



Adapt Engineering

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January 23, 2013

Adapt Project No. WA12-17775-PH2

City of Seattle

P. O. Box 94689
Seattle, Washington 98124

Attention: Ms. Hillary Hamilton

Subject: Limited Phase II Screen
Fire Station No. 6
101 23rd Avenue South
Seattle, Washington 98114

Dear Ms. Hamilton:

Adapt Engineering (Adapt) is pleased to provide you with the results of our Limited Phase II Environmental Site Assessment for the above-referenced site. This report is provided for the exclusive use of City of Seattle and their agents. If this report is to be reproduced and/or transmitted to a third party, it must be reproduced and/or transmitted in its entirety. Any exceptions will be made only with the written permission of Adapt. Authorization to perform this project was given by Richard Gholaghong via on January 9, 2013 via email.

Adapt appreciates the opportunity to be of service to you on this project. Should you have any questions concerning this report, or if we can assist you in any way, please feel free to contact us at (206) 654-7045.

Respectfully Submitted,

Adapt Engineering

Ryan Kerrigan, Ph.D., L.G.
Geologist/Environmental Scientist

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1.0 INTRODUCTION

1.1 Site Description

The subject site is composed of one tax parcel (Parcel No. 9826701650) located at 101 23rd Avenue South in Seattle, Washington 98114. The approximately rectangular shaped site is reported to be 0.47 acres (20,400 sq ft) in size. There is a one-story, 8,130 square foot (sq ft) fire station on the subject site which was constructed in 1931. The site is located on the southwest side of the intersection of 23rd Avenue South and East Yesler Way (see Figures 1-3).

The subject site has supported fire stations since approximately 1894. Reportedly from 1964 to 1999, the Fire Station had an underground storage tank (UST) resident for fueling of fire engines. In 2000, during removal of the UST, diesel contamination was discovered below the fuel dispenser that exceeded regulatory action levels. The purpose of this Limited Phase II Screen is to assess if contamination is still present.

1.2 Project Background

Adapt conducted a Phase I Environmental Site Assessment of the subject site in 2012:

- Phase I Environmental Site Assessment – Fire Station No. 6, 101 23rd Avenue South, Seattle, Washington. Prepared by Adapt Engineering (Adapt Project No.: WA12-17775-PH1), prepared for City of Seattle, dated June 14, 2012.

The 2012 Phase I ESA revealed that the subject site was on the several regulatory lists: Confirmed and Suspected Contaminated Sites (CSCS) [Facility ID: 86292113, CS ID: 10851], Underground Storage Tank (UST) [Site ID: 7909], Leaking UST (LUST) [Cleanup Site ID: 10851], and Independent Cleanup Reports (ICR). The CSCS listing originated after the 1999 removal of a 500 gallon UST formerly located on the east side of the building, south of the large bay door to the fire station apparatus room (see Figures 3 and 4). A UST decommissioning report received by Ecology, dated February 9, 2000, reports the decommissioning of a 46 inch diameter, 76 inch length UST which was located approximately 2 ft below ground surface (bgs).

The following environmental report for subject site was provided by the property contact and is on file with Adapt and Ecology:

- UST Site Assessment Report, Fire Station #6, 101 23rd Avenue South, Seattle, Washington. Prepared by Garry Struthers Associates, Inc. (Project No.: 95-044 Phase 5 Task 12), prepared for The City of Seattle - Executive Services Department, dated February 9, 2000.

The 2000 UST decommissioning report indicates that UST removal included the collection and analysis of ten soil samples for petroleum hydrocarbons (gasoline through heavy oil). The soil samples came from the excavation bottom (~7 ft bgs), along each of the side walls (~5.5 ft bgs), the excavated stockpile, and beneath the fuel dispenser. Groundwater was not encountered. The 2000 report indicated that only one of the ten samples analyzed detected petroleum hydrocarbons (diesel) above current Model Toxics Cleanup Level (MTCA) Method A Cleanup Level. The impacted soil was collected 1 ft below the dispenser and detected 2,600 parts per million (ppm) diesel (the current MTCA Method A Cleanup Level is 2,000 ppm for diesel [formerly 200 ppm in 2000]). A sample collected from 2 ft below the dispenser detected 690

ppm diesel and a sample from 3.5 ft below the dispenser did not detect petroleum hydrocarbon impacts. All other samples collected on-site were non-detect. The shallow diesel impacts were left in-place because the concrete slab above the impacts was determined to be of structural importance to the building.

Adapt submitted a proposed work plan to Ecology to assess for the presence of previously detected contaminants. After discussions with Ecology, a prudent approach to assessment of previously detected contaminants was agreed upon.

