



# **PHASE II ENVIRONMENTAL SITE ASSESSMENT HAZEN HIGH SCHOOL FINAL REPORT**



1101 Hoquiam Avenue NE  
Renton, WA

**Prepared for:**  
Mr. Jonathan Stine  
Renton School District #403  
7812 South 124<sup>th</sup> Street  
Seattle, Washington 98178

**Prepared by:**  
EHS – International, Inc.  
13228 – NE 20<sup>th</sup> Street, Suite 100  
Bellevue, Washington 98005

**December 9, 2011**

HAZEN HIGH SCHOOL  
1101 HOQUIAM AVENUE NE, RENTON, WASHINGTON  
PHASE II ENVIRONMENTAL SITE ASSESSMENT  
FINAL REPORT

Prepared for

Mr. Jonathan Stine  
Renton School District #403  
7812 South 124<sup>th</sup> Street  
Seattle, Washington 98178

Prepared by

**EHS - International, Inc.**  
13228 NE 20<sup>th</sup> Street, Suite 100  
Bellevue, Washington 98005

December 9, 2011

## TABLE OF CONTENTS

SUMMARY OF FINDINGS .....	I
1 INTRODUCTION .....	1
1.1 PROJECT PURPOSE.....	1
1.2 REPORT ORGANIZATION .....	1
2 PROPERTY OVERVIEW .....	1
2.1 BACKGROUND.....	1
3 SCOPE OF FIELD SERVICES .....	1
3.1 SOIL BORING LOCATIONS .....	2
3.2 SUBSURFACE SAMPLING PROCEDURE AND BORING LOGGING .....	2
3.3 SAMPLING DOCUMENTATION.....	2
3.4 DECONTAMINATION PROCEDURES.....	3
3.5 SAMPLE HANDLING AND SHIPPING.....	3
3.6 LABORATORY PROTOCOL.....	3
4 INVESTIGATION RESULTS .....	3
4.1 GEOLOGY .....	3
4.2 SUBSURFACE CONDITIONS .....	3
4.3 GROUNDWATER.....	4
4.4 FIELD OBSERVATIONS .....	4
5 ANALYTICAL RESULTS .....	4
6 REGULATORY FRAMEWORK.....	4
7 PHASE II ESA CONCLUSIONS .....	4
8 PHASE II ESA RECOMMENDATIONS.....	4
9 REFERENCES .....	4
10 SIGNATURE .....	5
11 PROJECT LIMITATIONS .....	6

## LIST OF FIGURES

FIGURE 1: SITE LOCATION MAP

FIGURE 2: SITE PLOT PLAN

## LIST OF TABLES

TABLE 1: SAMPLE SOURCE INFORMATION

TABLE 2: NWTPH-Dx ANALYTICAL RESULTS

## APPENDICES

APPENDIX A: SOIL BORING LOGS

APPENDIX B: LABORATORY ANALYTICAL REPORT

## SUMMARY OF FINDINGS

EHS – International, Inc. (EHSI) completed a Phase II Environmental Site Assessment (ESA) of the Hazen High School in Renton, Washington on behalf of the Renton School District #403 (RSD). Mr. Jonathan Stine of the RSD gave EHSI authorization to proceed with the project on October 7, 2011. The fieldwork for the Phase II ESA took place on October 26, 2011.

The Hazen High School property (Site) consists of six King County parcels with a total area of 24.4 acres. The property is currently occupied by the RSD Hazen High School.

The focus of this Phase II ESA was to assess the Site for potential groundwater contamination resulting from a confirmed release of petroleum products from a heating oil underground storage tank (UST). The UST was removed from the Site in August of 2011. The removed heating oil UST was replaced by a new UST within the same excavation as the removed UST.

EHSI directed the drilling of three hollow-stem auger soil borings (B-1 through B-3). The borings were placed to sample soils and groundwater (if present) at the following Site locations:

- B-1 was south of the former heating oil UST removal excavation;
- B-2 was west of the former heating oil UST removal excavation; and
- B-3 was to the northeast and inferred down-gradient hydrologic position relative to the former heating oil UST removal excavation.

EHSI collected and submitted one soil sample for analysis. The sample was a composite soil sample collected from borings B-1 and B-3 at depth of 12 feet below ground surface (BGS). The composite sample (B-1/3-12) was submitted to Friedman and Bruya, Inc. (FBI) of Seattle, Washington for analysis. The sample analytical protocol was as follows:

- Diesel to oil-range total petroleum hydrocarbons (TPH) - Test Method NWTPH-Diesel extended (Dx);

The depth of the boring B-1 was 36 feet BGS. The depths of borings B-2 and B-3 were three feet BGS and 17 feet BGS respectively. The subsurface materials encountered beneath the Site generally consisted of silty sandy material (SM), as per the Unified Soil Classification System (USCS). No groundwater was encountered in any of the three borings to the maximum exploration depth of 36 feet BGS. The absence of shallow groundwater in the soil borings surrounding the UST installation confirms that the water encountered earlier in the former tank removal excavation was not representative of local shallow groundwater.

