	250	<1.0	<1.0	<1.0	<1.0	<2.0	<250	106,000	7,440	0
	14-May-01	<50	<50	74	<1.0	<1.0	<1.0	<1.0	<2.0	<50	135,000	6,790	0
	26-Jul-01	<50	<50	120	<1.0	<1.0	<1.0	<1.0	<2.0	<50	125,000	9,680	1,970
	16-Oct-01	<50	<50	190	<1.0	<1.0	<1.0	<1.0	<2.0	<50	90,100	28,000	570
	21-Feb-02	<50	<50	190	<1.0	<1.0	<1.0	<1.0	<2.0	<50	77,700	4,280	0
	29-May-02	<50	<50	110	<1.0	<1.0	<1.0	<1.0	<2.0	<50	126,000	7,230	270
	17-Sep-02	**<50**	**<50**	**170**	**<1.0**	**<1.0**	**<1.0**	**<1.0**	**<2.0**	**<50**	**107,000**	**4,230**	**>3300**
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
	22-Aug-00	<50	<50	170	<1.0	<1.0	<1.0	<1.0	9.3	610	168,000	4,640	20
	20-Nov-00	<50	<50	190	<1.0	<1.0	<1.0	<1.0	7.5	550	143,000	2,380	0
	1-Mar-01	<50	<50	250	<1.0	<1.0	<1.0	<1.0	15.0	170	80,300	5,860	0
	14-May-01	<50	<50	160	<1.0	<1.0	<1.0	<1.0	14.0	230	103,000	6,060	2,910
	26-Jul-01	<50	<50	220	5.9	<1.0	<1.0	2.7	20.0	180	71,300	7,360	>3300
	16-Oct-01	<50	<50	170	<1.0	<1.0	<1.0	<1.0	12.0	190	101,000	8,810	>3300
	21-Feb-02	<50	<50	170	<1.0	<1.0	<1.0	<1.0	2.2	110	75,600	4,280	0
	29-May-02	<50	<50	290	<1.0	<1.0	<1.0	<1.0	2.3	140	98,700	8,350	0
	17-Sep-02	**<50**	**<500**	**1,900**	**<1.0**	**<1.0**	**<1.0**	**<1.0**	**3.8**	**54**	**141,000**	**6,260**	**90**

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 unknown hydrocarbon
MCL: Maximum Contaminant Level
MTBE: Methyl-tert,butylether
DO: Dissolved Oxygen
Fe: Ferrous Iron

APPENDIX A

CERTIFIED ANALYTICAL REPORTS

CHAIN-OF-CUSTODY DOCUMENTS

SEVERN TRENT SERVICES

STL Sacramento
880 Riverside Parkway
West Sacramento, CA 95605-1500

Tel: 916 373 5600
Fax: 916 371 8420
www.stl-inc.com

October 22, 2002

STL SACRAMENTO PROJECT NUMBER: G2I170328

Brad Wright
Cameron-Cole LLC
101 West Atlantic Avenue
Building #90
Alameda, CA 94501

Dear Mr. Wright,

This report contains the analytical results for the samples received under chain of custody by STL Sacramento on September 17, 2002. These samples are associated with your AC Transit Seminary project.

The test results in this report meet all NELAC requirements for parameters that accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The case narrative is an integral part of this report.

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

Sincerely,

Bonnie McNeill

Bonnie J. McNeill
Project Manager

TABLE OF CONTENTS

STL SACRAMENTO PROJECT NUMBER G2I170328

CASE NARRATIVE

STL SACRAMENTO PROJECT NUMBER G2I170328

General Comments

Samples were received at 2 degrees Centigrade.

WATER, 8260B, BTEX + MTBE
Samples: 1 through 7

A laboratory control sample/duplicate control sample was prepared instead of a matrix spike/matrix spike duplicate due to limited sample availability.

There were no other anomalies associated with this project.

STL Sacramento

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: STL Sacramento Laboratory Quality Manual

STL Sacramento Certifications:
Alaska (UST-055), Arizona (#AZ00616), Arkansas, California (NELAP # 01119CA) (ELAP #I-2439), Connecticut (#PH-0691), Florida (E87570), Hawaii, Louisiana (AI # 30612), New Jersey (Lab ID 44005), Nevada (#CA 044), New York (LAB ID 11666 serial # 107407), Oregon (LAB ID CA 044), South Carolina (LAB ID 87014, Cert. # 870140), Utah (E-168), Virginia (#00178), Washington (# C087), West Virginia (# 9930C), Wisconsin (Lab 998204680), USNAVY, USACE, USDA Foreign Plant (Permit # 37-82605), USDA Foreign Soil (Permit # S-46613)..

Sample Summary
G2I170328

WO#	Sample #	Client Sample ID	Sampling Date	Received Date
E8D5N	1	MW-9	9/17/02 11:10 AM	9/17/02 07:00 PM
E8D5P	2	MW-1	9/17/02 12:00 PM	9/17/02 07:00 PM
E8D5Q	3	MW-2	9/17/02 01:20 PM	9/17/02 07:00 PM
E8D5T	4	TRIP BLANK	9/17/02 08:30 AM	9/17/02 07:00 PM
E8D5V	5	MW-10	9/17/02 09:10 AM	9/17/02 07:00 PM
E8D5W	6	MW-3	9/17/02 10:15 AM	9/17/02 07:00 PM
E8D5X	7	MW-11	9/17/02 02:00 PM	9/17/02 07:00 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 not 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 weight

G2170328

[redacted]

Chain of Custody Record

STL-4124 (1200)

SEVERN TRENT SERVICES

Severn Trent Laboratories, Inc.

Client: Cameron Cole	Project Manager: Brad Wright	Date: 9/17/02	Chain of Custody Number: 086132
Address: 101 W. Atlantic Ave Bldg 90	Telephone Number (Area Code)/Fax Number: (510) 769-3563	Lab Number:	Page ____ of ____
City: Alameda · State: CA · Zip Code: 94501	Site Contact: · Lab Contact: B. McNell		
Project Name and Location (State): 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: Air	Matrix: Aqueous	Matrix: Sed.	Matrix: Soil	Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	W 8260B BTEX/MTBE	Nitrate Sulfate	8015 DRO	8015 GRO	Special Instructions/ Conditions of Receipt
MW-9	9/17/02	1110		X						X			X				good
↓	↓			↓			X							X			↓
↓	↓			↓			X								X		↓
↓	↓	↓		↓						X						X	↓
MW-1	↓	1200		↓						X			X				↓
↓	↓	↓		↓			X							X			↓
↓	↓	↓		↓			X								X		↓
↓	↓	↓		↓						X						X	↓
MW-2	↓	1320		↓						X			X				↓
↓	↓	↓		↓			X							X			↓
↓	↓	↓		↓			X								X		↓
↓	↓	↓		↓						X						X	↓

Possible Hazard Identification: [X] Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client [X] Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 3 months) 9-17-02

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days [X] 21 Days ☐ Other ____

QC Requirements (Specify): Standard

	Date	Time		Date	Time
1. Relinquished By: [signature]	9/17/02	1630	1. Received By: [signature]	9-17-02	1630
2. Relinquished By: [signature]	9-17-02	1900	2. Received By: [signature]	9-17-02	1900
3. Relinquished By:			3. Received By:		

Comments

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

STL - Sacramento (916) 373 - 5600

G21170328

[redacted]

Chain of Custody Record

SEVERN TRENT SERVICES

Severn Trent Laboratories, Inc.

