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**REPORT
LIMITED SOIL INVESTIGATION
FORMER GROUP HEALTH DSSF
TCP ID# NW1770
801 SW 16TH STREET
RENTON, WASHINGTON**

**PREPARED FOR:
GROUP HEALTH COOPERATIVE**

**URS JOB NO. 33761923
June 22, 2010**

June 22, 2010

Mr. Frank DiSanto
Facilities Manager – Group Health
CB Richard Ellis | Global Corporate Services
140 SW 146th Street
Seattle, WA 98166

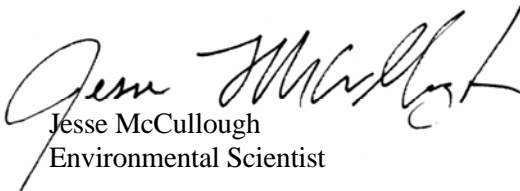
Report
Limited Soil Investigation
Former Group Health DSSF
TCP ID# NW1770
801 SW 16th Street
Renton, Washington
URS Job No.: 33761923


Dear Mr. DiSanto:

This report presents the results of the Limited Soil Investigation performed at the above referenced property in Renton, Washington. This work was conducted at the request of Ms. Jing Liu of the Washington State Department of Ecology. The investigation was conducted in general accordance with our proposal dated January 8, 2010.

We trust this report meets your current requirements. If you have any questions or require additional information please feel free to contact us.

Very truly yours,
URS CORPORATION


Jesse McCullough
Environmental Scientist


David Raubvogel
Senior Geologist, LHG

Copy: Ms. Jing Liu, Washington State Department of Ecology

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1.0 INTRODUCTION AND BACKGROUND

This report presents the results of URS Corporation's (URS) Limited Soil Investigation conducted at the Former Group Health Distribution Support Services Facility (DSSF) property located at 801 SW 16th Street in Renton, Washington (subject property; Figure 1). Contaminated soil was initially identified in 1991 during removal of an underground storage tank (UST). Impacted soils were identified from approximately 4 to 14.5 feet below ground surface (bgs). Remedial actions at the facility have included soil excavation, soil vapor extraction (SVE), groundwater pump and treatment and bioremediation (e.g., oxygen release compound).

Groundwater monitoring was conducted at the site from 1997 through 2007 and gasoline constituent concentrations declined to below regulatory cleanup levels. In July 2007, following a request for No Further Action (NFA) by URS, Ms. Jing Liu of the Washington Department of Ecology (Ecology) indicated that four consecutive post-remediation groundwater sampling events, with results meeting the Model Toxic Control Act (MTCA) Method A cleanup levels, would be required prior to issuance of a NFA determination. Prior to the 2007 request for NFA, benzene had not been detected above regulatory cleanup levels since October 2005, where it was identified in MW-13 at a concentration of 6.04 micrograms per liter ($\mu\text{g/L}$). URS performed quarterly groundwater monitoring from October 2007 to October 2008 (Table 1). Gasoline-range petroleum hydrocarbons and related constituents (benzene, toluene, ethylbenzene, and total xylenes ([BTEX]) were either not detected above their respective laboratory reporting limits or were below MTCA Method A cleanup levels, with the exception of benzene, which was detected slightly above the MTCA Method A cleanup level in MW-13 during two of the four quarterly sampling events ($7.27 \mu\text{g/L}$ in July 2008 and $5.75 \mu\text{g/L}$ in October 2008). Benzene was detected below the MTCA Method A cleanup level during the April 2008 ($3.41 \mu\text{g/L}$) sampling event and was not detected during the January 2008 sampling event. The average benzene concentration detected during the four quarterly sampling events was $4.17 \mu\text{g/L}$.

URS presented the quarterly groundwater monitoring results to Ecology (URS, 2009) and concerns were raised that residual soil contamination may be present in the native soils surrounding the former remedial excavation which were the cause of the slight benzene exceedance in the MTCA Method A cleanup level noted in MW-13. To address this concern, Ecology requested that soil sampling be conducted around the perimeter of the remedial excavation to evaluate if elevated levels of benzene remain in the site soils.

2.0 OBJECTIVES AND SCOPE

The primary objective of the Limited Soil Investigation was to assess if residual gasoline-range petroleum hydrocarbon and BTEX remain in the soil adjacent to the former UST location which could be a continuing source of contamination to groundwater. To achieve this objective, URS implemented the following scope of work:

- Advanced seven soil borings (B1 through B7) at selected locations reviewed and approved by Ecology using a limited access hydraulic push probe rig.

- Collection of soil samples from each boring for analysis of BTEX by EPA Method 8021B and gasoline range petroleum hydrocarbons by Method NWTPH-Gasoline extended (Gx).
- Preparation of this report presenting our findings and conclusions.

The following sections provide a description of the field procedures and specific approach utilized in this investigation.

3.0 METHODS OF INVESTIGATION

3.1 SAMPLING LOCATION RATIONALE

Prior to final selection of the boring locations, URS obtained Ecology's feedback regarding the proposed placement of these borings. The approved soil boring locations are shown on Figure 2. Boring locations B1 through B3 were drilled outside of the building along the western (downgradient) edge of the former UST excavation. Borings B4 through B7 were drilled within the warehouse along the perimeter of the former excavation. Borings B-6 and B-7 were drilled adjacent to MW-13, the only monitoring well having groundwater benzene levels slightly exceeding MTCA Method A cleanup levels.