- Limited Phase II Screen - Work Plan [revised], Fire Station No. 6, 101 23rd Avenue South, Seattle, Washington 98114, prepared by Adapt Engineering (Adapt Project No.: WA12-17775-PH1), prepared for Washington State Department of Ecology, dated November 5, 2012.
- Opinion Pursuant to WAC 173-340-515(5) on Proposed Remedial Action for the Following Site: Seattle Fire Station 6, 101 23rd Avenue South, Seattle, Prepared by Ecology (Facility Site Number: 8629113; VCP Number: NW2615; ISIS Number: 10857), prepared for The City of Seattle, dated November 7, 2012.

The proposed plan of action was to determine if previously reported contamination is still resident on-site. The scope of characterization was limited to the vicinity of the former fuel dispenser (the area of previously reported contamination). Adapt proposed the advancement of three hand auger borings to a depth of approximately 5 ft below ground surface in the area of the former fuel dispenser (see Figure 3 and 4). The additional subsurface characterization work would help evaluate the need and cost of any remediation work (if any) that would be required to delist the subject property from Ecology's list of Contaminated and Suspected Contaminated Sites and obtain a "No Further Action" letter.

1.3 Purpose

The purpose of our Limited Phase II Screen is to assess the potential presence of contamination above MTCA Method A Cleanup Levels. This Limited Phase II Screen generally consists of assessing soil and groundwater (if encountered) beneath, and adjacent to, the former fuel dispenser for possible diesel impacts. The proposed scope of services does not include the work scope required to fully delineate the exact vertical and lateral extent of possible on-site or off-site contamination.

1.4 Scope of Work and Authorization

The scope of work for this project consisted completion of three hand auger borings, collection of subsurface samples of soil and groundwater (if encountered), and analytical testing of recovered samples for diesel impacts, the previously reported contaminant. Authorization to perform this project was given by Richard Gholaghong via on January 9, 2013 via email.

2.0 ACTIVITIES

2.1 Task 1 – Pre-Drilling Preparatory Activities

To avoid damaging subsurface utilities and creating potential life threatening conditions, the Underground Utilities Locating Center of Washington was contacted to locate all subsurface utilities at or near the site prior to drilling. In addition, Adapt subcontracted Applied Professional Services, Inc. (APS) of North Bend, Washington to screen for potential underground utilities at each of the proposed boring locations to locate any potential utilities that, by policy, the public company would not locate.

2.2 Task 2 – Hand Auger Borings

Hand Auger Borings and Soil Sampling

On January 14, 2013, three (3) hand auger borings were advanced on the subject site to assess for potential contaminant impacts. One boring (B-2) was centered on the former location of the fuel dispenser and the other two (B-1 and B-3) were located in the inferred down-gradient position (west) of the former dispenser (see Figure 4 for locations and respective distances).

Initial advancement of the borings was achieved by coring a 5 inch diameter hole through the approximately one foot concrete walkway. All borings were proposed to be completed to depths of up to approximately five feet below ground surface (bgs) with a hand operated auger tool.

Soil samples were collected continuously from the site explorations. Recovered soil samples were collected from each exploration for description, screening, observation for field indications (visual and olfactory) of potential impacts, and for quantitative laboratory analyses. All sampling equipment was thoroughly cleaned prior to, and after, each sampling episode. Discrete soil samples from non-volatile compounds were collected using a gloved hand and transferred to a clean reclosable polyethylene bag. The reclosable bag provided a controlled environment for the development and sampling of headspace vapors. The bagged sample was then allowed to sit and equilibrate with atmospheric conditions for approximately 15 minutes. The resulting headspace was screened by inserting a photoionization detector (PID) probe into the sample container. The PID screen provided a qualitative assessment of total volatile organic constituent concentration in the sample headspace and provide a basis for selection of samples to be submitted for quantitative laboratory analyses. Samples were collected using a gloved hand and transferred to an empty 4 ounce glass jar with a Teflon® lined lid. Select samples were submitted for laboratory analysis. The soil samples were stored at 4 degrees C, and transported as soon as possible to Friedman and Bruya's laboratory in Seattle, Washington for analytical testing under Adapt's chain-of-custody procedures. Upon completion of the soil sampling the boreholes will be permanently closed. The initial proposed borehole closure procedure was to secure the original concrete cores with quickcrete to the concrete slab. However, it was not possible to achieve a solid seal between the core and the concrete slab. Therefore, to close the boreholes, they were filled to the base of the concrete walkway then sealed with quickcrete, level with the existing slab.

Analytical Testing

Selected soil samples collected from the explorations were analyzed for semi-volatile petroleum hydrocarbons ranging from diesel through heavy oil by Ecology Method Northwest Total Petroleum Hydrocarbon Diesel Extended (NWTPH-Dx). In addition, sample extracts were passed through a silica gel column prior to analysis. The use of silica gel columns is to exclude

biogenic sources of organics from quantitative analyses. Organics such as plant or animal matter can interfere with quantitative analyses providing artificially high results.

The analytical testing was performed by Friedman & Bruya, Inc. of Seattle, Washington, a Washington State certified laboratory. Figures in Appendix A and Photographs in Appendix B show the locations of the sampling sites, site boundaries, and pertinent site features.