STL-4124 (1200)

Client: Cameron Cole	Project Manager: Brad Wright	Date: 9/17/02	Chain of Custody Number: 086133
Address: 101 W. Atlantic Ave Bldg 90	Telephone Number (Area Code)/Fax Number: (510) 769-3563	Lab Number	Page ____ of ____
City: Alameda / State: CA / Zip Code: 94501	Site Contact	Lab Contact: B. McNeil	
Project Name and Location (State): 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: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: 8260 BTEX/MTBE	Nitrate/Sulfate	8015 DRO	8015 GRO	Special Instructions/ Conditions of Receipt
Trip Blank	9/17/02	0830		X						X			X				good
MW-10		0910					X			X			X	X			
							X							X	X		
MW-3		1015								X					X		
							X						X	X			
										X					X		
																	9-17-02

Possible Hazard Identification: [X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal: [ ] Return To Client [X] 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 [X] 21 Days [ ] Other ____

QC Requirements (Specify): standard

	Date	Time		Date	Time
1. Relinquished By	9/17/02	1630	1. Received By	9-17-02	1630
2. Relinquished By	9-17-02	1900	2. Received By	9-17-02	1900
3. Relinquished By			3. Received By		

Comments

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

G21170328

[redacted]

Chain of Custody Record

STL-4124 (1200)

SEVERN TRENT SERVICES — **Severn Trent Laboratories, Inc.**

Client: Cameron Cole	Project Manager: Brad Wright	Date: 9/17/02	Chain of Custody Number: 086134
Address: 101 W. Atlantic Ave Bldg 90	Telephone Number (Area Code)/Fax Number: (510) 769-3563	Lab Number:	Page ___ of ___
City: Alameda · State: CA · Zip Code: 94501	Site Contact: · Lab Contact: B. McNeil		
Project Name and Location (State): AC Transit Seminary	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

Analysis (Attach list if more space is needed): 8260 BTEX MTBE; Nitrate Sulfate; GRO 8015; DRO 8015

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	8260 BTEX MTBE	Nitrate Sulfate	GRO 8015	DRO 8015	Special Instructions/ Conditions of Receipt
MW-11	9/17/02	1400		X						X			X				good
↓	↓	↓		↓			X							X			↓
										X					X		
							X									X	
																	[illegible] 9-17-02

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): Standard

	Date	Time		Date	Time
1. Relinquished By: [signature]	9/17/02	1630	1. Received By: [signature]	9-17-02	1630
2. Relinquished By: [signature]	9-17-02	1900	2. Received By: [signature]	9-17-02	1900
3. Relinquished By:			3. Received By:		

Comments

STL - Sacramento (916) 373-5600

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

WATER, 8015M, TPH Gas

CAMERON-COLE LLC

Client Sample ID: MW-9

GC Volatiles

Lot-Sample #...: G2I170328-001 Work Order #...: E8D5N1AE Matrix.....: WATER
Date Sampled...: 09/17/02 Date Received..: 09/17/02
Prep Date.....: 09/24/02 Analysis Date..: 09/24/02
Prep Batch #...: 2281427
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	107	(70 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-1

GC Volatiles

Lot-Sample #...: G2I170328-002	Work Order #...: E8D5P1AE	Matrix.....: WATER
Date Sampled...: 09/17/02	Date Received..: 09/17/02	
Prep Date.....: 09/24/02	Analysis Date..: 09/24/02	
Prep Batch #...: 2281427		
Dilution Factor: 1	Method.....: DHS CA LUFT	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Gasoline)	ND	50	ug/L
Unknown Hydrocarbon	140	50	ug/L

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

CAMERON-COLE LLC

Client Sample ID: MW-2

GC Volatiles

Lot-Sample #...: G2I170328-003	Work Order #...: E8D5Q1AE		Matrix.....: WATER
Date Sampled...: 09/17/02	Date Received..: 09/17/02		
Prep Date.....: 09/25/02	Analysis Date..: 09/25/02		
Prep Batch #...: 2281441			
Dilution Factor: 20	Method.....: DHS CA LUFT		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Gasoline)	60000	1000	ug/L
Unknown Hydrocarbon	ND	1000	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	108	(70 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-10

GC Volatiles

Lot-Sample #...: G2I170328-005	Work Order #...: E8D5V1AE	Matrix.....: WATER	
Date Sampled...: 09/17/02	Date Received..: 09/17/02		
Prep Date.....: 09/25/02	Analysis Date..: 09/25/02		
Prep Batch #...: 2281441			
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	106	(70 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-3

GC Volatiles

Lot-Sample #...: G2I170328-006	**Work Order #...:** E8D5W1AE	**Matrix.....:** WATER	
Date Sampled...: 09/17/02	**Date Received..:** 09/17/02		
Prep Date.....: 09/24/02	**Analysis Date..:** 09/24/02		
Prep Batch #...: 2281427			
Dilution Factor: 1	**Method.....:** DHS CA LUFT		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Gasoline)	ND	50	ug/L
Unknown Hydrocarbon	**310**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	116	(70 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-11

GC Volatiles

Lot-Sample #...: G2I170328-007 Work Order #...: E8D5X1AE Matrix.....: WATER
Date Sampled...: 09/17/02 Date Received..: 09/17/02
Prep Date.....: 09/24/02 Analysis Date..: 09/24/02
Prep Batch #...: 2281427
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	103	(70 - 130)

QC DATA ASSOCIATION SUMMARY

G2I170328

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	DHS CA LUFT		2281427	
002	WATER	DHS CA LUFT		2281427	
003	WATER	DHS CA LUFT		2281441	
005	WATER	DHS CA LUFT		2281441	
006	WATER	DHS CA LUFT		2281427	
007	WATER	DHS CA LUFT		2281427	

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: G2I170328 Work Order #...: E9K4J1AA Matrix.....: WATER
MB Lot-Sample #: G2J080000-427

Prep Date.....: 09/24/02
Analysis Date..: 09/24/02 Prep Batch #...: 2281427
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	103	(70 - 130)

NOTE(S):

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

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: G2I170328 Work Order #...: E9K661AA Matrix.....: WATER
MB Lot-Sample #: G2J080000-441