3.2 DRILLING AND SAMPLING PROCEDURES

Prior to implementing the investigation, the One Call utility notification service was contacted to demark the public utilities to the property boundary. URS contracted Applied Professional Services, Inc. (APS) of North Bend, Washington, to complete a site-specific utility clearance within the property boundary. APS located existing utilities on the property and cleared the soil boring locations.

The drilling program was completed by Cascade Drilling, Inc. of Woodinville, Washington on May 8, 2010. The borings were advanced using a limited access push probe drilling rig. Soil samples were collected continuously and were field screened using a photoionization detector (PID). Two soil samples were collected from each boring, one above and one within the saturated zone. The PID readings were recorded on boring logs, which are provided in Appendix A. The soil samples were collected directly from acetate liners and placed into laboratory-supplied glassware. The sample glassware was placed into a cooler with ice and submitted to the laboratory under chain of custody protocol. All down-hole soil sampling equipment was decontaminated prior to use by washing with a dilute Alconox detergent solution and triple rinsed with tap water. Decontamination water was placed in a clearly labeled container and left onsite pending laboratory analytical results.

3.3 ANALYTICAL METHODS

The soil samples were submitted for analysis to Fremont Analytical, Inc., an Ecology-accredited laboratory, located in Seattle, Washington. All of the samples were analyzed for BTEX by EPA Method 8021B and gasoline range petroleum hydrocarbons by Method NWTPH-Gx. The laboratory results along with the applicable Ecology MTCA Method A cleanup levels are summarized in Table 2. The analytical results were validated by a URS chemist. The laboratory analytical report is provided in Appendix B.

4.0 INVESTIGATION FINDINGS

4.1 SUBSURFACE CONDITIONS

The borings were completed to depths ranging from 8 to 12 feet bgs. Subsurface soils encountered consisted of fill material ranging from fine to coarse sand with silt and gravel overlying native alluvium consisting of silt and silty sand (Appendix A). Groundwater was generally encountered at the fill/alluvium interface at depths ranging from 3.5 to 11 feet bgs. The groundwater flow direction at the site has been documented to be westerly (URS, 2009). Some PID readings above background levels were noted in borings B4 through B7, but contamination (e.g., staining and/or petroleum hydrocarbon odors) was not evident in these borings during field screening. The soil field screening results are provided on the boring logs in Appendix A.

4.2 ANALYTICAL RESULTS

The soil sampling depths and analytical results are summarized in Table 2. None of the 14 soil samples analyzed detected gasoline range petroleum hydrocarbons or BTEX concentrations exceeding applicable MTCA Method A cleanup levels. Benzene and toluene were not detected above laboratory reporting limits in any of the soil samples. Ethylbenzene and total xylenes were detected in the soil sample collected at 7 feet bgs in B4 at concentrations of 60 micrograms per kilogram ($\mu\text{g}/\text{kg}$) and 160 $\mu\text{g}/\text{kg}$, respectively, which are below MTCA Method A cleanup levels. Gasoline range petroleum hydrocarbons were detected in borings B4 and B5 at concentrations ranging from 5.1 milligrams per kilogram (mg/kg) to 45 mg/kg , also below the MTCA Method A cleanup level of 100 mg/kg .

5.0 CONCLUSIONS & RECOMMENDATIONS

Based on the findings of the subsurface investigation and previous investigations conducted at the subject property, URS has drawn the following conclusions:

- Quarterly groundwater monitoring completed in 2008 indicated that benzene concentrations in one of the site monitoring wells (MW-13) ranged in concentration from not detected to 7.27 $\mu\text{g}/\text{L}$. Only two of the four quarterly sampling events (7.27 $\mu\text{g}/\text{L}$ in July and 5.75 $\mu\text{g}/\text{L}$ in October) exceeded the MTCA Method A cleanup level and the average benzene concentration detected during the 2007/2008 sampling events was 4.17 $\mu\text{g}/\text{L}$. Benzene concentrations in this well have fluctuated, but the levels of benzene have only slightly exceeded the MTCA Method A cleanup level. For example, during the period from December 2002 to October 2008, eight groundwater samples have been collected from MW-13. During this timeframe, the maximum benzene concentration detected in MW-13 was 7.99 $\mu\text{g}/\text{L}$ while four of the samples were either below the MTCA Method A cleanup level or below the laboratory reporting limit. The average benzene concentration detected in MW-13 during this period was 4.55 $\mu\text{g}/\text{L}$. Based on the declining trend noted in benzene concentrations (Figure 3), it is apparent that benzene will continue to naturally attenuate and is not considered to be a risk to groundwater quality as benzene concentrations in downgradient wells have been documented to be below cleanup levels.