3.0 RESULTS

3.1 Subsurface Conditions

The three hand auger borings were located east of the Fire Station No. 6 building, south of the driveway, in the location of, and adjacent to, the former fuel dispenser (see Figures and Photographs).

Borehole B-1 was located 24 inches east of the building wall and 20 inches southwest of the center of the former fuel dispenser location. Advancement of the borehole began with a 5 inch diameter hole cut through 6.5 inches of concrete. Boring B-1 disclosed brown silty-sand to sandy-silt containing some gravel. Soil samples did not display obvious signs of contamination such as sheens or odors. All recovered soil samples were field screened using a MiniRae Photoionization Detector (PID) at 1 ft intervals by procedures described in Section 2.2. PID readings provide a qualitative assessment of total volatile organic constituent concentrations in parts per million (ppm) of the vapor emanating from soil samples sealed in polyethylene bags. Boring B-1 had the following PID readings at the indicated interval: 1-2 ft = 0.3 ppm; 2-3 ft = 0.6 ppm; 3-4 ft = 0.4 ppm; and 4-5 ft = 0.4 ppm. The 4 to 5 ft interval soil sample (B-1: 4-5) was submitted for quantitative analysis. The boring was advanced to a depth of 5 ft and terminated; groundwater was not encountered.

Borehole B-2 was located 43 inches east of the building wall above the presumed center of the former fuel dispenser location. Advancement of the borehole began with a 5 inch diameter hole cut through 12 inches of concrete. Boring B-2 disclosed brown silty sand containing some gravel. Soil samples did not display obvious signs of contamination such as sheens or odors. Boring B-2 had the following PID readings at the indicated interval: 1-2 ft = 0.5 ppm; 2-3 ft = 0.7 ppm; 3-4 ft = 1.0 ppm; and 4-5 ft = 0.8 ppm. Samples collected for quantitative analyses were taken from the 1 to 2 ft interval (B-2: 1-2 [the location of previously described contamination]) and from the bottom of the borehole, interval 4 to 5 ft (B-1: 4-5). The boring was advanced to a depth of 5 ft and terminated; groundwater was not encountered.

Borehole B-3 was located 24 inches east of the building wall and 19 inches northwest of the center of the former fuel dispenser location. Advancement of the borehole began with a 5 inch diameter hole cut through 8 inches of concrete. Boring B-3 disclosed brown sand down to a depth of 17 inches where a solid concrete slab was encountered. Adapt was made aware that building footings could be present at depth, therefore, no attempt was made to core through the slab. Soil samples did not display obvious signs of contamination such as sheens or odors. Boring B-3 had one PID reading of 0.6 ppm from the soil sampled at the 8 to 17 inch interval. The 8 to 17 inch interval soil sample (B-3: 1-1.5) was submitted for quantitative analysis.

3.2 Quantitative Analyses

Analytical results for soil samples are summarized in Table 1 and the analytical laboratory report is included in Appendix C. The analytical testing was performed by Friedman & Bruya, Inc. of Seattle, Washington, a Washington State certified laboratory. All soil samples submitted underwent analysis for total petroleum hydrocarbons as diesel and motor oil using method NWTPH-Dx. In addition, sample extracts were passed through a silica gel column prior to analysis to exclude biogenic sources of organic carbon from the quantitative analyses.

Sample No.	B-1: 4-5	B-2: 1-2	B-2: 4-5	B-3: 1-1.5	MTCA Method A Unrestricted Land Cleanup Level
Depth (feet)	4-5	1-2	4-5	1-1.5	
PID Reading	0.4	0.5	0.8	0.6	
Diesel Range (C ₁₀ -C ₂₅)	ND(<50)	1,300	67	100	2,000
Motor Oil Range (C ₂₅ -C ₃₆)	ND(<250)	ND(<250)	ND(<250)	ND(<250)	2,000

All concentrations given in parts per million (ppm), which is equivalent to milligrams per kilogram
 PID = Photo-ionization Detector; ND = Not Detected (above associated detection limit); MTCA = Model Toxics Control Act (MTCA) Method A Cleanup Levels: Red text indicates concentrations above cleanup levels

Results indicate that soil collected from B-1 did not contain detectable concentrations of any analytes measured. Boring B-2 and B-3 had measurable concentrations of diesel range petroleum hydrocarbons; however, all measurable concentrations were below the Model Toxics Control Act (MTCA) Method A Cleanup Levels.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Summary

The subject site has supported fire stations since approximately 1894. Reportedly from 1964 to 1999, the Fire Station had an underground storage tank (UST) for fueling of fire engines. In 2000, during removal of the UST, diesel contamination was discovered below the fuel dispenser that exceeded regulatory action levels. According to the 2000 UST decommissioning report impacted soil was collected 1 ft below the fuel dispenser and detected 2,600 parts per million (ppm) diesel (the current MTCA Method A Cleanup Level is 2,000 ppm for diesel [formerly 200 ppm in 2000]). A sample collected from 2 ft below the dispenser detected 690 ppm diesel and a sample from 3.5 below the dispenser did not detect petroleum hydrocarbon impacts. All other samples collected in 2000 were non-detect.