Prep Date.....: 09/25/02
Analysis Date..: 09/25/02 Prep Batch #...: 2281441
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	103	(70 - 130)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: G2I170328 Work Order #...: E9K4J1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: G2J080000-427 E9K4J1AD-LCSD
Prep Date.....: 09/24/02 Analysis Date..: 09/24/02
Prep Batch #...: 2281427
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
TPH (as Gasoline)	86	(70 - 130)			DHS CA LUFT
	88	(70 - 130)	1.9	(0-35)	DHS CA LUFT

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

Client Lot #...: G2I170328 Work Order #...: E9K4J1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: G2J080000-427 E9K4J1AD-LCSD
Prep Date.....: 09/24/02 Analysis Date..: 09/24/02
Prep Batch #...: 2281427
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
TPH (as Gasoline)	**1000**	**861**	**ug/L**	**86**		**DHS CA LUFT**
	1000	**878**	**ug/L**	**88**	**1.9**	**DHS CA LUFT**

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

Client Lot #...: G2I170328 Work Order #...: E9K661AC-LCS Matrix.....: WATER
LCS Lot-Sample#: G2J080000-441 E9K661AD-LCSD
Prep Date.....: 09/25/02 Analysis Date..: 09/25/02
Prep Batch #...: 2281441
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
TPH (as Gasoline)	1000	922	ug/L	92		DHS CA LUFT
	1000	981	ug/L	98	6.3	DHS CA LUFT

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	110	(70 - 130)
	114	(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 #...: G2I170328 Work Order #...: E9K661AC-LCS Matrix.....: WATER
LCS Lot-Sample#: G2J080000-441 E9K661AD-LCSD
Prep Date.....: 09/25/02 Analysis Date..: 09/25/02
Prep Batch #...: 2281441
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
TPH (as Gasoline)	92	(70 - 130)			DHS CA LUFT
	98	(70 - 130)	6.3	(0-35)	DHS CA LUFT

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	110	(70 - 130)
	114	(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

CAMERON-COLE LLC

Client Sample ID: MW-9

GC/MS Volatiles

Lot-Sample #...:	G2I170328-001	**Work Order #...:**	E8D5N1AF	**Matrix.....:**	WATER
Date Sampled...:	09/17/02	**Date Received..:**	09/17/02		
Prep Date.....:	09/20/02	**Analysis Date..:**	09/20/02		
Prep Batch #...:	2270505				
Dilution Factor:	1	**Method.....:**	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Toluene	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	97	(80 - 125)
1,2-Dichloroethane-d4	114	(75 - 137)
Toluene-d8	104	(85 - 123)
Dibromofluoromethane	108	(70 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-1

GC/MS Volatiles

Lot-Sample #...: G2I170328-002 Work Order #...: E8D5P1AF Matrix.....: WATER
Date Sampled...: 09/17/02 Date Received..: 09/17/02
Prep Date.....: 09/20/02 Analysis Date..: 09/20/02
Prep Batch #...: 2270505
Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Toluene	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	98	(80 - 125)
1,2-Dichloroethane-d4	110	(75 - 137)
Toluene-d8	105	(85 - 123)
Dibromofluoromethane	105	(70 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-2

GC/MS Volatiles

Lot-Sample #...: G2I170328-003	Work Order #...: E8D5Q3AF		Matrix.....: WATER
Date Sampled...: 09/17/02	Date Received..: 09/17/02		
Prep Date.....: 09/24/02	Analysis Date..: 09/24/02		
Prep Batch #...: 2280399			
Dilution Factor: 500	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	21000 Q	500	ug/L
Ethylbenzene	1600	500	ug/L
Toluene	ND	500	ug/L
Xylenes (total)	2700	500	ug/L
Methyl tert-butyl ether (MTBE)	ND	1000	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	106	(80 - 125)
1,2-Dichloroethane-d4	117	(75 - 137)
Toluene-d8	103	(85 - 123)
Dibromofluoromethane	108	(70 - 130)

NOTE(S):

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

CAMERON-COLE LLC

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...:	G2I170328-004	Work Order #...:	E8D5T1AA	Matrix.....:	WATER
Date Sampled...:	09/17/02	Date Received..:	09/17/02		
Prep Date.....:	09/20/02	Analysis Date..:	09/20/02		
Prep Batch #...:	2270505				
Dilution Factor:	1	Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Toluene	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	101	(80 - 125)
1,2-Dichloroethane-d4	112	(75 - 137)
Toluene-d8	103	(85 - 123)
Dibromofluoromethane	112	(70 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-10

GC/MS Volatiles

Lot-Sample #...: G2I170328-005	Work Order #...: E8D5V2AF		Matrix.....: WATER
Date Sampled...: 09/17/02	Date Received..: 09/17/02		
Prep Date.....: 09/23/02	Analysis Date..: 09/23/02		
Prep Batch #...: 2273509			
Dilution Factor: 1	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Toluene	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	103	(80 - 125)
1,2-Dichloroethane-d4	116	(75 - 137)
Toluene-d8	105	(85 - 123)
Dibromofluoromethane	111	(70 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-3

GC/MS Volatiles

Lot-Sample #...: G2I170328-006	Work Order #...: E8D5W1AF	Matrix.....: WATER	
Date Sampled...: 09/17/02	Date Received..: 09/17/02		
Prep Date.....: 09/20/02	Analysis Date..: 09/20/02		
Prep Batch #...: 2270505			
Dilution Factor: 1	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	4.1	1.0	ug/L
Ethylbenzene	1.8	1.0	ug/L
Toluene	ND	1.0	ug/L
Xylenes (total)	1.0	1.0	ug/L
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	102	(80 - 125)
1,2-Dichloroethane-d4	110	(75 - 137)
Toluene-d8	104	(85 - 123)
Dibromofluoromethane	103	(70 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-11

GC/MS Volatiles

Lot-Sample #...: G2I170328-007 Work Order #...: E8D5X1AF Matrix.....: WATER
Date Sampled...: 09/17/02 Date Received..: 09/17/02
Prep Date.....: 09/20/02 Analysis Date..: 09/20/02
Prep Batch #...: 2270505
Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L
Methyl tert-butyl ether (MTBE)	3.8	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	99	(80 - 125)
1,2-Dichloroethane-d4	111	(75 - 137)
Toluene-d8	103	(85 - 123)
Dibromofluoromethane	103	(70 - 130)

QC DATA ASSOCIATION SUMMARY

G2I170328

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	SW846 8260B		2270505	
002	WATER	SW846 8260B		2270505	
003	WATER	SW846 8260B		2280399	
004	WATER	SW846 8260B		2270505	
005	WATER	SW846 8260B		2273509	
006	WATER	SW846 8260B		2270505	
007	WATER	SW846 8260B		2270505	

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: G2I170328 Work Order #...: E82491AA Matrix.....: WATER
MB Lot-Sample #: G2I270000-505