- To assess if gasoline range petroleum hydrocarbon contamination was present in the soils beneath the building, a total of seven soil borings were completed around the perimeter of the former remedial excavation. Soil samples collected above and below the groundwater table did not detect benzene above the laboratory reporting limit in any of the soil borings. This includes soil borings B-6 and B-7, completed directly upgradient and downgradient of MW-13, respectively. TEX and gasoline range petroleum hydrocarbons were either not detected above their respective laboratory reporting limits or were below MTCA Method A cleanup levels.
- Based on the prior groundwater monitoring results and the recent soil investigation findings, no evidence of a benzene source has been identified in the soils adjacent to the remedial excavation area. This investigation has addressed Ecology's concerns regarding the potential for residual soil contamination and affects on the groundwater quality.

6.0 REFERENCES

URS Corporation, 2009. Letter Report, Groundwater Monitoring Results, Former Group Health DSSF, TCP #1770, 801 SW 16th Street, Renton, Washington. January 27.

TABLES

Table 1
Summary of Quarterly Groundwater Analytical Data (2007/2008)
Former Group Health DSSF
Renton, Washington

Monitoring Well	Sample Date	Volatile Organic Compounds (ug/L)				Gasoline Range Hydrocarbons (ug/L)
		Benzene	Toluene	Ethylbenzene	Xylenes	
MW-10	10/19/07	2.05	0.500 U	0.500 U	1.00 U	50.0 U
	1/15/08	1.46	0.500 U	0.500 U	1.00 U	50.0 U
	4/10/08	2.31	0.500 U	0.500 U	1.00 U	50.0 U
	7/29/08	2.48	0.500 U	0.500 U	1.00 U	50.0 U
MW-13 ¹	10/19/07	--	--	--	--	--
	1/15/08	0.500 U	0.500 U	0.500 U	1.20	50.0 U
	4/10/08	3.41	0.500 U	0.500 U	1.00 U	58.1
	7/29/08	7.27	0.500 U	0.500 U	1.00 U	66.6
	10/23/08	5.75	0.500 U	0.500 U	1.00 U	50.0 U
MW-25	10/19/07	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
	1/15/08	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
	4/10/08	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
	7/29/08	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
MW-26	10/19/07	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
	1/15/08	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
	4/10/08	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
	7/29/08	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
GWE-1 ²	10/19/07	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
	1/15/08	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
	4/10/08	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
	7/29/08	0.822	0.500 U	0.500 U	1.00 U	50.0 U
MTCA Method A Groundwater Cleanup Level		5.0	1,000	700	1,000	800 / 1,000 ³

Notes:

Numbers in **bold** font indicate the reported result exceeds the MTCA Method A cleanup level.

Model Toxics Control Act (MTCA) Cleanup Regulation, WAC 173-340. MTCA Method A values are from Ecology website CLARC tables downloaded November 2007. (<https://fortress.wa.gov/ecy/clarc/reporting/CLARCReporting.aspx>)

-- Not sampled.

U - Compound was analyzed for but not detected above the reporting limit shown.

¹ MW-13 was not sampled 10/19/07 because the well had been cemented over by the tenant. An additional sample was collected 10/23/08.

² GWE-1 groundwater sample from extraction well within former soil excavation.

³ The groundwater cleanup level is 1,000 ug/L if benzene is not present and the total of ethylbenzene, toluene, and xylenes is less than 1% of the gasoline mixture. The cleanup level for all other gasoline mixtures is 800 ug/L.

Table 2
Summary of Soil Analytical Results
Former Group Health DSSF
Renton, Washington

Boring ID	Sample Date	Sample Depth (feet bgs)	Volatile Organic Compounds (ug/kg)				Gasoline Range Hydrocarbons (mg/kg)
			Benzene	Toluene	Ethylbenzene	Xylenes	
B1	5/8/10	3	20 U	50 U	50 U	150 U	5 U
		4	20 U	50 U	50 U	150 U	5 U
B2	5/8/10	3	20 U	50 U	50 U	150 U	5 U
		4	20 U	50 U	50 U	150 U	5 U
B3	5/8/10	4	20 U	50 U	50 U	150 U	5 U
		8	20 U	50 U	50 U	150 U	5 U
B4	5/8/10	7	20 U	50 U	60	160	5.1
		11	20 U	50 U	50 U	150 U	10
B5	5/8/10	7	20 U	50 U	50 U	150 U	5 U
		11	20 U	50 U	50 U	150 U	45
B6	5/8/10	5	20 U	50 U	50 U	150 U	5 U
		11	20 U	50 U	50 U	150 U	5 U
B7	5/8/10	3	20 U	50 U	50 U	150 U	5 U
		10	20 U	50 U	50 U	150 U	5 U
MTCA Method A Soil Cleanup Level			30	7,000	6,000	9,000	30 / 100 ¹

Notes:

Numbers in **bold** font indicate the reported result exceeds the MTCA Method A cleanup level.

Model Toxics Control Act (MTCA) Cleanup Regulation, WAC 173-340. MTCA Method A values are from Ecology website CLARC tables downloaded May 2010. (<https://fortress.wa.gov/ecy/clarc/reporting/CLARCReporting.aspx>)

U - Compound was analyzed for but not detected above the reporting limit shown.

bgs - below ground surface

¹ The soil cleanup level is 100 mg/kg if benzene is not present and the total of ethylbenzene, toluene, and xylenes is less than 1% of the gasoline mixture. The cleanup level for all other gasoline mixtures is 30 mg/kg.

