

Shell 120865

Shoreline

LOST 592313

SUSTAINABLE STRATEGIES FOR GLOBAL LEADERS

May 28, 2009

Ms. Carol Campagna
Shell Oil Products US
20945 S. Wilmington Avenue
Carson, California 90810-1039

RECEIVED

SUBJ: SHELL GRASP MONITORING REPORT

Shell Service Station
1505 NE 205th Street
Shoreline, Washington
Delta Project SWA15-052-GA

DEPT. OF ECOLOGY
TCP-NWRO

Dear Ms. Campagna

Delta Consultants (Delta), has prepared this Shell GRASP Monitoring Report for the above referenced site.



GRASP (Groundwater Assessment Program) is a voluntary initiative by SHELL to install groundwater monitoring wells at numerous retail service stations nationwide that do not have any active release cases but have been identified to be in close proximity to one or more public water supply wells. The purpose of this program is to proactively monitor the groundwater beneath these sites and, in the event of a subsurface release, to respond quickly to protect public wells from this impact.

If you have any questions regarding this site, please contact Mr. Matthew Miller (Delta) at (425) 498-7722.

Sincerely,

DELTA CONSULTANTS

Matthew Miller, L.G.
Project Specialist

Attachments: Shell GRASP Monitoring Report

cc: John Wietfield, Department of Ecology, 3190 160th Avenue SE
Bellevue, Washington 98008-5452



Matthew Miller



May 28, 2009

SHELL GRASP MONITORING REPORT

Station Address: 1505 NE 205th Street
Shoreline, Washington

SHELL GRASP Incident No.: 97420021

DELTA Project No.: SWA15-052-GA

SHELL Environmental Engin./Phone No.: Carol Campagna/ (737) 864-1617

DELTA Project Manager/Phone No.: Matthew Miller/ (425) 498-7722

Current Phase of Project: GRASP Groundwater Monitoring

Frequency of Sampling: Annual

Frequency of Monitoring: Annual

Most Recent Sampling Event: March 23, 2009

Is Separate Phase Hydrocarbon Yes No

Present On-site (Well #'s):

Cumulative SPH Recovered to Date : None

SPH Recovered This Quarter : None

Sensitive Receptor(s) Information: Unknown

Approximate Depth to Groundwater: 25.94 to 36.11 feet

Groundwater Gradient: Southwest @ approximately 0.13 ft/ft

Summary of Unusual Activity: None

Matthew Miller, L.G.
Project Specialist (Delta)

ATTACHED:

- Table 1 – Groundwater Gauging and Analytical Results
- Figure 1 – Site Location Map
- Figure 2 – Groundwater Elevation Contour Map
- Figure 3 – Hydrocarbon Distribution in Groundwater Map
- Appendix A – Field Data Sheets
- Appendix B – Field Procedures
- Appendix C – Laboratory Report and Chain-of-Custody Documents

TABLE

TABLE 1
GROUNDWATER GAUGING AND ANALYTICAL DATA
 1505 NE 205th Street
 Shoreline, Washington

Sample ID	Sample Date	TPH-G (µg/l)	TPH-D (µg/l)	TPH-O (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	TBA (µg/l)	Ethanol (µg/l)	TOC ¹ (feet)	Depth to GW (feet)	SPH (feet)	GW Elev. ¹ (feet)
MW-1	01/13/03	<250	<250	<750	<1	<1	<1	<1	<1	<5	<5	<5	<50	NA	324.45	32.70	0.00	291.75
MW-1	05/20/03	<250	<250	<500	<1	<1	<1	<1	<1	<5	<5	<5	<50	NA	324.45	31.91	0.00	292.54
MW-1	08/19/03	<250	<280	<560	<1	<1	<1	<1	<1	<5	<5	<5	<50	<5,000	324.45	32.65	0.00	291.80
MW-1	11/06/03	<250	<250	<500	<1	<1	<1	<1	<1	<5	<5	<5	<50	<5,000	324.45	33.13	0.00	291.32
MW-1	04/27/04	<250	<250	<500	<1	<1	<1	<1	<1	<5	<5	<5	<50	<5,000	324.45	31.35	0.00	293.10
MW-1	06/21/05	<50	<250	<500	<1	<1	<1	<1	<1	<2	<2	<5	<50	<5,000	324.45	32.82	0.00	291.63
MW-1	05/31/06	<50.0	<243	<485	<0.500	<0.500	<0.500	<3.00	<5.00	<1.00	<1.00	<1.00	<50.0	150	324.45	31.14	0.00	293.31
MW-1	07/13/07	59.0	<250	<500	<0.500	<0.500	<0.500	<3.00	<5.00	<1.00	<1.00	<1.00	<50.0	<250	324.45	31.60	0.00	292.85
MW-1	05/27/08	<50	<250	<500	<1	<1	<1	<1	<1	<1	<1	<1	<5	<5000	324.45	31.55	0.00	292.90
MW-1	03/23/09	<100	<100	<100	<0.50	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<10	<100	324.45	32.01	0.00	292.44
MW-2	01/13/03	<250	<250	<750	<1	<1	<1	<1	<1	<5	<5	<5	<50	NA	325.56	36.65	0.00	288.91
MW-2	05/20/03	<250	<250	<500	<1	<1	<1	<1	<1	<5	<5	<5	<50	NA	325.56	36.01	0.00	289.55
MW-2	08/19/03	<250	<280	<560	<1	<1	<1	<1	<1	<5	<5	<5	<50	<5,000	325.56	36.82	0.00	288.74
MW-2	11/06/03	<250	<250	<500	<1	<1	<1	<1	<1	<5	<5	<5	<50	<5,000	325.56	37.90	0.00	287.66
MW-2	04/27/04	<250	<250	<500	<1	<1	<1	<1	<1	<6	<5	<5	<50	<5,000	325.56	35.44	0.00	290.12
MW-2	06/21/05	<50	<250	<500	<1	<1	<1	<1	<1	<2	<2	<5	<50	<5,000	325.56	36.80	0.00	288.76
MW-2	05/31/06	76.2	<243	<485	<0.500	<0.500	<0.500	<3.00	<5.00	<1.00	<1.00	<1.00	<50.0	150	325.56	35.30	0.00	290.26
MW-2	07/13/07	85.0	<250	<500	<0.500	<0.500	<0.500	<3.00	<5.00	<1.00	<1.00	<1.00	<50.0	<250	325.56	35.62	0.00	289.94
MW-2	05/27/08	69	<250	<500	<1	<1	<1	<1	<1	<1	<1	<1	<5	<5000	325.56	35.60	0.00	289.96
MW-2	03/23/09	<100	<100	<100	<0.50	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<10	<100	325.56	36.11	0.00	289.45
MW-3	01/13/03	300	<250	<750	<1	<1	<1	<1	<1	<5	<5	<5	<50	NA	327.91	26.80	0.00	301.11
MW-3	05/20/03	<250	<250	<500	<1	<1	<1	<1	<1	<5	<5	<5	<50	NA	327.91	25.65	0.00	302.26
MW-3	08/19/03	<250	<280	<560	<1	<1	<1	<1	<1	<5	<5	<5	<50	<5,000	327.91	26.05	0.00	301.86
MW-3	11/06/03	<250	<250	<500	<1	<1	<1	<1	<1	<5	<5	<5	<50	<5,000	327.91	26.93	0.00	300.98
MW-3	04/27/04	<250	250	<500	<1	<1	<1	<1	<1	<5	<5	<5	<50	<5,000	327.91	24.87	0.00	303.04
MW-3	06/21/05	78	<250	<500	<1	<1	<1	<1	<1	<2	<2	<5	<50	<5,000	327.91	26.51	0.00	301.4
MW-3	05/31/06	116	<250	<500	<0.500	<0.500	<0.500	<3.00	<5.00	<1.00	<1.00	<1.00	<50.0	150	327.91	24.51	0.00	303.4
MW-3	07/13/07	173	<250	<500	<0.500	<0.500	<0.500	<3.00	<5.00	<1.00	<1.00	<1.00	<50.0	<250	327.91	24.92	0.00	302.99