Prep Date.....: 09/20/02
Analysis Date..: 09/20/02 Prep Batch #...: 2270505
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Toluene	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	98	(80 - 125)
1,2-Dichloroethane-d4	109	(75 - 137)
Toluene-d8	100	(85 - 123)
Dibromofluoromethane	100	(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 #...: G2I170328 **Work Order #...:** E85MP1AA **Matrix.....:** WATER
MB Lot-Sample #: G2I300000-509

Prep Date.....: 09/23/02
Analysis Date..: 09/23/02 **Prep Batch #...:** 2273509
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Toluene	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	103	(80 - 125)
1,2-Dichloroethane-d4	121	(75 - 137)
Toluene-d8	108	(85 - 123)
Dibromofluoromethane	108	(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 #...: G2I170328 Work Order #...: E9H2K1AA Matrix.....: WATER
MB Lot-Sample #: G2J070000-399

Prep Date.....: 09/24/02
Analysis Date..: 09/24/02 Prep Batch #...: 2280399
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Toluene	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	99	(80 - 125)
1,2-Dichloroethane-d4	111	(75 - 137)
Toluene-d8	103	(85 - 123)
Dibromofluoromethane	103	(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 #...: G2I170328 **Work Order #...:** E82491AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G2I270000-505 E82491AD-LCSD
Prep Date.....: 09/20/02 **Analysis Date..:** 09/20/02
Prep Batch #...: 2270505
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**20.0**	**20.0**	**ug/L**	**100**		**SW846 8260B**
	20.0	**17.9**	**ug/L**	**90**	**11**	**SW846 8260B**
Toluene	**20.0**	**20.3**	**ug/L**	**102**		**SW846 8260B**
	20.0	**18.5**	**ug/L**	**93**	**9.3**	**SW846 8260B**
Chlorobenzene	**20.0**	**19.7**	**ug/L**	**99**		**SW846 8260B**
	20.0	**18.2**	**ug/L**	**91**	**8.2**	**SW846 8260B**
1,1-Dichloroethene	**20.0**	**19.4**	**ug/L**	**97**		**SW846 8260B**
	20.0	**17.2**	**ug/L**	**86**	**12**	**SW846 8260B**
Trichloroethene	**20.0**	**19.8**	**ug/L**	**99**		**SW846 8260B**
	20.0	**19.2**	**ug/L**	**96**	**3.3**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	102	(80 - 125)
	105	(80 - 125)
1,2-Dichloroethane-d4	113	(75 - 137)
	114	(75 - 137)
Toluene-d8	104	(85 - 123)
	112	(85 - 123)
Dibromofluoromethane	107	(70 - 130)
	111	(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 #...: G2I170328 **Work Order #...:** E82491AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G2I270000-505 E82491AD-LCSD
Prep Date.....: 09/20/02 **Analysis Date..:** 09/20/02
Prep Batch #...: 2270505
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**100**	**(84 - 125)**			**SW846 8260B**
	90	**(84 - 125)**	**11**	**(0-27)**	**SW846 8260B**
Toluene	**102**	**(85 - 122)**			**SW846 8260B**
	93	**(85 - 122)**	**9.3**	**(0-27)**	**SW846 8260B**
Chlorobenzene	**99**	**(80 - 123)**			**SW846 8260B**
	91	**(80 - 123)**	**8.2**	**(0-27)**	**SW846 8260B**
1,1-Dichloroethene	**97**	**(77 - 125)**			**SW846 8260B**
	86	**(77 - 125)**	**12**	**(0-31)**	**SW846 8260B**
Trichloroethene	**99**	**(79 - 127)**			**SW846 8260B**
	96	**(79 - 127)**	**3.3**	**(0-28)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	102	(80 - 125)
	105	(80 - 125)
1,2-Dichloroethane-d4	113	(75 - 137)
	114	(75 - 137)
Toluene-d8	104	(85 - 123)
	112	(85 - 123)
Dibromofluoromethane	107	(70 - 130)
	111	(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 #...: G2I170328 Work Order #...: E85MP1AD-LCS Matrix.....: WATER
LCS Lot-Sample#: G2I300000-509 E85MP1AE-LCSD
Prep Date.....: 09/23/02 Analysis Date..: 09/23/02
Prep Batch #...: 2273509
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**20.0**	**20.2**	**ug/L**	**101**		**SW846 8260B**
	20.0	**18.2**	**ug/L**	**91**	**10**	**SW846 8260B**
Toluene	**20.0**	**20.2**	**ug/L**	**101**		**SW846 8260B**
	20.0	**18.5**	**ug/L**	**93**	**8.8**	**SW846 8260B**
Chlorobenzene	**20.0**	**19.4**	**ug/L**	**97**		**SW846 8260B**
	20.0	**18.1**	**ug/L**	**91**	**6.8**	**SW846 8260B**
1,1-Dichloroethene	**20.0**	**19.0**	**ug/L**	**95**		**SW846 8260B**
	20.0	**18.0**	**ug/L**	**90**	**5.3**	**SW846 8260B**
Trichloroethene	**20.0**	**20.4**	**ug/L**	**102**		**SW846 8260B**
	20.0	**19.7**	**ug/L**	**98**	**3.7**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	94	(80 - 125)
	100	(80 - 125)
1,2-Dichloroethane-d4	101	(75 - 137)
	110	(75 - 137)
Toluene-d8	99	(85 - 123)
	103	(85 - 123)
Dibromofluoromethane	100	(70 - 130)
	103	(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 #...: G2I170328 Work Order #...: E85MP1AD-LCS Matrix.....: WATER
LCS Lot-Sample#: G2I300000-509 E85MP1AE-LCSD
Prep Date.....: 09/23/02 Analysis Date..: 09/23/02
Prep Batch #...: 2273509
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	101	(84 - 125)			SW846 8260B
	91	(84 - 125)	10	(0-27)	SW846 8260B
Toluene	101	(85 - 122)			SW846 8260B
	93	(85 - 122)	8.8	(0-27)	SW846 8260B
Chlorobenzene	97	(80 - 123)			SW846 8260B
	91	(80 - 123)	6.8	(0-27)	SW846 8260B
1,1-Dichloroethene	95	(77 - 125)			SW846 8260B
	90	(77 - 125)	5.3	(0-31)	SW846 8260B
Trichloroethene	102	(79 - 127)			SW846 8260B
	98	(79 - 127)	3.7	(0-28)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	94	(80 - 125)
	100	(80 - 125)
1,2-Dichloroethane-d4	101	(75 - 137)
	110	(75 - 137)
Toluene-d8	99	(85 - 123)
	103	(85 - 123)
Dibromofluoromethane	100	(70 - 130)
	103	(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 #...: G2I170328 Work Order #...: E9H2K1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: G2J070000-399 E9H2K1AD-LCSD
Prep Date.....: 09/24/02 Analysis Date..: 09/24/02
Prep Batch #...: 2280399
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**20.0**	**20.0**	**ug/L**	**100**		**SW846 8260B**
	20.0	**18.9**	**ug/L**	**95**	**5.7**	**SW846 8260B**
Toluene	**20.0**	**20.4**	**ug/L**	**102**		**SW846 8260B**
	20.0	**19.5**	**ug/L**	**98**	**4.6**	**SW846 8260B**
Chlorobenzene	**20.0**	**19.8**	**ug/L**	**99**		**SW846 8260B**
	20.0	**19.1**	**ug/L**	**95**	**3.8**	**SW846 8260B**
1,1-Dichloroethene	**20.0**	**19.5**	**ug/L**	**98**		**SW846 8260B**
	20.0	**18.4**	**ug/L**	**92**	**6.2**	**SW846 8260B**
Trichloroethene	**20.0**	**20.5**	**ug/L**	**103**		**SW846 8260B**
	20.0	**20.7**	**ug/L**	**104**	**0.95**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	95	(80 - 125)
	104	(80 - 125)
1,2-Dichloroethane-d4	102	(75 - 137)
	113	(75 - 137)
Toluene-d8	98	(85 - 123)
	109	(85 - 123)
Dibromofluoromethane	98	(70 - 130)
	105	(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 #...: G2I170328 **Work Order #...:** E9H2K1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G2J070000-399 E9H2K1AD-LCSD
Prep Date.....: 09/24/02 **Analysis Date..:** 09/24/02
Prep Batch #...: 2280399
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**100**	**(84 - 125)**			**SW846 8260B**
	95	**(84 - 125)**	**5.7**	**(0-27)**	**SW846 8260B**
Toluene	**102**	**(85 - 122)**			**SW846 8260B**
	98	**(85 - 122)**	**4.6**	**(0-27)**	**SW846 8260B**
Chlorobenzene	**99**	**(80 - 123)**			**SW846 8260B**
	95	**(80 - 123)**	**3.8**	**(0-27)**	**SW846 8260B**
1,1-Dichloroethene	**98**	**(77 - 125)**			**SW846 8260B**
	92	**(77 - 125)**	**6.2**	**(0-31)**	**SW846 8260B**
Trichloroethene	**103**	**(79 - 127)**			**SW846 8260B**
	104	**(79 - 127)**	**0.95**	**(0-28)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	95	(80 - 125)
	104	(80 - 125)
1,2-Dichloroethane-d4	102	(75 - 137)
	113	(75 - 137)
Toluene-d8	98	(85 - 123)
	109	(85 - 123)
Dibromofluoromethane	98	(70 - 130)
	105	(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, Diesel