FIGURES



Map created with TOPO!™ © 1997 Wildflower Productions, www.topo.com, based on USGS topographic map



Approximate Scale in Miles

Figure 1
Site Location Map

SW 16th Street



LEGEND

- Existing building location
- Former DSSF building location
- Limits of UST excavation, May 1996
- SVE system location
- Monitoring well location (approximate)
- Groundwater extraction well location
- SVE manifold box
- Gas line
- Boring location

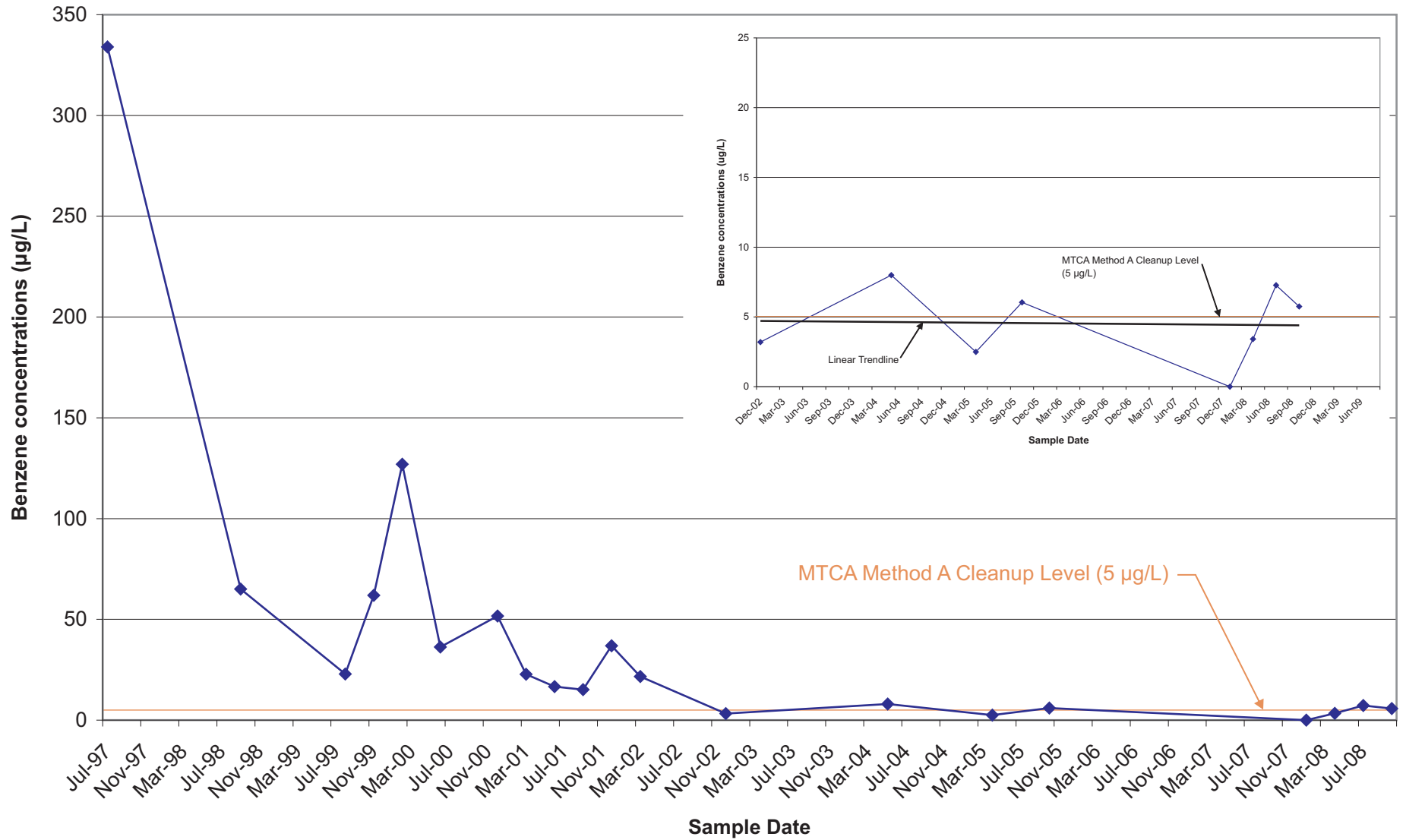


Figure 3
MW-13 Benzene Concentrations

APPENDIX A
BORING LOGS

Project: Former Group Health DSSF

Project Location: Renton, WA

Project Number: 33761923

Log of Boring B1

Sheet 1 of 1

Date(s) Drilled 5/8/10	Logged By JM	Checked By DRR
Drilling Method	Drilling Contractor Cascade Drilling, Inc.	Total Depth of Borehole 8 feet bgs
Drill Rig Type GeoProbe	Drill Bit Size/Type	Ground Surface Elevation
Groundwater Level (feet bgs) 3.5' bgs	Sampling Method Grab	Hammer Data
Borehole Backfill	Location	