TABLE 1
GROUNDWATER GAUGING AND ANALYTICAL DATA
 1505 NE 205th Street
 Shoreline, Washington

Sample ID	Sample Date	TPH-G (µg/l)	TPH-D (µg/l)	TPH-O (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	TBA (µg/l)	Ethanol (µg/l)	TOC ¹ (feet)	Depth to GW (feet)	SPH (feet)	GW Elev. ¹ (feet)
MW-3	05/27/08	100	<250	<500	<1	<1	<1	<1	<1	<1	<1	<1	<5	<5000	327.91	25.14	0.00	302.77
MW-3	03/23/09	<100	<100	<100	<0.50	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<10	<100	327.91	25.94	0.00	301.97
MTCA Method A Cleanup Levels:		1000²	500	500	5	1000	700	1000	20	-	-	-	-	-	-	-	-	-

Notes:
 µg/l = micrograms per liter
 TOC = Top of well casing elevation (feet)
 SPH = Separate-phase hydrocarbons
 TPH-G = Total Petroleum Hydrocarbons as Gasoline
 TPH-D = Total Petroleum Hydrocarbons as Diesel
 TPH-O = Total Petroleum Hydrocarbons as Oil
 MTBE = Methyl tert-butyl ether
 DIPE = Di-isopropyl ether
 ETBE = Ethyl tert-butyl ether
 TAME = tert-Amyl methyl ether
 TBA = t-Butyl Alcohol
 NA = Not analyzed
 <n = Below the detection limit
 TPH-D and TPH-O quantified using Northwest Method NWTPH-Dx
 TPH-G quantified using Northwest Method NWTPH-Gx
 BTEX Compounds, MTBE, DIPE, ETBE, TAME, and TBA analyzed using EPA Method 8260B
¹TOC elevation and groundwater elevation relative to Mean Sea Level
²MTCA Method A Cleanup Level for TPH-Gasoline is 800 µg/l if benzene is detectable in groundwater.