CAMERON-COLE LLC

Client Sample ID: MW-9

GC Semivolatiles

Lot-Sample #...:	G2I170328-001	Work Order #...:	E8D5N1AD	Matrix.....:	WATER
Date Sampled...:	09/17/02	Date Received..:	09/17/02		
Prep Date.....:	09/18/02	Analysis Date..:	10/02/02		
Prep Batch #...:	2261342				
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	75	(57 - 147)

NOTE(S):

Unknown hydrocarbon in the range of n-C10 to n-C24. Quantitation based on Diesel between n-C10 to n-C24 only.

CAMERON-COLE LLC

Client Sample ID: MW-1

GC Semivolatiles

Lot-Sample #...: G2I170328-002 Work Order #...: E8D5P1AD Matrix.....: WATER
Date Sampled...: 09/17/02 Date Received..: 09/17/02
Prep Date.....: 09/18/02 Analysis Date..: 10/02/02
Prep Batch #...: 2261342
Dilution Factor: 1 Method.....: SW846 8015 MOD

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	330	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	95	(57 - 147)

NOTE(S):

Unknown hydrocarbon in the range of n-C10 to n-C24. Quantitation based on Diesel between n-C10 to n-C24 only.

CAMERON-COLE LLC

Client Sample ID: MW-2

GC Semivolatiles

Lot-Sample #...: G2I170328-003	Work Order #...: E8D5Q1AD		Matrix.....: WATER
Date Sampled...: 09/17/02	Date Received..: 09/17/02		
Prep Date.....: 09/18/02	Analysis Date..: 10/03/02		
Prep Batch #...: 2261342			
Dilution Factor: 500	Method.....: SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	25000	ug/L
Unknown Hydrocarbon	470000	25000	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	ND	(57 - 147)

NOTE(S):

Surrogate diluted out due to 500X dilution.

Unknown hydrocarbon in the range of n-C10 to n-C24. Quantitation based on Diesel between n-C10 and n-C24 only.

CAMERON-COLE LLC

Client Sample ID: MW-10

GC Semivolatiles

Lot-Sample #...: G2I170328-005	Work Order #...: E8D5V1AD		Matrix.....: WATER
Date Sampled...: 09/17/02	Date Received..: 09/17/02		
Prep Date.....: 09/18/02	Analysis Date..: 10/03/02		
Prep Batch #...: 2261342			
Dilution Factor: 1	Method.....: SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	170	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	89	(57 - 147)

NOTE(S):

Unknown hydrocarbon in the range of n-C10 to n-C24. Quantitation based on Diesel between n-C10 to n-C24 only.

CAMERON-COLE LLC

Client Sample ID: MW-3

GC Semivolatiles

Lot-Sample #...: G2I170328-006	Work Order #...: E8D5W1AD		Matrix.....: WATER
Date Sampled...: 09/17/02	Date Received..: 09/17/02		
Prep Date.....: 09/18/02	Analysis Date..: 10/03/02		
Prep Batch #...: 2261342			
Dilution Factor: 1	Method.....: SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	1100	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	90	(57 - 147)

NOTE(S):

Unknown hydrocarbon in the range of n-C10 to n-C24. Quantitation based on Diesel between n-C10 to n-C24 only.

CAMERON-COLE LLC

Client Sample ID: MW-11

GC Semivolatiles

Lot-Sample #...: G2I170328-007	Work Order #...: E8D5X1AD		Matrix.....: WATER
Date Sampled...: 09/17/02	Date Received..: 09/17/02		
Prep Date.....: 09/18/02	Analysis Date..: 10/03/02		
Prep Batch #...: 2261342			
Dilution Factor: 10	Method.....: SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	500	ug/L
Unknown Hydrocarbon	1900	500	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	ND	(57 - 147)

NOTE(S):

Surrogate diluted out due to 10X dilution.

Unknown hydrocarbon in the range of n-C10 to n-C24. Quantitation based on *Diesel* between *n-C10* to *n-C24* only.