Elevation, feet	Downhole Depth, feet	SAMPLES				Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
		Type Number	Blows/ 6in.	Recovery (%)	OVM (ppm)				
0						GP	Asphalt Gray SAND with gravel (fill)		
		B1-1			0.0	SM	Gray silty SAND		
		B1-2			0.0		Grading (wet)	3.5 ft ▼	
5					0.0		Grading dark gray silty SAND (organic odor)		
10							Boring was completed to 8' bgs. Groundwater was encountered at 3.5' bgs. Boring was backfilled with bentonite and finished with asphalt cap. No hydrocarbon odor noted.		
15									
20									
25									
30									

ENV2 W/O WELL T:\IONEWORLD\33761923 FORMER GROUP HEALTH\33761923.GPJ URSSEA3B.GLB URSSEA3.GDT 6/22/10



Project: Former Group Health DSSF

Project Location: Renton, WA

Project Number: 33761923

Log of Boring B2

Sheet 1 of 1

Date(s) Drilled 5/8/10	Logged By JM	Checked By DRR
Drilling Method	Drilling Contractor Cascade Drilling, Inc.	Total Depth of Borehole 8 feet bgs
Drill Rig Type GeoProbe	Drill Bit Size/Type	Ground Surface Elevation
Groundwater Level (feet bgs) 3.5' bgs	Sampling Method Grab	Hammer Data
Borehole Backfill	Location	

Elevation, feet	Downhole Depth, feet	SAMPLES				Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
		Type Number	Blows/ 6in.	Recovery (%)	OVM (ppm)				
0						GP/SP	Asphalt Brown SAND and GRAVEL (fill)		
		B2-1			0.0	SM	Gray silty SAND with red/brown mottling (moist)		
		B2-2			0.0		Grading (wet)	3.5 ft ▼	
5					0.0		Grading gray silty SAND		
10							Boring was completed to 8' bgs. Groundwater was encountered at 3.5' bgs. Boring was backfilled with bentonite and finished with asphalt cap. No hydrocarbon odor noted.		
15									
20									
25									
30									

ENV2 W/O WELL T:\IONEWORLD\33761923 FORMER GROUP HEALTH\33761923.GPJ URSSEA3B.GLB URSSEA3.GDT 6/22/10



Project: Former Group Health DSSF

Project Location: Renton, WA

Project Number: 33761923

Log of Boring B3

Sheet 1 of 1

Date(s) Drilled 5/8/10	Logged By JM	Checked By DRR
Drilling Method	Drilling Contractor Cascade Drilling, Inc.	Total Depth of Borehole 12 feet bgs
Drill Rig Type GeoProbe	Drill Bit Size/Type	Ground Surface Elevation
Groundwater Level (feet bgs) 8' bgs	Sampling Method Grab	Hammer Data
Borehole Backfill	Location	

Elevation, feet	Downhole Depth, feet	SAMPLES				Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
		Type Number	Blows/ 6in.	Recovery (%)	OVM (ppm)				
0						SP/GP	Topsoil Light gray SAND with silt and gravel (fill)		
		B3-1			0.0				
5					0.0				
		B3-2			0.0	SM	Gray silty fine SAND (wet)	8 ft ▼	
10					0.0		Grading dark gray silty SAND (wet)		
15							Boring was completed to 12' bgs. Groundwater was encountered at 8' bgs. Boring was backfilled with bentonite. No hydrocarbon odor noted.		
20									
25									
30									

ENV2 W/O WELL T:\IONEWORLD\33761923 FORMER GROUP HEALTH\33761923.GPJ URSSEA3B.GLB URSSEA3.GDT 6/22/10



Project: Former Group Health DSSF

Project Location: Renton, WA

Project Number: 33761923

Log of Boring B4

Sheet 1 of 1

Date(s) Drilled 5/8/10	Logged By JM	Checked By DRR
Drilling Method	Drilling Contractor Cascade Drilling, Inc.	Total Depth of Borehole 12 feet bgs
Drill Rig Type GeoProbe	Drill Bit Size/Type	Ground Surface Elevation
Groundwater Level (feet bgs) 11' bgs	Sampling Method Grab	Hammer Data
Borehole Backfill	Location	

Elevation, feet	Downhole Depth, feet	SAMPLES				Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
		Type Number	Blows/ 6in.	Recovery (%)	OVM (ppm)				
0							Concrete		
						SP	Gray SAND with silt and fine gravel (moist) (fill)		
							Grading gray coarse SAND with little silt and gravel (dry)		
5				69.0					
		B4-1		0.0		SM/SP	Gray coarse SAND and SILT with gravel and asphalt fragments (fill)		
				0.0			Grading fine light brown SAND (dry)		
10				1.3		SM	Gray fine SILT and SAND (moist)		
		B4-2		0.4			Grading (wet)	11 ft ▼	
15							Boring was completed to 12' bgs. Groundwater was encountered at 11' bgs. Boring was backfilled with bentonite and finished with concrete cap. No hydrocarbon odor noted.		
20									
25									
30									

ENV2 W/O WELL T:\IONEWORLD\33761923 FORMER GROUP HEALTH\33761923.GPJ_URSSSE3B.GLB_URSSSE3A3.GDT_6/22/10



Project: Former Group Health DSSF

Project Location: Renton, WA

Project Number: 33761923

Log of Boring B5

Sheet 1 of 1

Date(s) Drilled 5/8/10	Logged By JM	Checked By DRR
Drilling Method	Drilling Contractor Cascade Drilling, Inc.	Total Depth of Borehole 12 feet bgs
Drill Rig Type GeoProbe	Drill Bit Size/Type	Ground Surface Elevation
Groundwater Level (feet bgs) 8.5' bgs	Sampling Method Grab	Hammer Data
Borehole Backfill	Location	