FIGURES

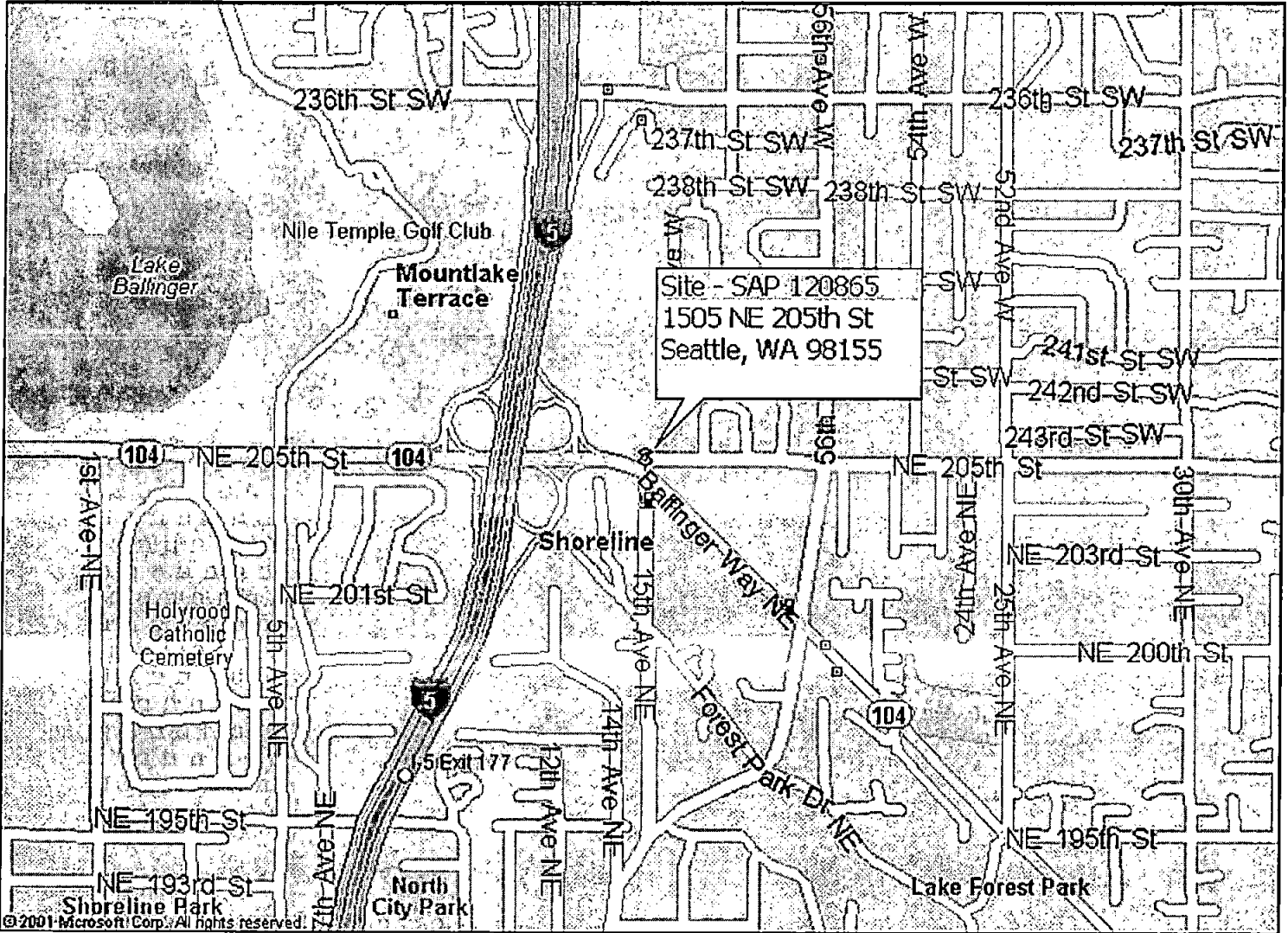


FIGURE 1

SITE LOCATION MAP

Shell Oil Products US - SAP 120865
 1505 NE 205th
 Seattle, Washington

PROJECT NO. SWA15-052-GA	DRAWN BY SB 5-17-04
FILE NO. 1	PREPARED BY SB
REVISION NO. 1	REVIEWED BY DL





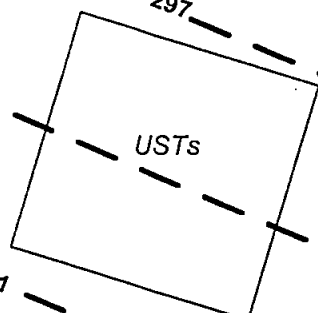
NORTHEAST 205TH STREET

SD

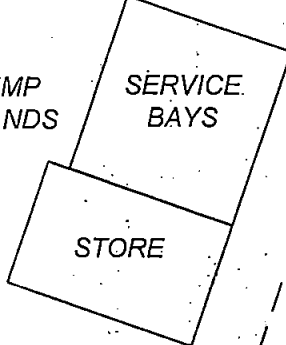
SD

CB₂

MW-1
(292.44)



MW-3
(301.97)



291

297

300

PUMP ISLANDS

SERVICE BAYS

STORE

294

BALLINGER ROAD NORTHEAST

CB₁

MW-2
(289.45)



APPROX. SCALE

Legend



MW-1

Groundwater Monitoring Well

(292.44)

Groundwater Elevation, March 23, 2009



290

Groundwater Elevation Contour, March 23, 2009

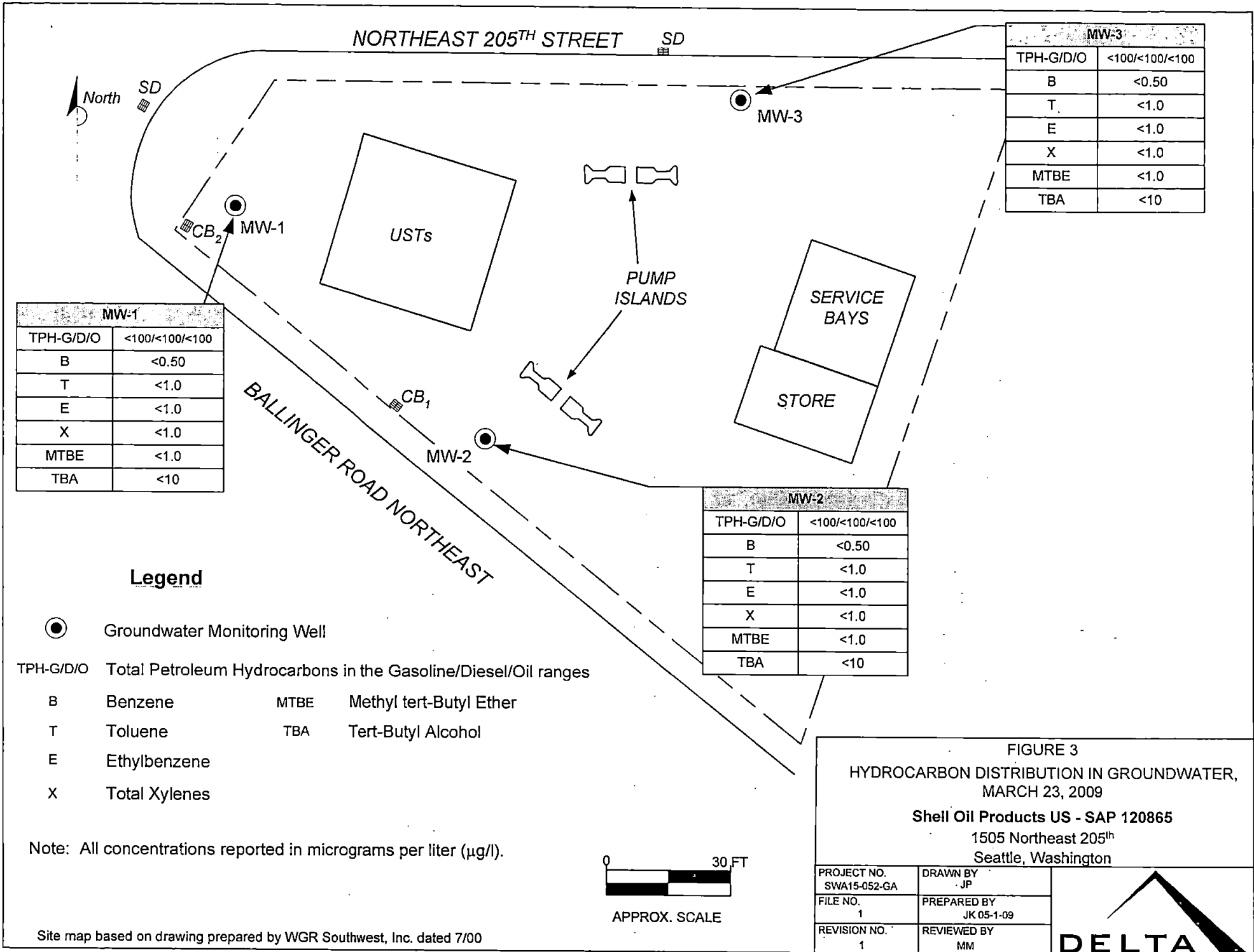
Site map based on drawing prepared by WGR Southwest, Inc. dated 7/00

FIGURE 2
GROUNDWATER ELEVATION CONTOUR MAP

Shell Oil Products US - SAP 120865
1505 Northeast 205th
Seattle, Washington

PROJECT NO. SWA15-052-GA	DRAWN BY JP
FILE NO. 1	PREPARED BY JK 5-1-09
REVISION NO. 1	REVIEWED BY MM





APPENDIX A
FIELD DATA SHEETS

GROUNDWATER SAMPLING FIELD SHEET

DELTA PROJECT NUMBER: <u>SWA15-052G-A</u>	CLIENT: <u>Shell</u>
SAP No./Incident No.: <u>120865/97420021</u>	PAGE: <u>1</u> of <u>1</u>
SITE ADDRESS/LOCATION: <u>1505 NE 205th Street, Seattle</u>	DATE: <u>3-22-09</u>
FIELD PERSONNEL: <u>Brian Pawley</u>	WEATHER: <u>RAINY</u>