The purpose of our Limited Phase II Screen is to assess the potential presence of prior reported contamination above MTCA Method A Cleanup Levels. This Limited Phase II Screen generally consisted of assessing soil beneath, and immediately down-gradient to, the former fuel dispenser for possible diesel impacts.

The result of our Limited Phase II Screen show that areas previously described as impacted by diesel above MTCA Method A Cleanup Levels have naturally attenuated since last sampled, 12 years ago. None of the soil exhumed from boreholes exhibited obvious signs of contamination such as sheens, odors, or elevated PID readings. Three of the four soil samples submitted for

quantitative analyses detected measurable amounts of diesel; however, all concentrations were below MTCA Method A Cleanup Levels. Soil analytical test results and analytical test certificates are included in Appendix C.

4.2 Conclusions

Soil previously identified as impacted by diesel did not exhibit diesel concentrations above MTCA Method A Cleanup Levels. Soil collected from inferred down-gradient locations adjacent to the former fuel dispenser did not exhibit diesel concentrations above MTCA Method A Cleanup Levels. Soil collected from immediately below previously impacted soil did not exhibit diesel concentrations above MTCA Method A Cleanup Levels. Contamination that was present during the 2000 UST decommissioning has naturally attenuated below regulatory action levels and no longer poses a threat to human health or the environment.

4.3 Recommendations

Based on the findings of this Limited Phase II Screen, the previously described contamination on this site above MTCA Method A Cleanup Levels is no longer present at concentrations above cleanup levels. Therefore, the City of Seattle should seek a "No Further Action" determination with regards to this site's status as a Confirmed and Suspected Contaminated Site facility.

5.0 LIMITATIONS

Given that our assessment was limited and peripheral to the dispenser area, it is possible that a release may have occurred that was not discovered during our assessment. If future subsurface work encounters additional stained, odorous, or otherwise contaminated soils, such soils should be managed as contaminated material, which may include additional analytical testing an off-site treatment or disposal.

Information contained in this report is based upon site characterization, field observations, and the laboratory analyses completed for this study. Conclusions presented are professional opinions based upon our interpretation of the analytical laboratory test results, as well as our experience and observations during the field activities. The location and depth of the exploration, as well as the analytical scope were completed within the site and proposal constraints. Adapt's observations and the analytical data are limited to the vicinity of each test probe and do not necessarily reflect conditions across the site. No other warranty, express or implied is made. In the event that additional information regarding either the site or surrounding properties becomes known, or changes to existing conditions occurs, the conclusions in this report should be reviewed, and if necessary, revised to reflect the updated information. Project specific limitations are presented in the appropriate sections of this report.

This report has been prepared for the exclusive use of the City of Seattle and their agents for specific application to the project site. Use or reliance upon this report by a third party is at their own risk. Adapt does not make any representation or warranty, express or implied, to such other parties as to the accuracy or completeness of this report or the suitability of its use by such other parties for any purpose whatever, known or unknown, to Adapt.

Adapt appreciates the opportunity to be of service to you on this project. Should you have any questions concerning this report, or if we can assist you in any way, please contact us at (206) 654-7045.