Elevation, feet	Downhole Depth, feet	SAMPLES				Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
		Type Number	Blows/ 6in.	Recovery (%)	OVM (ppm)				
0							Concrete		
					2.6	SP	Gray SAND with silt and gravel (fill)		
					2.0				
					26.0				
5					2.8		Grading light brown medium SAND		
		B5-1			0.7				
					0.0	SM/ML	Gray SILT and sandy SILT, mottled (moist)		
					7.9		Grading wet	8.5 ft ▼	
10					16.6		Grading gray		
		B5-2			19.5				
15							Boring was completed to 12' bgs. Groundwater was encountered at 8.5' bgs. Boring was backfilled with bentonite and finished with concrete cap. No hydrocarbon odor noted.		
20									
25									
30									

ENV2 W/O WELL T:\IONEWORLD\33761923 FORMER GROUP HEALTH\33761923.GPJ_URSSEA3B.GLB_URSSEA3.GDT_6/22/10



Project: Former Group Health DSSF

Project Location: Renton, WA

Project Number: 33761923

Log of Boring B6

Sheet 1 of 1

Date(s) Drilled 5/8/10	Logged By JM	Checked By DRR
Drilling Method	Drilling Contractor Cascade Drilling, Inc.	Total Depth of Borehole 12 feet bgs
Drill Rig Type GeoProbe	Drill Bit Size/Type	Ground Surface Elevation
Groundwater Level (feet bgs) 11' bgs	Sampling Method Grab	Hammer Data
Borehole Backfill	Location	

Elevation, feet	Downhole Depth, feet	SAMPLES				Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
		Type Number	Blows/ 6in.	Recovery (%)	OVM (ppm)				
0							Concrete		
					21.3	SM/SP	Gray sandy SILT with gravel (fill)		
					1.0				
					2.9		Grading gray coarse SAND with trace silt and gravel, asphalt fragments		
					0.0		Grading gray fine SAND		
5		B6-1			1.3		Grading light brown		
					2.0		Grading gray fine SAND (moist)		
					1.1				
					0.0		Grading light gray fine SAND with mottling (native)		
10		B6-2			0.5				
					12.7		Grading (wet)	11 ft ▼	
15							Boring was completed to 12' bgs. Groundwater was encountered at 11' bgs. Boring was backfilled with bentonite and finished with concrete cap. No hydrocarbon odor noted.		
20									
25									
30									

ENV2 W/O WELL T:\IONEWORLD\33761923 FORMER GROUP HEALTH\33761923.GPJ URSSEA3B.GLB URSSEA3.GDT 6/22/10



Project: Former Group Health DSSF

Project Location: Renton, WA

Project Number: 33761923

Log of Boring B7

Sheet 1 of 1

Date(s) Drilled	5/8/10	Logged By	JM	Checked By	DRR
Drilling Method		Drilling Contractor	Cascade Drilling, Inc.	Total Depth of Borehole	12 feet bgs
Drill Rig Type	GeoProbe	Drill Bit Size/Type		Ground Surface Elevation	
Groundwater Level (feet bgs)	10.5' bgs	Sampling Method	Grab	Hammer Data	
Borehole Backfill		Location			

Elevation, feet	Downhole Depth, feet	SAMPLES				Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
		Type Number	Blows/ 6in.	Recovery (%)	OVM (ppm)				
0					0.0		Concrete		
					3.0	SM/SP	Gray silty SAND with gravel (fill) Grading light brown/gray fine SAND		
					7.9				
		B7-1			31.2	SM	Dark gray silty SAND with asphalt fragments (fill)		
5						SM/ML	Light brown SILT with sand, mottled (moist)		
					8.2	ML	Light gray SILT, mottled		
					8.4				
					31.3				
10		B7-2			14.9		Grading wet	10.5 ft ▼	
15							Boring was completed to 12' bgs. Groundwater was encountered at 10.5' bgs. Boring was backfilled with bentonite and finished with concrete cap. No hydrocarbon odor noted.		
20									
25									
30									

ENV2 W/O WELL T:\IONEWORLD\33761923 FORMER GROUP HEALTH\33761923.GPJ URSSEA3B.GLB URSSEA3.GDT 6/22/10



APPENDIX B
LABORATORY ANALYTICAL REPORTS



Fremont
Analytical

2930 Westlake Ave N Suite 100
Seattle, WA 98109
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

URS Corporation
Attn: Jesse McCullough
1501 4th Avenue, Suite 1400
Seattle, WA 98101

RE: Former GH DSSF
Project ID: CHM100510-6

May 15th, 2010

Attn:

Enclosed are the analytical results for the **Former GH DSSF** soil samples delivered to Fremont Analytical on May 8th, 2010.