Well ID	Time	Well Diameter (in.)	Depth to Bottom (feet)	Depth to Water (feet)	Depth to LPH (feet)	LPH Thickness (feet)	Calc. Purge (gal)	Actual Purge (gal)	Purge Method (B/LF/P)	Sample Appearance/Comments
MW-1	1745		36.20	32.01			2.01	2.00	B	
MW-2			39.50	36.11			1.63	2.00	B	
MW-3	1620			25.94					LF	

Additional Field Parameters: (Pre-Purge / Post-Purge / Low-flow Cell)

Well ID	pH	Conductivity (ms/cm)	Turbidity (NTU)	DO (mg/L)	Temp. (°C/°F)	TDS (g/L)	ORP (mV)	Comments
MW-1	6.05	0.155		5.92	11.85		205.8	too deep to use peristaltic
MW-2	6.15	0.197		2.80	10.69		194.3	too deep to use peristaltic
MW-3	7.03	0.144		7.66	12.42		184.7	
1625	6.79	0.140		7.52	12.79		186.3	
1630	6.74	0.139		7.44	12.82		185.1	

System Instructions:	Remedial System On-Site (Y/N)? <input checked="" type="checkbox"/>	Comments:
	Operational Upon Arrival (Y/N)?	Comments:
	Shut Down System 1 / 24 hours before gauging (Y/N)?	Time/Date Downed:
	Re-Start System (Y/N)?	Time/Date Restarted:
	Purge Method: <u>Low flow; peristaltic</u>	Comments:

Purge Water Disposal Method:

Treated through mobile carbon treatment unit and discharged on-site
 Placed in drums on site No. of drums: _____
 Transported off-site for treatment Facility/Location: _____

Measuring Device(s): bailer, YSI, peristaltic pump, tubing
water level indicator / interface probe

Job Clearance Form

CONTRACTOR INSTRUCTIONS PRIOR TO START OF WORK: Review form, check appropriate boxes, read and sign bottom of this form, inform dealer, manager, or site representative of the job to be performed and potential safety concerns, and obtain signature.

Station # 120865	Station Address: 1505 NE 205th Street, Seattle WA	Work Order Number:	Date: 3-23-09
Contractor Company Name: Delta Consultants	Contractor person in charge (print name): Matthew Miller <i>BrL PL</i>	Number of Workers:	JSA Reference Number:
Problem/Work Description:		Start Time:	End Time:
		Labor:	Travel Time:
		Travel Distance:	
		Return Call:	YES <input type="checkbox"/> NO <input type="checkbox"/>
		Damage Claim:	<input type="checkbox"/> <input type="checkbox"/>

PPE REQUIRED (CHECK AND/OR FILL BLANK SPACE)

<input type="checkbox"/> SAFETY VEST	<input type="checkbox"/> HARD HAT	<input type="checkbox"/> SHOES & BOOTS	<input type="checkbox"/> HEARING PROTECTION	<input type="checkbox"/> RESPIRATOR
<input type="checkbox"/> PROTECTIVE CLOTHING	<input type="checkbox"/> GLOVES	<input type="checkbox"/> SAFETY GLASSES/GOGGLES	<input type="checkbox"/> WELDING PPE	<input type="checkbox"/> OTHER:

Contractor to complete the section below if circumstances either on site or specific to this job may generate additional hazards that are not described in the JSA.

TASK STEP	Hazards not covered by JSA	How to reduce or eliminate risks to be worked

WORK DOCUMENTATION REQUIREMENTS: Lower Risk - no JSA required Medium Risk / Higher Risk - JSA required Higher Risk - JSA required & appropriate checklist completed (see below)

Examples of Higher / Medium risk tasks:

<input type="checkbox"/> Work at heights: in all cases on open sites - on closed sites if no JSA present	<input type="checkbox"/> Work in confined spaces (e.g. tank, interceptor or deep manhole entry)
<input type="checkbox"/> Trenching or excavation related to underground tank / product line	<input type="checkbox"/> Hot work with risk of product or vapor ignition
<input type="checkbox"/> Heavy lifting	<input type="checkbox"/> LPG system degassing, installation or maintenance

This form must be completed for each job and updated and re-signed if circumstances change or additional hazards identified.

SIGN IN	Contractor representative name <i>BrL PL</i> Brian Pauley	Signature	SIGN OUT	Contractor signature <i>BrL PL</i>
Operating sites: to be signed by the Site Representative Non-operating sites: to be signed by the Contractor Representative only			GENERAL SAFETY CHECKS	
GENERAL SAFETY CHECKS	Site Representative Name <i>SP</i>	Signature	- Has the work area been left tidy and safe?	
- Have all site personnel been informed?			- Are site personnel aware of status of work including remaining isolation?	
- Has fuel delivery service been informed?			- Are changes to equipment documented and communicated?	
- Is a fuel delivery due?			- Other?	
- Have isolation procedures been agreed - lock out/tag out?				
- Are work areas cordoned off to protect workers, site staff & public?				
- Other?				

PARTS - Ordered, replaced, and/or disposed of (Include model and serial #'s as appropriate)

The contractor, through its authorized representative, shall sign, issue, and be solely responsible for all job clearance forms and the obligations arising there under applicable to the work. This form covers important reminders and is not intended to relieve contractor from safely performing the work in compliance with all applicable laws and regulations. The Site Representative may require the contractor to stop work if it appears that the contractor or any of its workers are failing to comply with the requirements in the applicable items of this form or other applicable safety requirements.



FIELD ACTIVITY LOG

DATE: 3-23-09

Beginning Odometer:

PROJECT

Ending Odometer:

NUMBER: SWA 15-054-A

FIELD ACTIVITY SUBJECT:

RECORDED BY:
Brian Pawley

REVIEWED BY:

TIME DESCRIPTION OF ACTIVITIES AND EVENTS

SKETCH:

1545 arrive onsite
Read & sign HSP, JSA
and Job Clearance form

1630 gauge, micropipe, sample
MW-3

gauge, pipe, sample MW-2, well too
deep to use peristaltic pump

1745 gauge, pipe, sample MW-1, well too
deep to use peristaltic pump

WEATHER CONDITIONS:
windy - rainy - cold

CHANGES IN PLANS, SPECS., NEW ISSUES, FOLLOW UP NEEDED

AMBIENT AIR MONITORING:

VISITORS ONSITE:

TELEPHONE CALLS:

DELTA PERSONNEL ONSITE:
Brian Pawley



Delta
Environmental
Consultants, Inc.