Respectfully Submitted,

Adapt Engineering



RYAN J. KERRIGAN

Ryan J. Kerrigan, Ph.D., L.G.
Geologist/Environmental Scientist

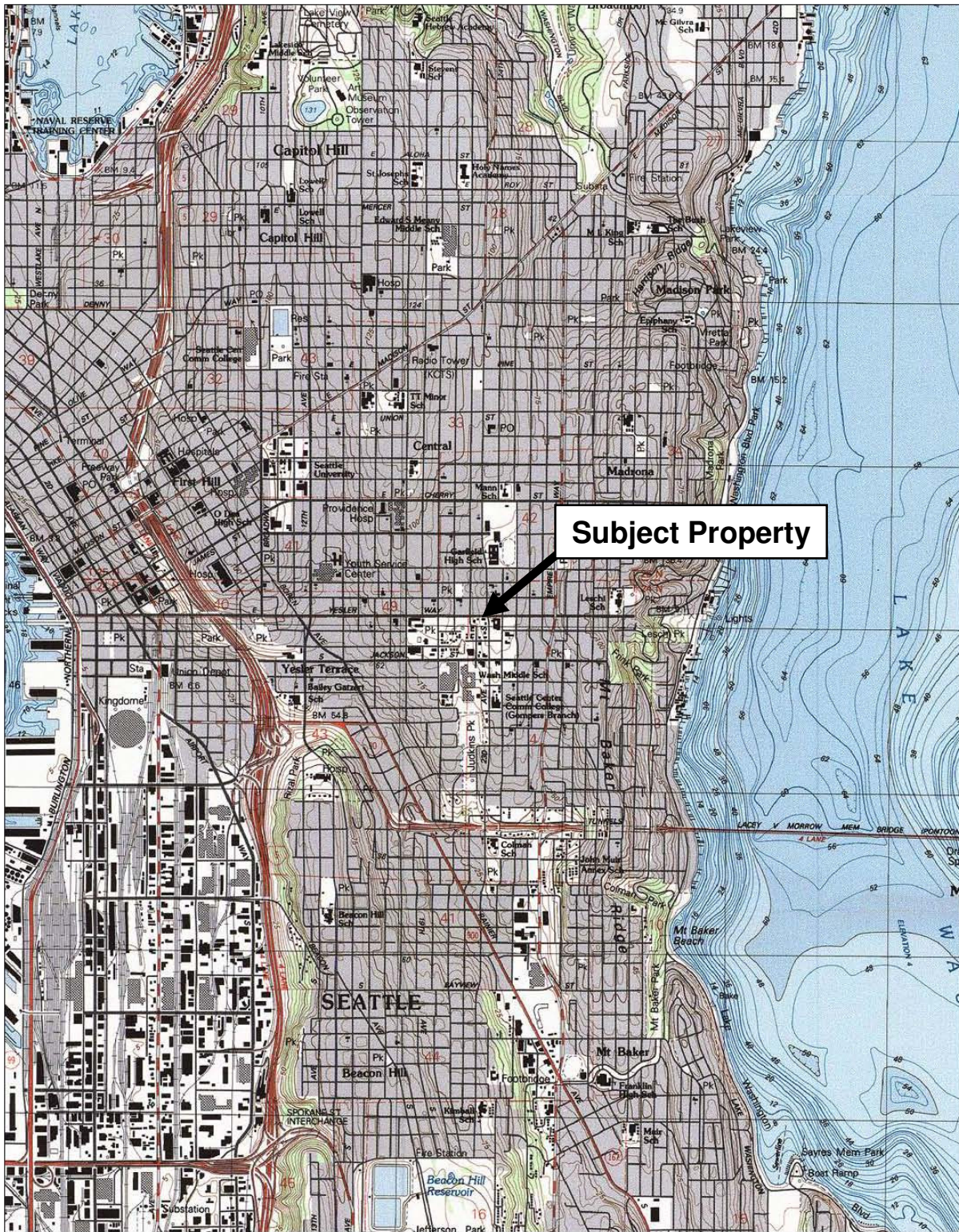


Daryl S. Petrarca

Daryl S. Petrarca, L.H.G.
Principal

APPENDIX A

FIGURES



Subject Property

IN 17 1/2°

0 1000 FEET 0 500 1000 METERS

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Adapt Engineering, Inc.
 615 8th Avenue South
 Seattle, Washington 98104
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FIGURE 1 - Location/Topographic Map
 Location: Fire Station 6
 101 23rd Avenue South
 Seattle, WA 98114
 Client: City of Seattle
 Date: 01/22/13 Job #: WA12-1775-PH2



Adapt Engineering

615 8th Avenue South
 Seattle, Washington 98104
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FIGURE 2 - Parcel Map / 2009 Aerial Photo