Sample Receipt:

The samples were received in good condition - in the proper containers, properly sealed, labeled and within holding time. The samples were contained in 14 – 4oz sample jars with 28 – 40mL VOAs preserved with MeOH. The samples were received in a cooler with gel ice, with a cooler temperature of 6.3°C, which is within the laboratory recommended cooler temperature range (<4°C - 10°C). The samples were stored in a refrigeration unit at the USEPA-recommended temperature of 4°C ± 2°C. There were no sample receipt issues to report.

Sample Analysis:

Examination of these samples was conducted for the presence of the following:

- ***Gasoline (NWTPH-Gx) and BTEX (EPA Method 8021B) in Soil***

These applications were performed under Washington State Department of Ecology accreditation parameters. All appropriate Quality Assurance / Quality Control method parameters have been applied. There were no sample analysis issues to report.

Please contact the laboratory if you should have any questions about the report.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal
mikedee@fremontanalytical.com

Analysis of Gasoline (NWTPH-Gx) and BTEX (EPA Method 8021B) in Soil

Project: Former GH DSSF
Client: URS
Client Project #: N/A
Lab Project #: CHM100510-6

8021B+NWTPH-Gx (mg/kg)	MRL	Method Blank	LCS	B1-1	B1-2	B2-1	B2-2	B3-1
Date Preserved				5/8/10	5/8/10	5/8/10	5/8/10	5/8/10
Date Analyzed	5/13/10		5/13/10	5/13/10	5/13/10	5/13/10	5/13/10	5/14/10
Matrix				Soil	Soil	Soil	Soil	Soil

8021B (mg/kg)

Benzene	0.02	nd	133%	nd	nd	nd	nd	nd
Toluene	0.05	nd	120%	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd		nd	nd	nd	nd	nd
Total Xylenes	0.15	nd		nd	nd	nd	nd	nd

NWTPH-Gx (mg/kg)

Gasoline	5.0	nd	114%	nd	nd	nd	nd	nd
Gasoline Range Hydrocarbons (GRO)*	5.0	nd		nd	nd	nd	nd	nd

Surrogate Recovery

(Surr 1) a,a,a-Trifluorotoluene	110%	116%	107%	114%	117%	113%	106%
(Surr 2) Bromofluorobenzene	111%	110%	102%	111%	108%	108%	107%

"nd" Indicates not detected at listed reporting limits

"C" Indicates coelution prevents determination

"J" Indicates estimated value

"MRL" Indicates Method Reporting Limits

"LCS" Indicates Laboratory Control Sample

"MS" Indicates Matrix Spike

"MSD" Indicates Matrix Spike Duplicate

"RPD" Indicates Relative Percent Difference

" * " Indicates presence of petroleum distillate

Acceptable RPD is determined to be less than 30%

Acceptable Recovery Limits:

Surrogate = 65% to 135%

LCS, LCSD, MS, MSD = 65% to 135%

Surrogate Concentration = 0.25 mg/kg

BTEX Spike Concentration = 0.5 mg/kg

Gx Spike Concentration = 5.0 mg/kg

GRO = C6-C12

Analysis of Gasoline (NWTPH-Gx) and BTEX (EPA Method 8021B) in Soil

Project: Former GH DSSF
Client: URS
Client Project #: N/A
Lab Project #: CHM100510-6

8021B+NWTPH-Gx (mg/kg)	MRL	B3-2	B4-1	B4-2	B5-1	B5-2	Duplicate	
							B5-2	RPD %
Date Preserved		5/8/10	5/8/10	5/8/10	5/8/10	5/8/10	5/8/10	
Date Analyzed		5/14/10	5/14/10	5/14/10	5/14/10	5/13/10	5/13/10	
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	

8021B (mg/kg)

Benzene	0.02	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	0.06	nd	nd	nd	nd
Total Xylenes	0.15	nd	0.16	nd	nd	nd	nd

NWTPH-Gx (mg/kg)

Gasoline	5.0	nd	5.1	10	nd	nd	nd
Gasoline Range Hydrocarbons (GRO)*	5.0	nd	nd	nd	nd	44	45 2%

Surrogate Recovery

(Surr 1) a,a,a-Trifluorotoluene	105%	101%	111%	108%	112%	118%
(Surr 2) Bromofluorobenzene	11%	121%	114%	108%	124%	128%

"nd" Indicates not detected at listed reporting limits

"C" Indicates coelution prevents determination

"J" Indicates estimated value

"MRL" Indicates Method Reporting Limits

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"MSD" Indicates Matrix Spike Duplicate

"RPD" Indicates Relative Percent Difference

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Acceptable Recovery Limits:

Surrogate = 65% to 135%

LCS, LCSD, MS, MSD = 65% to 135%

Surrogate Concentration = 0.25 mg/kg

BTEX Spike Concentration = 0.5 mg/kg

Gx Spike Concentration = 5.0 mg/kg

GRO = C6-C12

Analysis of Gasoline (NWTPH-Gx) and BTEX (EPA Method 8021B) in Soil

Project: Former GH DSSF
Client: URS
Client Project #: N/A
Lab Project #: CHM100510-6

8021B+NWTPH-Gx (mg/kg)	MRL					MS	MSD	RPD %
		B6-1	B6-2	B7-1	B7-2	B5-2	B5-2	
Date Preserved		5/8/10	5/8/10	5/8/10	5/8/10	5/8/10	5/8/10	
Date Analyzed		5/13/10	5/13/10	5/13/10	5/13/10	5/13/10	5/13/10	
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	