WASTE INVENTORY RECORD

Project No. SWA 15-05 G-A

Location/SS# 1505 NE 205th St
Seattle

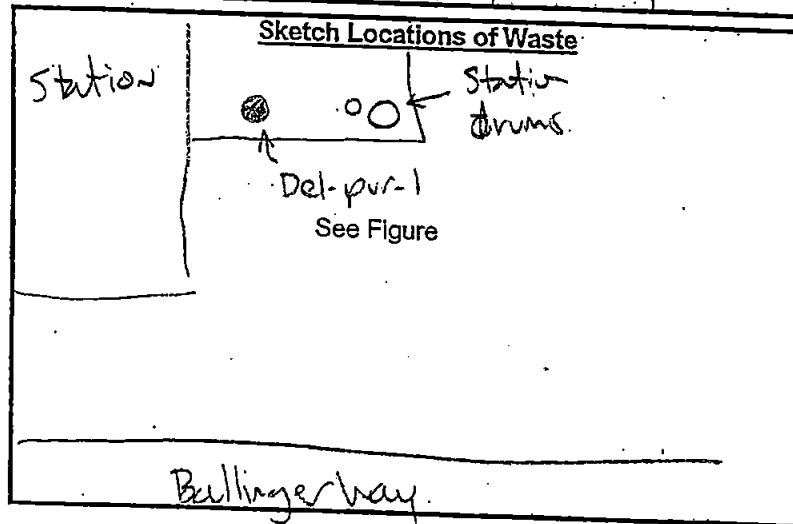
Date Generated 3-23-09

Client

Shell

Date Removed

Well or Boring ID	Depth (Interval) Feet	Type of Waste	Waste Volume <small>55-gallon drum</small>	Date Generated	Drum & ID or Stock Pile and Designation	pH # <small>Water only</small>	Comments <small>(wet, odor, chemical constituents, etc.)</small>
MW-1		pregn water	~ 5 gal	3-23-09	Del-pur-1	6.05 - 7.03	



Stock Pile on Site & Volume

Total Number of Drums at Site

3 drums on site

APPENDIX B

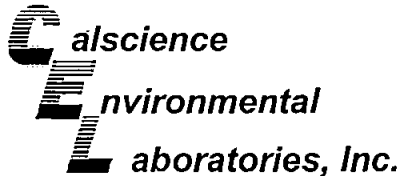
FIELD PROCEDURES

GROUNDWATER MONITORING AND SAMPLING

Before the sampling event, Delta measured depth to water in each groundwater monitoring well at the facility with an electronic water level meter. This information was recorded on waterproof field sheets. Groundwater elevations (GWE) were measured to an accuracy of 0.01 feet. Samples were withdrawn from monitoring wells MW-1 and MW-2 using a disposable polyethylene bailer and placed in the appropriate laboratory-provided container. Samples were withdrawn from monitoring well MW-3 using a low-flow/low-purge technique with a peristaltic pump. Field parameters of pH, dissolved oxygen (DO), and temperature were collected during sampling. Samples were labeled, placed into ice filled coolers, logged onto chain-of-custody forms and transported to the laboratory.

APPENDIX C

**LABORATORY REPORT AND
CHAIN-OF-CUSTODY DOCUMENTS**



April 08, 2009

Matthew Miller
Delta Consultants
4006 148th Ave., NE
Redmond, WA 98052-5165

Subject: **Calscience Work Order No.: 09-03-2306**
Client Reference: **1505 NE 205th Street, Seattle, WA**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 3/26/2009 and analyzed in accordance with the attached chain-of-custody.

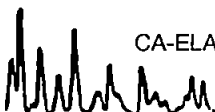
Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

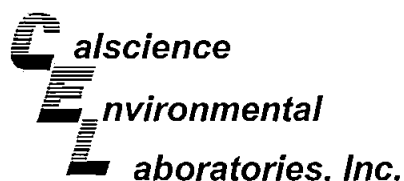
If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink that reads "Phillip Samelle for". The signature is written in a cursive, flowing style.

Calscience Environmental
Laboratories, Inc.
Jessie Kim
Project Manager





Analytical Report



Delta Consultants
4006 148th Ave., NE
Redmond, WA 98052-5165

Date Received: 03/26/09
Work Order No: 09-03-2306
Preparation: EPA 5030B
Method: NWTPH-Gx

Project: 1505 NE 205th Street, Seattle, WA

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	09-03-2306-1-C	03/23/09 17:45	Aqueous	GC 25	04/02/09	04/03/09 00:28	090402B01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	100	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	78	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-03-2306-2-C	03/23/09 17:10	Aqueous	GC 25	04/03/09	04/03/09 19:11	090403B01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	100	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	77	38-134			

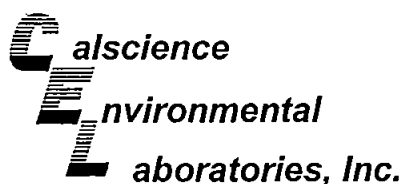
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	09-03-2306-3-C	03/23/09 16:40	Aqueous	GC 25	04/03/09	04/03/09 18:03	090403B01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	100	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	76	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-743-198	N/A	Aqueous	GC 25	04/03/09	04/03/09 09:33	090403B01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	100	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	75	38-134			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Delta Consultants
 4006 148th Ave., NE
 Redmond, WA 98052-5165

Date Received: 03/26/09
 Work Order No: 09-03-2306
 Preparation: EPA 5030B
 Method: NWTPH-Gx

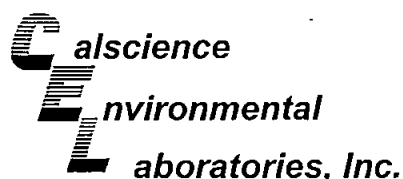
Project: 1505 NE 205th Street, Seattle, WA

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-743-200	N/A	Aqueous	GC 25	04/02/09	04/02/09 12:01	090402B01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	100	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	57	38-134			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Delta Consultants
4006 148th Ave., NE
Redmond, WA 98052-5165

Date Received: 03/26/09
Work Order No: 09-03-2306
Preparation: EPA 3510C
Method: NWTPH-Dx
Units: ug/L

Project: 1505 NE 205th Street, Seattle, WA

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	09-03-2306-1-G	03/23/09 17:45	Aqueous	GC 27	03/26/09	03/28/09 12:46	090326B05

Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	ND	100	1		TPH as Motor Oil Range	ND	100	1	
Surrogates:	REC (%)	Control Limits		Qual					
Decachlorobiphenyl	118	68-140							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-03-2306-2-G	03/23/09 17:10	Aqueous	GC 27	03/26/09	03/28/09 01:04	090326B05

Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	ND	100	1		TPH as Motor Oil Range	ND	100	1	
Surrogates:	REC (%)	Control Limits		Qual					
Decachlorobiphenyl	120	68-140							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	09-03-2306-3-G	03/23/09 16:40	Aqueous	GC 27	03/26/09	03/28/09 01:21	090326B05