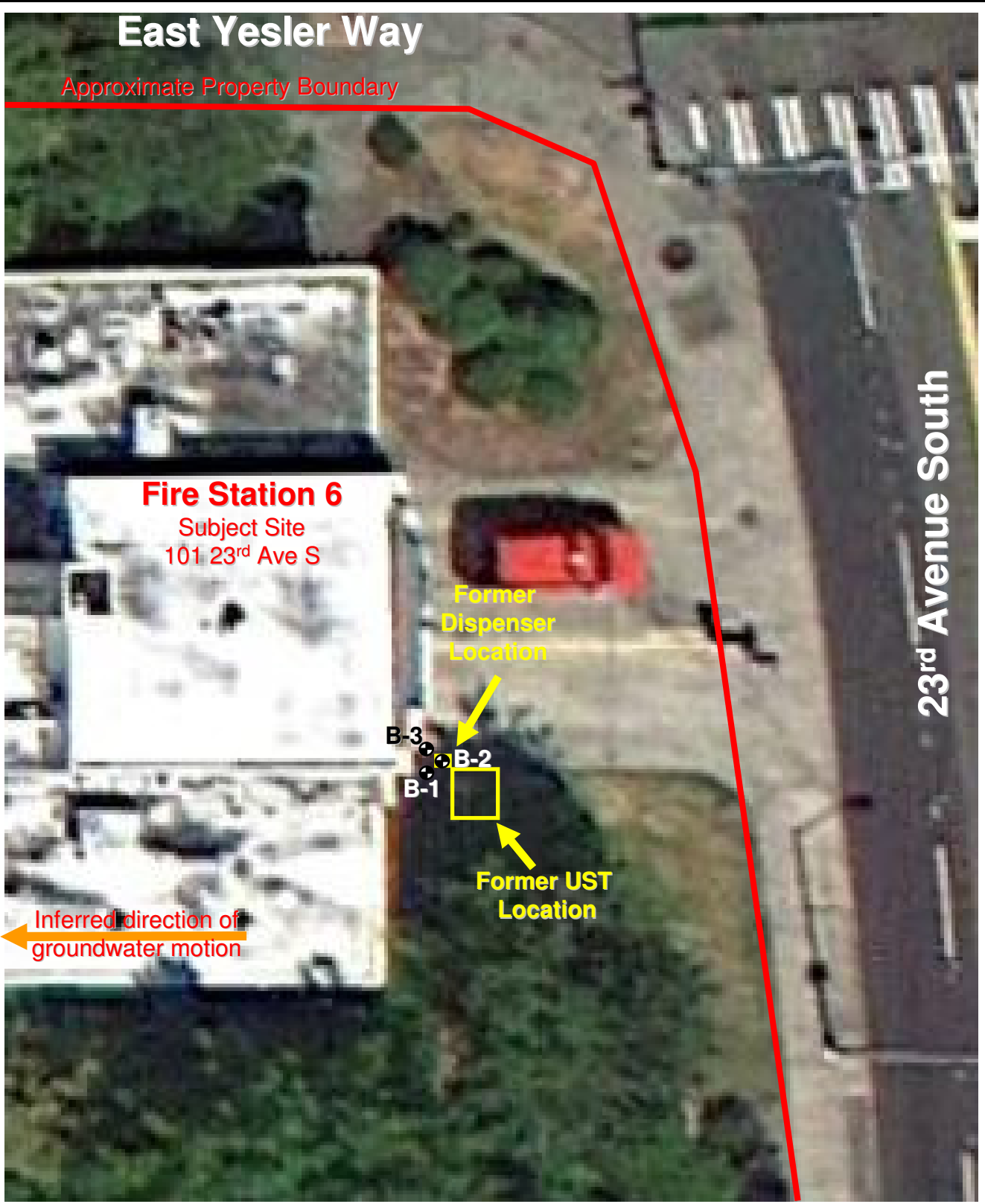
Location: Fire Station 6
 101 23rd Avenue South
 Seattle, WA 98114

Client: City of Seattle

Date: 01/22/13 Job #: WA12-1775-PH2

East Yesler Way

Approximate Property Boundary



Fire Station 6

Subject Site
101 23rd Ave S

Former
Dispenser
Location

B-3
B-2
B-1

Former UST
Location

Inferred direction of
groundwater motion

23rd Avenue South

Adapt Engineering

615 8th Avenue South
Seattle, Washington 98104
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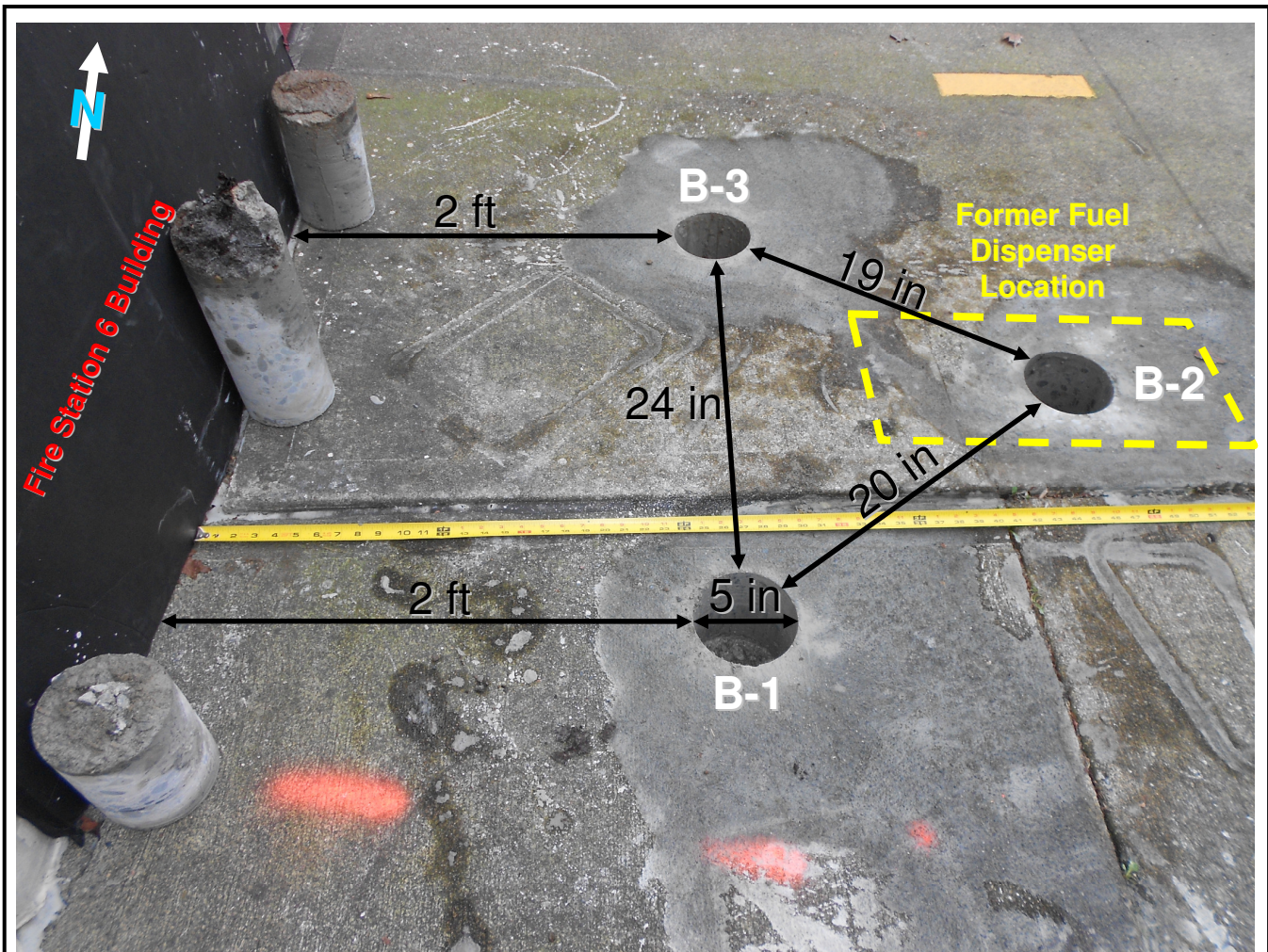