QC DATA ASSOCIATION SUMMARY

G2I170328

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	MCAWW 300.0A		2270600	2270300
	WATER	MCAWW 300.0A		2270594	2270299
	WATER	SW846 8015 MOD		2261342	
	WATER	DHS CA LUFT		2281427	
	WATER	SW846 8260B		2270505	
002	WATER	MCAWW 300.0A		2270600	2270300
	WATER	MCAWW 300.0A		2270594	2270299
	WATER	SW846 8015 MOD		2261342	
	WATER	DHS CA LUFT		2281427	
	WATER	SW846 8260B		2270505	
003	WATER	MCAWW 300.0A		2270600	2270300
	WATER	MCAWW 300.0A		2270594	2270299
	WATER	SW846 8015 MOD		2261342	
	WATER	DHS CA LUFT		2281441	
	WATER	SW846 8260B		2280399	
004	WATER	SW846 8260B		2270505	
005	WATER	MCAWW 300.0A		2270600	2270300
	WATER	MCAWW 300.0A		2270594	2270299
	WATER	SW846 8015 MOD		2261342	
	WATER	DHS CA LUFT		2281441	
	WATER	SW846 8260B		2273509	
006	WATER	MCAWW 300.0A		2270600	2270300
	WATER	MCAWW 300.0A		2270594	2270299
	WATER	SW846 8015 MOD		2261342	
	WATER	DHS CA LUFT		2281427	
	WATER	SW846 8260B		2270505	
007	WATER	MCAWW 300.0A		2270600	2270300
	WATER	MCAWW 300.0A		2270594	2270299
	WATER	SW846 8015 MOD		2261342	
	WATER	DHS CA LUFT		2281427	
	WATER	SW846 8260B		2270505	

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: G2I170328 Work Order #...: E8FAW1AA Matrix.....: WATER
MB Lot-Sample #: G2I180000-342

Prep Date.....: 09/18/02
Analysis Date..: 10/02/02 Prep Batch #...: 2261342
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	94	(57 - 147)

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: G2I170328 **Work Order #...:** E8FAW1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G2I180000-342 E8FAW1AD-LCSD
Prep Date.....: 09/18/02 **Analysis Date..:** 10/02/02
Prep Batch #...: 2261342
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
TPH (as Diesel)	**1500**	**1280**	**ug/L**	**85**		**SW846 8015 MOD**
	1500	**1300**	**ug/L**	**86**	**1.4**	**SW846 8015 MOD**
TPH (as Motor Oil)	**NA**		**ug/L**	**0**		**SW846 8015 MOD**
	NA		**ug/L**			**SW846 8015 MOD**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	97	(57 - 147)
	98	(57 - 147)

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 Semivolatiles

Client Lot #...: G2I170328 Work Order #...: E8FAW1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: G2I180000-342 E8FAW1AD-LCSD
Prep Date.....: 09/18/02 Analysis Date..: 10/02/02
Prep Batch #...: 2261342
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
TPH (as Diesel)	85	(39 - 125)			SW846 8015 MOD
	86	(39 - 125)	1.4	(0-44)	SW846 8015 MOD
TPH (as Motor Oil)	0	(50 - 150)			SW846 8015 MOD
		(50 - 150)		(0-30)	SW846 8015 MOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	97	(57 - 147)
	98	(57 - 147)

NOTE(S):

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

Bold print denotes control parameters

General Chemistry - Various Methods

CAMERON-COLE LLC

Client Sample ID: MW-9

General Chemistry

Lot-Sample #...: G2I170328-001 Work Order #...: E8D5N Matrix.....: WATER
Date Sampled...: 09/17/02 Date Received..: 09/17/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	0.10	0.050	mg/L	MCAWW 300.0A	09/18/02	2270594
Sulfate	143 Q	10.0	mg/L	MCAWW 300.0A	09/18/02	2270600

NOTE(S):

RL Reporting Limit

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

CAMERON-COLE LLC

Client Sample ID: MW-1

General Chemistry

Lot-Sample #...: G2I170328-002 Work Order #...: E8D5P Matrix.....: WATER
Date Sampled...: 09/17/02 Date Received..: 09/17/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	ND	0.050	mg/L	MCAWW 300.0A	09/18/02	2270594
Sulfate	**5.2**	**1.0**	**mg/L**	**MCAWW 300.0A**	**09/18/02**	**2270600**

CAMERON-COLE LLC

Client Sample ID: MW-2

General Chemistry

Lot-Sample #...: G2I170328-003 Work Order #...: E8D5Q Matrix.....: WATER
Date Sampled...: 09/17/02 Date Received..: 09/17/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	ND	0.050	mg/L	MCAWW 300.0A	09/18/02	2270594
Sulfate	ND	1.0	mg/L	MCAWW 300.0A	09/18/02	2270600

CAMERON-COLE LLC

Client Sample ID: MW-10

General Chemistry

Lot-Sample #...: G2I170328-005 Work Order #...: E8D5V Matrix.....: WATER
Date Sampled...: 09/17/02 Date Received..: 09/17/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	ND	0.050	mg/L	MCAWW 300.0A	09/18/02	2270594
Sulfate	107 Q	10.0	mg/L	MCAWW 300.0A	09/18/02	2270600

NOTE(S):

RL Reporting Limit

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

CAMERON-COLE LLC

Client Sample ID: MW-3

General Chemistry

Lot-Sample #...: G2I170328-006 Work Order #...: E8D5W Matrix.....: WATER
Date Sampled...: 09/17/02 Date Received..: 09/17/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	ND	0.050	mg/L	MCAWW 300.0A	09/18/02	2270594
Sulfate	17.0	1.0	mg/L	MCAWW 300.0A	09/18/02	2270600

CAMERON-COLE LLC

Client Sample ID: MW-11

General Chemistry

Lot-Sample #...: G2I170328-007 Work Order #...: E8D5X Matrix.....: WATER
Date Sampled...: 09/17/02 Date Received..: 09/17/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	0.054	0.050	mg/L	MCAWW 300.0A	09/18/02	2270594
Sulfate	141 Q	10.0	mg/L	MCAWW 300.0A	09/18/02	2270600

NOTE(S):

RL Reporting Limit

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

QC DATA ASSOCIATION SUMMARY

G2I170328

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	MCAWW 300.0A		2270600	2270300
	WATER	MCAWW 300.0A		2270594	2270299
	WATER	SW846 8015 MOD		2261342	
	WATER	SW846 8260B		2270505	
002	WATER	MCAWW 300.0A		2270600	2270300
	WATER	MCAWW 300.0A		2270594	2270299
	WATER	SW846 8015 MOD		2261342	
	WATER	SW846 8260B		2270505	
003	WATER	MCAWW 300.0A		2270600	2270300
	WATER	MCAWW 300.0A		2270594	2270299
	WATER	SW846 8015 MOD		2261342	
	WATER	SW846 8260B		2280399	
004	WATER	SW846 8260B		2270505	
005	WATER	MCAWW 300.0A		2270600	2270300
	WATER	MCAWW 300.0A		2270594	2270299
	WATER	SW846 8015 MOD		2261342	
	WATER	SW846 8260B		2273509	
006	WATER	MCAWW 300.0A		2270600	2270300
	WATER	MCAWW 300.0A		2270594	2270299
	WATER	SW846 8015 MOD		2261342	
	WATER	SW846 8260B		2270505	
007	WATER	MCAWW 300.0A		2270600	2270300
	WATER	MCAWW 300.0A		2270594	2270299
	WATER	SW846 8015 MOD		2261342	
	WATER	SW846 8260B		2270505	