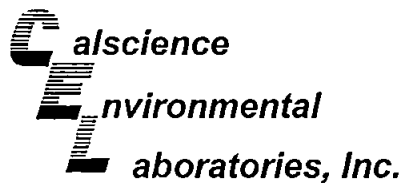
Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	ND	100	1		TPH as Motor Oil Range	ND	100	1	
Surrogates:	REC (%)	Control Limits		Qual					
Decachlorobiphenyl	113	68-140							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-840-69	N/A	Aqueous	GC 27	03/26/09	03/27/09 11:51	090326B05

Parameter	Result	RL	DF	Qual
TPH as Diesel Range	ND	100	1	
Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	107	68-140		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Delta Consultants
4006 148th Ave., NE
Redmond, WA 98052-5165

Date Received: 03/26/09
Work Order No: 09-03-2306
Preparation: N/A
Method: EPA 8015B(M)

Project: 1505 NE 205th Street, Seattle, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	09-03-2306-1-E	03/23/09 17:45	Aqueous	GC 12	N/A	03/27/09 16:21	090327L01

Parameter	Result	RL	DF	Qual	Units
Ethanol	ND	0.10	1		mg/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Hexafluoro-2-propanol	92	63-147			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-03-2306-2-E	03/23/09 17:10	Aqueous	GC 12	N/A	03/27/09 16:44	090327L01

Parameter	Result	RL	DF	Qual	Units
Ethanol	ND	0.10	1		mg/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Hexafluoro-2-propanol	88	63-147			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	09-03-2306-3-E	03/23/09 16:40	Aqueous	GC 12	N/A	03/27/09 17:07	090327L01

Parameter	Result	RL	DF	Qual	Units
Ethanol	ND	0.10	1		mg/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Hexafluoro-2-propanol	92	63-147			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-006-2,855	N/A	Aqueous	GC 12	N/A	03/27/09 12:31	090327L01

Parameter	Result	RL	DF	Qual	Units
Ethanol	ND	0.10	1		mg/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Hexafluoro-2-propanol	107	63-147			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Delta Consultants
 4006 148th Ave., NE
 Redmond, WA 98052-5165

Date Received: 03/26/09
 Work Order No: 09-03-2306
 Preparation: EPA 5030B
 Method: EPA 8260B
 Units: ug/L

Project: 1505 NE 205th Street, Seattle, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	09-03-2306-1-A	03/23/09 17:45	Aqueous	GC/MS X	04/02/09	04/03/09 09:20	090402L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Ethylbenzene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
Toluene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Xylenes (total)	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
Dibromofluoromethane	100	82-130			1,2-Dichloroethane-d4	102	75-141		
Toluene-d8	98	83-113			1,4-Bromofluorobenzene	96	70-118		

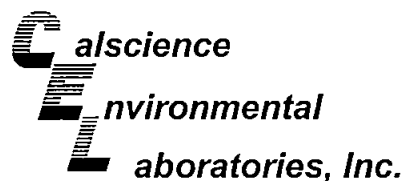
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-03-2306-2-A	03/23/09 17:10	Aqueous	GC/MS X	04/02/09	04/03/09 09:49	090402L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Ethylbenzene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
Toluene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Xylenes (total)	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
Dibromofluoromethane	96	82-130			1,2-Dichloroethane-d4	105	75-141		
Toluene-d8	101	83-113			1,4-Bromofluorobenzene	95	70-118		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	09-03-2306-3-B	03/23/09 16:40	Aqueous	GC/MS X	04/03/09	04/03/09 18:26	090403L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Ethylbenzene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
Toluene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Xylenes (total)	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
Dibromofluoromethane	98	82-130			1,2-Dichloroethane-d4	109	75-141		
Toluene-d8	100	83-113			1,4-Bromofluorobenzene	98	70-118		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Delta Consultants
4006 148th Ave., NE
Redmond, WA 98052-5165

Date Received: 03/26/09
Work Order No: 09-03-2306
Preparation: EPA 5030B
Method: EPA 8260B
Units: ug/L

Project: 1505 NE 205th Street, Seattle, WA

Page 2 of 2

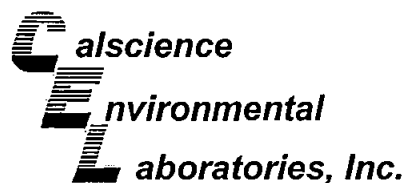
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-10-006-29,017	N/A	Aqueous	GC/MS X	04/02/09	04/03/09 04:36	090402L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Ethylbenzene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
Toluene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Xylenes (total)	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
Dibromofluoromethane	99	82-130			1,2-Dichloroethane-d4	103	75-141		
Toluene-d8	99	83-113			1,4-Bromofluorobenzene	97	70-118		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-10-006-29,023	N/A	Aqueous	GC/MS X	04/03/09	04/03/09 13:31	090403L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Ethylbenzene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
Toluene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Xylenes (total)	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
Dibromofluoromethane	100	82-130			1,2-Dichloroethane-d4	106	75-141		
Toluene-d8	98	83-113			1,4-Bromofluorobenzene	99	70-118		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Quality Control - Spike/Spike Duplicate



Delta Consultants
 4006 148th Ave., NE
 Redmond, WA 98052-5165

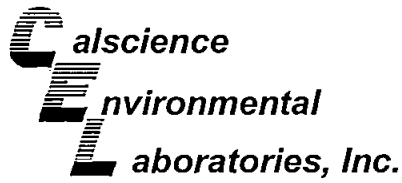
Date Received: 03/26/09
 Work Order No: 09-03-2306
 Preparation: EPA 5030B
 Method: EPA 8015B (M)

Project 1505 NE 205th Street, Seattle, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-03-2535-6	Aqueous	GC 25	04/02/09	04/02/09	090402S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	98	101	68-122	3	0-18	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - Spike/Spike Duplicate



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Redmond, WA 98052-5165

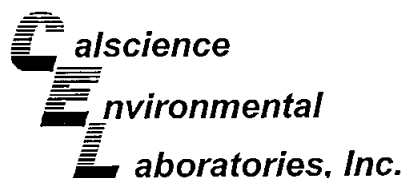
Date Received: 03/26/09
Work Order No: 09-03-2306
Preparation: EPA 5030B
Method: NWTPH-Gx

Project 1505 NE 205th Street, Seattle, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-03-2289-2	Aqueous	GC 25	04/03/09	04/03/09	090403S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	103	104	68-122	2	0-18	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - Spike/Spike Duplicate



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Redmond, WA 98052-5165

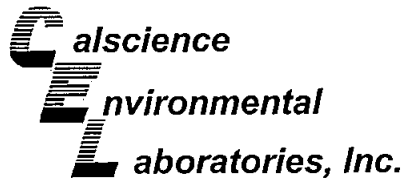
Date Received: 03/26/09
Work Order No: 09-03-2306
Preparation: N/A
Method: EPA 8015B(M)

Project 1505 NE 205th Street, Seattle, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-03-2335-1	Aqueous	GC 12	N/A	03/27/09	090327S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Ethanol	92	98	73-109	7	0-23	
Methanol	79	92	64-118	15	0-20	
Isopropanol	88	104	70-130	17	0-25	
2-Butanol	91	100	70-130	10	0-25	