FIGURE 3 – Site Map / 2011 Photo

Location: Fire Station 6
101 23rd Avenue South
Seattle, WA 98114

Client: City of Seattle

Date: 01/22/13 Job #: WA12-1775-PH2



The above photograph of the site is taken looking north at the location of the former fuel dispenser and hand auger boring locations. The photograph shows each of the borehole after concrete coring and prior to hand augering with approximate distances labeled. Borehole B-1 and B-2 reach a depth of five feet below ground surface (bgs), however, B-3 encountered concrete slab at approximately 1.5 ft bgs which halted advancement. Recovered soil samples were collected from each exploration for description, screening, observation for field indications (visual and olfactory) of potential impacts, and for quantitative laboratory analyses.

Adapt Engineering

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 Seattle, Washington 98104
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FIGURE 4 – Hand Auger Boring Locations

Location: Fire Station 6

101 23rd Avenue South
 Seattle, WA 98114

Client: City of Seattle

Date: 01/22/13 Job #: WA12-17775-PH2

APPENDIX B

PHOTOGRAPHS



1. Looking southwest at the location of the former UST and fuel dispenser prior to field activities.



2. Looking west at the borehole locations after concrete coring and prior to hand augering. The boreholes were designated B-1, B-2, and B-3 from left to right, respectively. The concrete cores for each borehole are lined along the Fire Station building adjacent to their respective borehole.



3. Looking west at the borehole after hand augering and the borehole have been sealed with fresh concrete.



4. Looking southwest at the location of the boreholes after all field activities.

APPENDIX C

LABORATORY CERTIFICATION

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
e-mail: fbi@isomedia.com

January 17, 2013

Ryan Kerrigan, Project Manager
Adapt Engineering
615 8th Avenue South
Seattle, WA 98104

Dear Mr. Kerrigan:

Included are the results from the testing of material submitted on January 14, 2013 from the WA12-17775-PH2, F&BI 301150 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
ADP0117R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 14, 2013 by Friedman & Bruya, Inc. from the Adapt Engineering WA12-17775-PH2, F&BI 301150 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Adapt Engineering</u>
301150 -01	B-1:4-5
301150 -02	B-2:1-2
301150 -03	B-2:4-5
301150 -04	B-3:1-1.5

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/17/13
Date Received: 01/14/13
Project: WA12-17775-PH2, F&BI 301150
Date Extracted: 01/15/13
Date Analyzed: 01/15/13

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx
Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)**

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 53-144)
B-1:4-5 301150-01	<50	<250	112
B-2:1-2 301150-02	1,300	<250	111
B-2:4-5 301150-03	67	<250	115
B-3:1-1.5 301150-04	100	<250	116
Method Blank 03-107 MB	<50	<250	124

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/17/13

Date Received: 01/14/13

Project: WA12-17775-PH2, F&BI 301150

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: 301150-01 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	107	122	64-133	13

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	108	58-147

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 - More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

301150

SAMPLE CHAIN OF CUSTODY

ME 01-14-13

COI

Send Report To Adapt Engineering
 Company Adapt Engineering
 Address 615 8th Ave S
 City, State, ZIP Seattle, WA 98104
 Phone # 206 654 7645 Fax # 206 654 7648

SAMPLERS (signature) [Signature]
 PROJECT NAME/NO WA12-17795-PH PO #
 REMARKS
Please hold after analysis; may need to do EPA/PH