METHOD BLANK REPORT

General Chemistry

Client Lot #...: G2I170328 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N		Work Order #: E83FT1AA		MB Lot-Sample #:	G2I270000-594	
	ND	0.050	mg/L	MCAWW 300.0A	09/18/02	2270594
Sulfate		Work Order #: E83FV1AA		MB Lot-Sample #:	G2I270000-600	
	ND	1.0	mg/L	MCAWW 300.0A	09/18/02	2270600

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: G2I170328 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N			Work Order #: E83FT1AC		LCS Lot-Sample#: G2I270000-594		
	1.50	1.40	mg/L	94	MCAWW 300.0A	09/18/02	2270594
Sulfate			Work Order #: E83FV1AC		LCS Lot-Sample#: G2I270000-600		
	15.0	13.8	mg/L	92	MCAWW 300.0A	09/18/02	2270600

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: G2I170328 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N		Work Order #: E83FT1AC	LCS Lot-Sample#: G2I270000-594		
	94	(90 - 110)	MCAWW 300.0A	09/18/02	2270594
Sulfate		Work Order #: E83FV1AC	LCS Lot-Sample#: G2I270000-600		
	92	(90 - 110)	MCAWW 300.0A	09/18/02	2270600

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: G2I170328 **Matrix.....:** WATER
Date Sampled...: 09/17/02 **Date Received..:** 09/17/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N			WO#: E8D5N1AG-MS/E8D5N1AH-MSD		MS Lot-Sample #: G2I170328-001				
	0.10	1.00	1.10	mg/L	100		MCAWW 300.0A	09/18/02	2270594
	0.10	1.00	1.10	mg/L	99	0.18	MCAWW 300.0A	09/18/02	2270594
Sulfate			WO#: E8D5N1AJ-MS/E8D5N1AK-MSD		MS Lot-Sample #: G2I170328-001				
	143	100	224 N	mg/L	81		MCAWW 300.0A	09/18-09/20/02	2270600
	143	100	227 N	mg/L	84	1.5	MCAWW 300.0A	09/18-09/20/02	2270600

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: G2I170328 **Matrix.....:** WATER
Date Sampled...: 09/17/02 **Date Received..:** 09/17/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N		WO#: E8D5N1AG-MS/E8D5N1AH-MSD				MS Lot-Sample #: G2I170328-001	
	100	(90 - 110)			MCAWW 300.0A	09/18/02	2270594
	99	(90 - 110)	0.18	(0-10)	MCAWW 300.0A	09/18/02	2270594
Sulfate		WO#: E8D5N1AJ-MS/E8D5N1AK-MSD				MS Lot-Sample #: G2I170328-001	
	81 N	(90 - 110)			MCAWW 300.0A	09/18-09/20/02	2270600
	84 N	(90 - 110)	1.5	(0-10)	MCAWW 300.0A	09/18-09/20/02	2270600

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

APPENDIX B

SAMPLING EVENT DATA

Project Name: AC Seminary
Project Number: 2014
Well ID: MW-1
Casing Diameter (in): 2"
Sample Date: 9/17/02
Total Well Depth (ft): 15.35
Sample ID: MW-1
Depth to Water (ft) before purging: 4.85

Development Method:

NA _____**Bailer:** _____Teflon _____Stainless Steel _____PVC _____ABS Plastic

_____**Pump:** _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
1148	6.61	950	26.7	6.12	1.5	0.46
1151	6.71	889	26.3	6.24	3.0	↓
1154	6.76	840	25.5	6.34	4.5	↓
			Total Vol		5.5	

Water Volume to be Purged (gal):
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells
15.35 - 4.85 = 10.50 x 0.165 = 1.73 x 3 = 5.19
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: 8260 8015 GRO/DRO Nitrate/Sulfate

Sample Appearance
_____OVA Reading (ppm)
_____Suspended Solids (describe): clear pump used to purge disposable bailer used to sample

Decontamination Performed:
Washed/rinsed sounder/meters

start: 1144
stop: 1156
sample: 1200

Fe = 73.30
ORP = -40
DO = 5.84

Comments / Calculations:

Name: _____ Date: 9/17/02

Project Name: AC Seminary
Casing Diameter (in): 2"
Total Well Depth (ft): 23.51
Depth to Water (ft) before purging: 4.83

Project Number: 2014
Sample Date: 9/17/02
Sample ID: MW-2

Well ID: MW-2

Development Method:

NA _____**Bailer:** _____Teflon _____Stainless Steel _____PVC _____ABS Plastic

_____**Pump:** _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
1252	6.79	1945	29.1	8.55	3	0.29
1302	6.81	1998	30.3	10.63	6	↓
1312	6.82	2120	31.0	11.69	9	↓
			total vol =		9.5	

Water Volume to be Purged (gal):
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells
23.51 - 4.83 = 18.68 x 0.165 = 3.08 x 3 = 9.24 gal
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: 8260 8015 GRO/DRO Nitrate/Sulfate

Sample Appearance
_____OVA Reading (ppm)
_____Suspended Solids (describe):

cent pump used to purge
disposable bailer used to sample

Decontamination Performed:
Washed/rinsed sounder/meters

start: 1242
stop: 1315
sample: 1320

Fe = 73.30
ORP = -86
DO = 4.27

Comments / Calculations:

Name: Emily Attach

Date: 9/17/02

Project Name: AC Seminary
Project Number: 2014
Well ID: MW-3
Casing Diameter (in): 2"
Sample Date: 9/17/02
Total Well Depth (ft): 16.81
Sample ID: MW-3
Depth to Water (ft) before purging: 3.65

Development Method:

NA _____**Bailer:** _____Teflon _____Stainless Steel _____PVC _____ABS Plastic

_____**Pump:** _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
0948	6.88	~~3.72~~ 839 @	26.3	7.32	2	0.19
0958	6.86	741	28.2	7.74	4	↓
1008	6.89	737	28.4	8.03	6	↓
			Total Vol		7	

Water Volume to be Purged (gal):
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells
16.81 - 3.65 = 13.16 x .165 = 2.17 x 3 = 6.51
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: 8260 8015 GRO/DRO Nitrate/Sulfate

Sample Appearance
_____OVA Reading (ppm)
_____Suspended Solids (describe): Cent pump used to purge disposable bailer used for sample

Decontamination Performed:
Washed/rinsed sounder/meters

start: 0936
Stop: 1012
sample: 1015

Fe = ~~3.30~~ @ 2.28
ORP = -18
DO = 6.82

Comments / Calculations:

Name: Emily Todd

Date: 9/18/02

Project Name: AC Seminary
Casing Diameter (in): 2"
Total Well Depth (ft): 19.50
Depth to Water (ft) before purging: 4.95

Project Number: 2014
Sample Date: 9/7/02
Sample ID: MW-9

Well ID: MW-9

Development Method:
NA _____**Bailer:** _____Teflon _____Stainless Steel _____PVC _____ABS Plastic
_____**Pump:** _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
1042	6.69	1189	28.8	6.49	2	0.26
1049	6.73	1244	29.4	8.12	4	"
1059	6.81	1282	29.8	10.04	6	"
				Total vol =	7.5 gal	

Water Volume to be Purged (gal):
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells
19.50 - 4.95 = 14.55 x .165 = 2.40 x 3 = 7.2
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: 8260 8015 GRO/DRO Nitrate/Sulfate

Sample Appearance
_____OVA Reading (ppm)
_____Suspended Solids (describe):
cent pump used to purge
disposable bailer used to sample

Decontamination Performed:
Washed/rinsed sounder/meters

start: 1037
Stop: ~~1047~~ (w) 1105
sample: 1110

Fe = 2.13
ORP = -22
DO = 3.86

Comments / Calculations:

Name: Emily [illegible]

Date: 9/7/02

Project Name: AC Seminary
Casing Diameter (in): 2"
Total Well Depth (ft): 11.40
Depth to Water (ft) before purging: 4.11

Project Number: 2014
Sample Date: 9/17/02
Sample ID: MW-10

Well ID: MW-10

Development Method:
NA _____**Bailer:** _____Teflon _____Stainless Steel _____PVC _____ABS Plastic
_____**Pump:** _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
0852	7.03	3.30×10^3	23.8	5.85	1	0.25
0856	6.95	3.33×10^3	25.8	5.50	2	"
0900	6.90	3.29×10^3	26.3	5.73	3	"
				total vol = 4		

Water Volume to be Purged (gal):
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells
11.40 - 4.11 = 7.29 x 0.165 = 1.20 x 3 = 3.60
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: 8260 8015 GRO/DRO Nitrate/Sulfate

Sample Appearance
_____OVA Reading (ppm)
_____Suspended Solids (describe):

cent pump used to purge
disposable bailer used to sample

Decontamination Performed:
washed/rinsed sounder/meters

start: 0848
stop: 0904
sample: 0910

Fe => 3.30
ORP = -19
DO = 4.23

Comments / Calculations:

Name: Emily Allen

Date: 9/18/02

Project Name: AC Seminary
Casing Diameter (in): 2"
Total Well Depth (ft): 13.5
Depth to Water (ft) before purging: 3.11

Project Number: 2014
Sample Date: 9/17/02
Sample ID: MW-11

Well ID: MW-11

Development Method:
NA _____**Bailer:** _____Teflon _____Stainless Steel _____PVC _____ABS Plastic
_____**Pump:** _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
947	6.92	1012	28.2		1.5	0.03
1059	6.90	992	28.6		3.0	
1112	6.94	1046	29.0	12.61	4.5	
			total vol	@	5.5	

Water Volume to be Purged (gal):
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells
13.5 - 3.11 = 10.39 x 0.165 = 1.73 x 3 = 5.19
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: 8260 8015 GRO/DRO Nitrate/Sulfate

Sample Appearance
peri pump used to purge
disposable bailer used to sample
_____OVA Reading (ppm)
_____Suspended Solids (describe):

Decontamination Performed:
Washed/rinsed sounder/meters

start: 0835
stop: 1122
sample: 1400

Fe = 0.09
ORP = 48
DO = 6.26

Comments / Calculations:
Trip blank collected @ 0830

Name: _____ Date: 9/17/02

Project Name: AC Seminam
Casing Diameter (in): 2"
Total Well Depth (ft): 23.51
Depth to Water (ft) before purging: 4.22

Project Number: 2074
Sample Date: 7/25/02
Sample ID: /

Well ID: MW-2 overpurge

Development Method: no oil

NA Bailer: _____Teflon _____Stainless Steel _____PVC _____ABS Plastic

_____Pump: _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
1014	=start purge					
1214	=stop purge					
			total gallons = 32			

Water Volume to be Purged (gal):
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells
(23.51 - 4.22) x 0.165 = 3.2 x 10 = 32
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:

NA 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: NA _____ _____ _____

Sample Appearance
NA OVA Reading (ppm)
_____Suspended Solids (describe):

vent pump used to purge

Decontamination Performed:
washed / rinsed sounder

Comments / Calculations:
removed soak ease and rung out, placed back in well after purge

Name: Emily Watson

Date: 7/25/02

Project Name: AC Transit (Seminary) Project Number: 2014
Well ID: MW-2
Casing Diameter (in): 2" Sample Date: 8/22/02
Total Well Depth (ft): 23.5 Sample ID: NA
Depth to Water (ft) before purging: 4.78 (No Oil Interface)

Development Method: NA
_____**Bailer:** _____Teflon _____Stainless Steel _____PVC _____ABS Plastic

_____**Pump:** _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
Start	1310	(Over purge)				
Stop	1506					
				Total Volume: 32 gallons.		

Water Volume to be Purged (gal): 1872 X .165 = 3.09 X 10 = 30.9
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells

NOTE: 3 to 5 Well Casing Volumes required prior to sample collection.

At least 3 well casing volumes were removed prior to sampling. 10.36 = Total Case Volumes.

Sample Collection Method:
NA **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: None _____ _____ _____

Sample Appearance
_____OVA Reading (ppm)
_____Suspended Solids (describe): cent pump used to purge

Decontamination Performed:

Comments / Calculations: Left a "Soakease" in well. Replaced the "Soakease" from previous overpurge.

Name: _____ Date: 8/22/02

Project Name: AC Seminary
Casing Diameter (in): 2"
Total Well Depth (ft):
Depth to Water (ft) before purging:

Project Number: 2014
Sample Date: 9/17/02
Sample ID:

Well ID: MW-2
overpurge

Development Method:
NA _____**Bailer:** _____Teflon _____Stainless Steel _____PVC _____ABS Plastic
_____**Pump:** _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
					9.5 from sampling	
start =	1325					
end =	1414				0.65	
					Total vol = 21.5	
					Total vol = 31	

Water Volume to be Purged (gal):
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells
23.51 - 4.83 = 18.68 x 0.165 = 3.08 x 10 = 30.8
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: ~~8260~~ NA (ew) ~~8015 GRO/DRO~~ NA (ew) Nitrate/Sulfate NA (ew)

Sample Appearance
_____OVA Reading (ppm)
_____Suspended Solids (describe): cent pump used to purge

Decontamination Performed:
washed/rinsed sounder/meters

start:
stop:
sample:

Fe =
ORP = NA
DO =

Comments / Calculations:
left south east in well

Name: Emily Adams

Date: 9/18/02