EHSI did not note evidence of petroleum staining or odors suggestive of possible petroleum hydrocarbon contamination during field screening of the soil samples. Analytical results indicate that no oil-range TPH were present in the analyzed soil sample. Diesel-range TPH in a concentration of 65 mg/kg was detected in sample B-1/3-12. On the basis of soil analytical results, the Site UST removal excavation soils are compliant with Washington State Model Toxics Control Act (MTCA) Method A Soil Unrestricted Land Uses Cleanup Levels.

EHSI's drilling effort did not encounter a shallow groundwater table to a depth of 36 feet BGS. This information confirms that the water encountered in the former heating oil UST removal excavation was a perched condition and not representative of the local groundwater aquifer.

The concentration of diesel-range TPH (65 mg/kg) detected in the composite soil sample from borings B-1 and B-3 further demonstrates that Site soils are in compliance with MTCA Cleanup regulations.

Based on the lack of shallow groundwater near the replaced heating oil UST and soil sample results that were compliant with regulatory cleanup levels, no additional action is warranted at this time.

## 1 INTRODUCTION

EHSI completed a Phase II ESA of the Site on behalf of the RSD. Mr. Jonathan Stine gave EHSI authorization to proceed with the project on October 7, 2011. The fieldwork for the Phase II ESA took place on October 24, 2011. The Site address is 1101 Hoquiam Avenue Northeast in Renton, Washington.

### 1.1 PROJECT PURPOSE

The purpose of the Phase II ESA was to assess groundwater contamination surrounding the location of a release from a heating oil UST.

### 1.2 REPORT ORGANIZATION

This report begins with a summary of findings, statement of project purpose; a general property overview with discussion of project area geology; site conditions; and field observations. Subsequent sections present the elements of the field sampling methodology, laboratory analyses, analytical results, as well as regulatory review, project conclusions, and recommendations. Two figures, two tables, and two supporting appendices follow the main text. Figure 1 is the Site Location Map and Figure 2 is the Site Sample Plot Plan. Table 1 presents the sample source information. Table 2 presents the analytical results for the soil samples. Appendix A provides the soil boring logs and Appendix B contains a copy of the laboratory analytical report.

## 2 PROPERTY OVERVIEW

The Hazen High School property (Site) consists of six King County parcels with a total area of 24.4 acres. The property is currently occupied by the RSD Hazen High School.

### 2.1 BACKGROUND

On October 7, 2011 EHSI completed a UST Site Assessment for the Site. EHSI responded to a request from the RSD to assist with the management of petroleum hydrocarbon contamination discovered during the removal and replacement of a 10,000-gallon heating oil UST. Three Kings Environmental (Three Kings), the UST removal/installation contractor discovered evidence of a petroleum release during the tank removal. Three Kings excavated and stockpiled approximately 80 cubic yards of potentially contaminated soil from the UST removal excavation. An EHSI geologist collected closure soil samples from the UST removal excavation sidewalls, the clean and contaminated soil stockpiles, and water in the excavation.

Analysis of the soils confirmed the presence of diesel-range TPH in the contaminated stockpile. The analytical results for the samples collected from the UST removal excavation sidewalls and clean stockpile did not have detectable concentrations of diesel- to oil-range TPH. The water sampled from the UST removal excavation returned a result of 1,300 µg/L oil-range TPH and 6,900 µg/L diesel-range TPH. Following the pumping and off-site disposal of 1,268 gallons of impacted water from the UST removal excavation, recharge into the excavation was apparent which suggested the presence of a shallow aquifer.

## 3 SCOPE OF FIELD SERVICES

EHSI supervised the drilling of three soil borings within the Site on October 24, 2011. Environmental Drilling, Inc. (EDI), of Snohomish, Washington provided drilling services. Soil samples collected from the three Site soil borings were submitted to FBI for analysis.

FBI is a Washington Department of Ecology accredited analytical laboratory. The following sections provide a description of the fieldwork for the Phase II ESA.

### 3.1 SOIL BORING LOCATIONS

The focus of the Phase II ESA was to evaluate potential impacts to shallow groundwater (if present) from a release at the Site former heating oil UST.

EHSI placed three soil borings in the following Site property locations described below and as depicted on Figure 2:

- Boring B-1 was drilled at the closest practical approach to the south side of the former heating oil UST removal excavation;
- Boring B-2 was positioned at the closest practical approach to the west of the former UST removal excavation;
- Boring B-3 was drilled at the closest practical approach to the northeast of the heating oil UST removal excavation;

### 3.2 SUBSURFACE SAMPLING PROCEDURE AND BORING LOGGING

An EHSI Washington state-licensed geologist directed all drilling and soil logging activities.