Page # 1 of 1
 TURNAROUND TIME
 Standard (2 Weeks)
 RUSH
 Rush charges authorized by:
 SAMPLE DISPOSAL
 Dispose after 30 days
 Return samples
 Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED						Notes		
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS		Silica Gel	
B-1-4-5	01	1-14-13	10:50	Soil	1 jar	X						X		
B-2-1-2	02		10:45											
B-2-4-5	03		10:45											
B-3-1-15	04		10:50											

SIGNATURE		PRINT NAME		COMPANY		DATE	TIME
Requished by: <u>[Signature]</u>		<u>Evan Kuvshinov</u>		<u>Adapt</u>		1/14/13	12:00
Received by: <u>[Signature]</u>		<u>VINH</u>		<u>FBI</u>		1/14/13	12:30
Requished by:							
Received by:							

Friedman & Bryo, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282
 Fax (206) 283-5044
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Samples received at 4 °C

APPENDIX D

PREVIOUS REPORTS



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

November 7, 2012

Mr. Louis Webster
City of Seattle
PO Box 94689
Seattle, WA 98124

Re: Opinion Pursuant to WAC 173-340-515(5) on Proposed Remedial Action for the Following Site:

- **Site Name:** Seattle Fire Station 6
- **Address:** 101 23rd Avenue South, Seattle
- **Facility Site Number:** 8629113
- **VCP Number:** NW2615
- **ISIS Number:** 10857

Dear Mr. Webster:

Thank you for submitting documents regarding your proposed remedial action for the **Seattle Fire Station 6** (Site), for review by the Washington State Department of Ecology (Ecology), under the Voluntary Cleanup Program (VCP). Ecology appreciates your initiative in pursuing this administrative option for cleaning up hazardous waste sites under the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

This letter constitutes an advisory opinion regarding a review of submitted documents/reports pursuant to requirements of MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site:

- Diesel-range petroleum hydrocarbons in soil as TPH-D

Ecology is providing this advisory opinion under the specific authority of RCW 70.105D.030(1)(b) and WAC 173-340-515(5).

This opinion does not resolve a person's liability to the state under MTCA or protect a person from contribution claims by third parties for matters addressed by the opinion. The state does



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not have the authority to settle with any person potentially liable under MTCA except in accordance with RCW 70.105D.040(4). The opinion is advisory only and not binding on Ecology.

Ecology's Toxics Cleanup Program has reviewed the following information regarding your proposed remedial action(s):

1. November 5, 2012. **Limited Phase II Screen- Work Plan [revised]**. Adapt Engineering, Inc. (Adapt)
2. October 29, 2012. **Opinion Letter**. Department of Ecology.
3. July 17, 2012. **Limited Phase II Screen- Work Plan**. Adapt.
4. February 9, 2000. **UST Site Assessment**. Gary Struthers Associates.

The reports listed above will be kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. Appointments can be made by calling the NWRO resource contact at (425) 649-7235.

Adapt Engineering proposes to complete an investigation at the Site to determine if previously reported diesel-range petroleum hydrocarbons remain in the soil above MTCA Method A cleanup levels. The investigation would consist of three hand augured soil borings to an anticipated depth of five feet below ground surface (bgs). The borings are to be in the vicinity of the former fuel dispenser. Assuming these soil samples met MTCA Method A cleanup levels, the Site would be submitted for review under the Voluntary Cleanup Program (VCP).

Based on a review of supporting documentation listed above, pursuant to requirements contained in MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following releases at the Site, Ecology has determined that:

- The work plan as presented would provide sufficient information to evaluate the conditions at the site.

This opinion **does not** represent a determination by Ecology that a proposed remedial action will be sufficient to characterize and address the specified contamination at the Site or that no further remedial action will be required at the Site upon completion of the proposed remedial action. To obtain either of these opinions, you must submit appropriate documentation to Ecology and request such an opinion under the VCP. This letter also does not provide an opinion regarding the sufficiency of any other remedial action proposed for or conducted at the Site.

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Please note that this opinion is based solely on the information contained in the documents listed above. Therefore, if any of the information contained in those documents is materially false or misleading, then this opinion will automatically be rendered null and void.

The state, Ecology, and its officers and employees make no guarantees or assurances by providing this opinion, and no cause of action against the state, Ecology, its officers or employees may arise from any act or omission in providing this opinion.

Again, Ecology appreciates your initiative in conducting independent remedial action and requesting technical consultation under the VCP. As the cleanup of the Site progresses, you may request additional consultative services under the VCP, including assistance in identifying applicable regulatory requirements and opinions regarding whether remedial actions proposed for or conducted at the Site meet those requirements.

If you have any questions regarding this opinion, please contact me at (425) 649-7099

Sincerely,



John M. Bails
Toxics Cleanup Program

cc: Mr. Ryan J. Kerrigan, Adapt Engineering, Inc.