RPD - Relative Percent Difference, CL - Control Limit



Quality Control - Spike/Spike Duplicate



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Redmond, WA 98052-5165

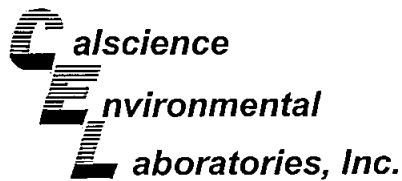
Date Received: 03/26/09
Work Order No: 09-03-2306
Preparation: EPA 5030B
Method: EPA 8260B

Project 1505 NE 205th Street, Seattle, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-03-2560-1	Aqueous	GC/MS X	04/02/09	04/02/09	090402S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	90	90	88-118	0	0-7	
Toluene	95	94	87-123	1	0-8	
Ethylbenzene	98	96	70-130	1	0-30	
Methyl-t-Butyl Ether (MTBE)	93	93	71-131	0	0-13	
Tert-Butyl Alcohol (TBA)	90	92	36-168	2	0-45	
Diisopropyl Ether (DIPE)	93	94	81-123	1	0-9	
Ethyl-t-Butyl Ether (ETBE)	94	94	72-126	0	0-12	
Tert-Amyl-Methyl Ether (TAME)	94	93	72-126	1	0-12	
Ethanol	97	86	53-149	12	0-31	
1,1-Dichloroethene	90	92	70-130	3	0-25	
1,2-Dibromoethane	95	94	70-130	1	0-30	
1,2-Dichlorobenzene	93	94	86-116	2	0-8	
Carbon Tetrachloride	79	84	67-145	6	0-11	
Chlorobenzene	95	94	88-118	1	0-7	
Trichloroethene	89	89	79-127	1	0-10	
Vinyl Chloride	94	94	69-129	1	0-13	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - Spike/Spike Duplicate



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4006 148th Ave., NE
Redmond, WA 98052-5165

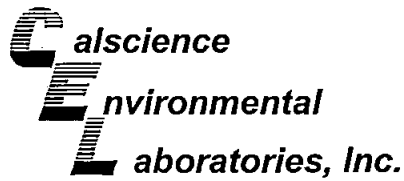
Date Received: 03/26/09
Work Order No: 09-03-2306
Preparation: EPA 5030B
Method: EPA 8260B

Project 1505 NE 205th Street, Seattle, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-03-2702-3	Aqueous	GC/MS X	04/03/09	04/03/09	090403S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	90	92	88-118	2	0-7	
Carbon Tetrachloride	72	75	67-145	4	0-11	
Chlorobenzene	93	94	88-118	1	0-7	
1,2-Dibromoethane	96	96	70-130	1	0-30	
1,2-Dichlorobenzene	92	93	86-116	2	0-8	
1,1-Dichloroethene	95	97	70-130	3	0-25	
Ethylbenzene	95	97	70-130	2	0-30	
Toluene	95	97	87-123	2	0-8	
Trichloroethene	39	48	79-127	4	0-10	3
Vinyl Chloride	87	92	69-129	6	0-13	
Methyl-t-Butyl Ether (MTBE)	96	99	71-131	3	0-13	
Tert-Butyl Alcohol (TBA)	90	90	36-168	1	0-45	
Diisopropyl Ether (DIPE)	97	100	81-123	3	0-9	
Ethyl-t-Butyl Ether (ETBE)	96	98	72-126	2	0-12	
Tert-Amyl-Methyl Ether (TAME)	94	96	72-126	2	0-12	
Ethanol	95	106	53-149	11	0-31	

RPD - Relative Percent Difference, CL - Control Limit



Quality Control - LCS/LCS Duplicate



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4006 148th Ave., NE
Redmond, WA 98052-5165

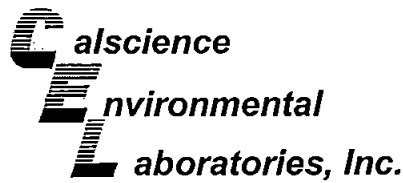
Date Received: N/A
Work Order No: 09-03-2306
Preparation: EPA 5030B
Method: NWTPH-Gx

Project: 1505 NE 205th Street, Seattle, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-743-200	Aqueous	GC 25	04/02/09	04/02/09	090402B01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	99	98	78-120	1	0-10	

RPD - Relative Percent Difference, CL - Control Limit



Quality Control - LCS/LCS Duplicate



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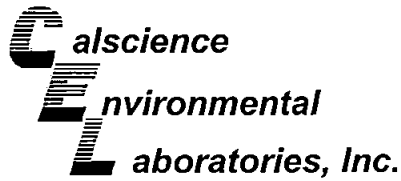
Date Received: N/A
 Work Order No: 09-03-2306
 Preparation: EPA 5030B
 Method: NWTPH-Gx

Project: 1505 NE 205th Street, Seattle, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-743-198	Aqueous	GC 25	04/03/09	04/03/09	090403B01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	103	106	78-120	3	0-10	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - LCS/LCS Duplicate



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4006 148th Ave., NE
Redmond, WA 98052-5165

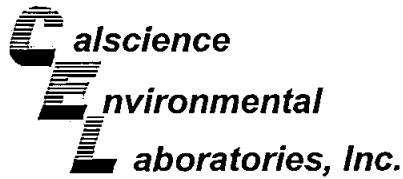
Date Received: N/A
Work Order No: 09-03-2306
Preparation: EPA 3510C
Method: NWTPH-Dx

Project: 1505 NE 205th Street, Seattle, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-840-69	Aqueous	GC 27	03/26/09	03/28/09	090326B05

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Diesel Range	103	101	75-117	2	0-13	

RPD - Relative Percent Difference, CL - Control Limit



Quality Control - LCS/LCS Duplicate



Delta Consultants
4006 148th Ave., NE
Redmond, WA 98052-5165

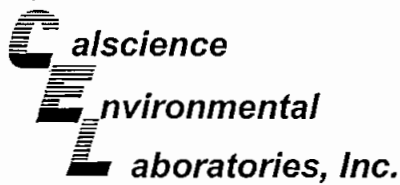
Date Received: N/A
Work Order No: 09-03-2306
Preparation: N/A
Method: EPA 8015B(M)

Project: 1505 NE 205th Street, Seattle, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-006-2,855	Aqueous	GC 12	N/A	03/27/09	090327L01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Ethanol	104	89	76-112	16	0-19	
Methanol	100	93	69-117	8	0-22	
2-Butanol	105	95	70-130	10	0-25	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - LCS/LCS Duplicate



Delta Consultants
4006 148th Ave., NE
Redmond, WA 98052-5165

Date Received: N/A
Work Order No: 09-03-2306
Preparation: EPA 5030B
Method: EPA 8260B