8021B (mg/kg)

Benzene	0.02	nd	nd	nd	nd	98%	103%	5%
Toluene	0.05	nd	nd	nd	nd	95%	105%	11%
Ethylbenzene	0.05	nd	nd	nd	nd			
Total Xylenes	0.15	nd	nd	nd	nd			

NWTPH-Gx (mg/kg)

Gasoline	5.0	nd	nd	nd	nd			
Gasoline Range Hydrocarbons (GRO)*	5.0	nd	nd	nd	nd			

Surrogate Recovery

(Surr 1) a,a,a-Trifluorotoluene	115%	110%	105%	107%	110%	121%
(Surr 2) Bromofluorobenzene	109%	106%	102%	108%	116%	127%

"nd" Indicates not detected at listed reporting limits

"C" Indicates coelution prevents determination

"J" Indicates estimated value

"MRL" Indicates Method Reporting Limits

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Surrogate Concentration = 0.25 mg/kg

BTEX Spike Concentration = 0.5 mg/kg

Gx Spike Concentration = 5.0 mg/kg

GRO = C6-C12



Fremont Analytical

Chain of Custody Record

2930 Westlake Ave. N. Suite 100
Seattle, WA 98103

Tel: 206-352-3790
Fax: 206-352-7178

Date: 5/8/10

Laboratory Project No (internal): CHM10051B-6

Page: 1 of: 2

Client: URS
Address: 1501 4th Ave Suite 1400
City, State, Zip: Seattle, WA 98101 Tel: (206) 438-2700

Project Name: Former GT DSSF
Location: Benton, WA
Collected by: Jesse McCalligen

Reports To (PM):

Fax:

Email:

Project No:

Sample Name	Time	Sample Type (Matrix)	Container Type	Date of Collection	VOA 8260	VOA 8021B BTEX	NWTPH-Gx	NWTPH-HCID	NWTPH-Dx/Dx Ext.	SEMI VOL 8270C	PAH 8270	PCBs 8082	CI PESTICIDES 8081	CI HERBICIDES 8151A	Metals*	Total (T) Dissolved (D)	Anions (IC)**	Comments/Depth
1 B1-1		S	4oz glass 40ml vial	5/8/10	X	X												
2 B1-2																		Some Methans / Spilled
3 B2-1																		
4 B2-2																		
5 B3-1																		
6 B3-2																		
7 B4-1																		
8 B4-2																		
9 B5-1																		
10 B5-2																		

*Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

**Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Relinquished x <u>JMDM/gjl</u>	Date/Time <u>5/10/10</u>	Received <u>under custody seal</u>	Date/Time <u>5/10/10</u>	Sample Receipt: Good? <u>Y</u>	Special Remarks: <u>Reporting limits must ≤ MTCRA A</u>
Relinquished x <u>[Signature]</u>	Date/Time <u>5/10/10</u>	Received <u>[Signature]</u>	Date/Time <u>10/45</u>	Cooler Temperature: <u>6.3°C</u>	TAT --> 24HR 48HR <u>Standard</u>
				Seals Intact?: <u>Y</u>	
				Total Number of Containers: <u>42</u>	



Fremont Analytical

Chain of Custody Record

2930 Westlake Ave. N. Suite 100
Seattle, WA 98103

Tel: 206-352-3790
Fax: 206-352-7178

Date: 5/8/10

Laboratory Project No (internal): CHM100510-6

Page: 2 of: 2

Client: URS
Address: 1501 4th Ave, 1400
City, State, Zip: Seattle, WA 9801

Project Name: Fremont off DSSF
Location: Kent, WA
Collected by: Jesse McCulligh

Reports To (PM): _____ Fax: _____ Email: _____ Project No: _____

Sample Name	Time	Sample Type (Matrix)	Container Type	Date of Collection	VOA 8260	VOA 8021B BTEX	NWTPH-Gx	NWTPH-HCID	NWTPH-Dx/Dx Ext.	SEMI VOL 8270C	PAH 8270	PCBs 8082	CI PESTICIDES 8081	CI HERBICIDES 8151A	Metals*	Total (T) Dissolved (D)	Anions (IC)**	Comments/Depth
1 B6-1		S	4oz g/s 55 40ml VOA	5/8/10		X	X											
2 B6-2		↓	↓	↓		↓	↓											
3 B7-1		↓	↓	↓		↓	↓											
4 B7-2		↓	↓	↓		↓	↓											
5																		
6																		
7																		
8																		
9																		
10																		

*Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

**Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

				Sample Receipt:		Special Remarks:	
Relinquished	Date/Time	Received	Date/Time	Good?			
x	<u>Jesse McCulligh</u>	<u>under custody seal</u>	<u>5/10/10</u>		<u>Y</u>		
Relinquished	Date/Time	Received	Date/Time	Cooler Temperature:	<u>6.30C</u>		
x		<u>[Signature]</u>	<u>5/10/10</u>	Seals Intact?:	<u>Y</u>		
				Total Number of Containers:	<u>42</u>	TAT --> 24HR 48HR <u>Standard</u>	