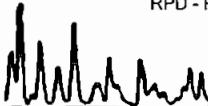
Project: 1505 NE 205th Street, Seattle, WA

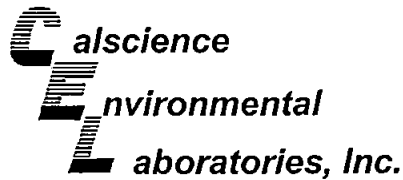
Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-10-006-29,017	Aqueous	GC/MS X	04/02/09	04/03/09	090402L02

Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	97	99	84-120	78-126	2	0-8	
Carbon Tetrachloride	88	92	63-147	49-161	4	0-10	
Chlorobenzene	102	101	89-119	84-124	1	0-7	
1,2-Dibromoethane	98	96	80-120	73-127	2	0-20	
1,2-Dichlorobenzene	98	95	89-119	84-124	4	0-9	
1,1-Dichloroethene	103	104	77-125	69-133	1	0-16	
Ethylbenzene	106	106	80-120	73-127	0	0-20	
Toluene	102	104	83-125	76-132	3	0-9	
Trichloroethene	107	108	89-119	84-124	1	0-8	
Vinyl Chloride	106	112	63-135	51-147	6	0-13	
Methyl-t-Butyl Ether (MTBE)	93	92	82-118	76-124	1	0-13	
Tert-Butyl Alcohol (TBA)	90	89	46-154	28-172	1	0-32	
Diisopropyl Ether (DIPE)	97	97	81-123	74-130	0	0-11	
Ethyl-t-Butyl Ether (ETBE)	97	95	74-122	66-130	2	0-12	
Tert-Amyl-Methyl Ether (TAME)	93	94	76-124	68-132	1	0-10	
Ethanol	85	100	60-138	47-151	16	0-32	

Total number of LCS compounds : 16
 Total number of ME compounds : 0
 Total number of ME compounds allowed : 1
 LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Delta Consultants
4006 148th Ave., NE
Redmond, WA 98052-5165

Date Received: N/A
Work Order No: 09-03-2306
Preparation: EPA 5030B
Method: EPA 8260B

Project: 1505 NE 205th Street, Seattle, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-10-006-29,023	Aqueous	GC/MS X	04/03/09	04/03/09	090403L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	91	94	84-120	78-126	3	0-8	
Carbon Tetrachloride	73	80	63-147	49-161	10	0-10	
Chlorobenzene	94	99	89-119	84-124	4	0-7	
1,2-Dibromoethane	93	100	80-120	73-127	8	0-20	
1,2-Dichlorobenzene	95	96	89-119	84-124	2	0-9	
1,1-Dichloroethene	97	102	77-125	69-133	5	0-16	
Ethylbenzene	97	100	80-120	73-127	3	0-20	
Toluene	96	98	83-125	76-132	2	0-9	
Trichloroethene	90	95	89-119	84-124	6	0-8	
Vinyl Chloride	96	93	63-135	51-147	3	0-13	
Methyl-t-Butyl Ether (MTBE)	94	98	82-118	76-124	4	0-13	
Tert-Butyl Alcohol (TBA)	87	90	46-154	28-172	3	0-32	
Diisopropyl Ether (DIPE)	95	98	81-123	74-130	3	0-11	
Ethyl-t-Butyl Ether (ETBE)	95	97	74-122	66-130	2	0-12	
Tert-Amyl-Methyl Ether (TAME)	93	95	76-124	68-132	2	0-10	
Ethanol	101	89	60-138	47-151	13	0-32	

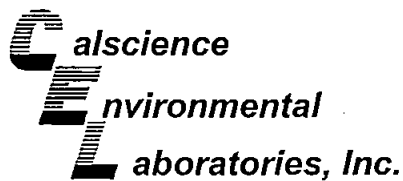
Total number of LCS compounds : 16

Total number of ME compounds : 0

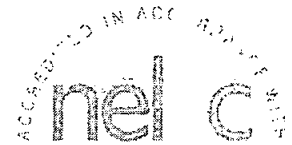
Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit



Glossary of Terms and Qualifiers



Work Order Number: 09-03-2306

<u>Qualifier</u>	<u>Definition</u>
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Delta Consultants

DATE: 3/26/09

TEMPERATURE: (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 3.6 °C - 0.2 °C (CF) = 3.4 °C Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____).

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: Air Filter Metals Only PCBs Only Initial: JP

CUSTODY SEALS INTACT:

Cooler _____ No (Not Intact) Not Present N/A Initial: JP

Sample _____ No (Not Intact) Not Present Initial: BR

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
<input type="checkbox"/> COC not relinquished. <input checked="" type="checkbox"/> No date relinquished. <input checked="" type="checkbox"/> No time relinquished.			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Correct containers and volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE:

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve EnCores® TerraCores® _____

Water: VOA VOA^sh VOAna₂ 125AGB 125AGBh 125AGBpo₄ 1AGB 1AGBna₂

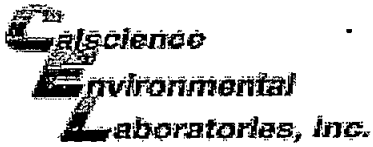
1AGBs 500AGB 500AGBs 250CGB 250CGBs 1PB 500PB 500PBna 250PB

250PBn 125PB 125PBz₂na 100PBsterile 100PBna₂ _____ _____ _____

Air: Tedlar® Summa® _____ **Sludge/Other:** _____ **Checked/Labeled by:** BR

Container: C:Clear A:Amber P:Poly/Plastic G:Glass J:Jar B: Bottle **Reviewed by:** WSC

Preservative: h:HCL n:HNO₃ na₂:Na₂S₂O₃ na:NaOH p:H₃PO₄ s:H₂SO₄ z₂na:ZnAc₂+NaOH **Scanned by:** BR



SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

- Samples NOT RECEIVED but listed on COC
- Samples received but NOT LISTED on COC
- Holding time expired – list sample ID(s) and test
- Insufficient quantities for analysis – list test
- Improper container(s) used – list test
- No preservative noted on COC or label – list test & notify lab
- Sample labels illegible – note test/container type
- Sample labels do not match COC – Note in comments
 - Sample ID
 - Date and/or Time Collected
 - Project Information
 - # of containers
- Sample containers compromised – Note in comments
 - Leaking
 - Broken
 - Without Labels
- Air sample containers compromised – Note in comments
 - Flat
 - Very low in volume
 - Leaking (transferred into Calscience Tedlar® Bag*)
 - Leaking (transferred into Client's Tedlar® Bag*)
- Other: _____

Comments:

(-1) Received lot of 5 Vials broken

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of RSK or CO ₂ or DO Received

Comments: _____

*Transferred at Client's request.

Initial / Date BF 3/26/09