Soil borings B-1 through B-3 were drilled using a truck-mounted B-61 hollow stem auger drill rig. EDI drilled soil boring B-1 to a depth of 36 feet BGS. Boring B-2 was drilled to a depth of three feet BGS. Boring B-3 was drilled to a depth of 17 feet BGS.

EHSI field personnel collected discrete soil samples for soil classification continuously at two to five-foot intervals. EDI provided a split-spoon soil sampler to collect the samples. The soil samples were placed in laboratory prepared sterilized four ounce jars.

Soil encountered during drilling was classified in accordance with the USCS. EHSI field personnel used visual and olfactory methods to screen all soil samples retrieved during drilling operations. EHSI field personnel recorded pertinent geologic and hydrogeologic observations on soil boring logs provided in Appendix A. Table 1 provides a summary of the sources for the samples submitted for chemical analysis.

### 3.3 SAMPLING DOCUMENTATION

EHSI documented all field activities associated with soil sampling on boring logs and in a field notebook. Documentation outlined a comprehensive discussion of field observations including field parameter measurements, and any problems encountered. All soil sample containers were labeled with the following information:

- Project identification number;
- Sample date and time;
- Sample identification number; and
- Sampler's name.

Each soil sample collected was given a unique identification number as described below:

Soil boring\ Sample Depth: For example, sample B-1-4 is a sample collected at the Site from Soil boring #1 (B-1) at the sample interval depth of three to four feet BGS.

The sample chain-of-custody forms included an EHSI project identification number, the sampler's name, sample identification codes, number of containers, date, and time the sample was collected, and requested sample analyses. EHSI included the completed chain-of-custody form with the samples sent to the analytical laboratory.

### 3.4 DECONTAMINATION PROCEDURES

All non-disposable sampling equipment, including the split-spoon soil sampler, was decontaminated prior to and after each sampling operation. The specific steps used for decontamination of the sampling equipment were:

- Rinse and pre-clean equipment in potable water;
- Wash and scrub equipment with non-phosphate based detergent and potable water;
- Rinse with potable water;
- Rinse in deionized water; and
- Air-dry between sampling.

### 3.5 SAMPLE HANDLING AND SHIPPING

EHSI field personnel checked all sample jars for completeness and cap tightness and then placed the samples upright in a cooler chilled with ice. All samples collected were hand-delivered under chain-of-custody protocol to the FBI laboratory in Seattle.

### 3.6 LABORATORY PROTOCOL

EHSI submitted one composite soil sample collected from the Site subsurface to FBI for analyses. FBI analyzed the sample for diesel- to oil-range TPH by Washington State Test Method NWTPH-Dx.

## 4 INVESTIGATION RESULTS

### 4.1 GEOLOGY

The dominant geological feature of the landscape in this portion of the King County is Vashon till (Pleistocene). The Vashon till is made up of predominantly fine-grained deposits consisting of unsorted and unstratified glacial sediments from clay to boulder in size that vary in compaction and composition throughout the Puget Sound. The Vashon till is made up of both subglacial and ablation components. The subglacial consists of unsorted gravel in a matrix of sandy silt and clay, commonly called hardpan. The ablation is till, brown sandy and gravelly soil accompanied by a few boulders (Jones 1998).

### 4.2 SUBSURFACE CONDITIONS

The subsurface materials encountered at boring B-1 consisted of a hard, dark gray, silt, sand, and gravel interpreted as glacial till to the maximum exploration depth of 36 feet BGS. Soil conditions at boring location B-2, consisted of approximately three feet of pea gravel fill material. The presence of the pea gravel suggested the possibility of buried utilities at that location and the boring was abandoned. Soils encountered at boring B-3 in the drive area to the northeast of the UST removal excavation consisted of approximately six feet of soft silt and sand overlying hard, dark gray, sand, silt, and gravel till (GM) to the maximum exploration depth of 17 feet BGS. The details of the subsurface geology are documented in soil boring logs provided in Appendix A.



#### 4.3 GROUNDWATER

No groundwater was encountered at any of the boring locations to the maximum exploration depth of 36 feet BGS.

#### 4.4 FIELD OBSERVATIONS

EHSI field personnel did not note visual or olfactory evidence of potential soil contamination at any of the soil borings.

#### 5 ANALYTICAL RESULTS

Analytical results indicate that 65 mg/kg diesel-range TPH exists in the composite soil sample from borings B-1 and B-3 at 12 feet BGS (Table 2). No oil-range TPH was detected in the composite sample. Appendix B contains a copy of the laboratory analytical report.

#### 6 REGULATORY FRAMEWORK

All soil analytical results were compared to the MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses. State regulators and environmental professionals use MTCA Cleanup Levels as a baseline to evaluate concentrations of contamination in soil. The MTCA Cleanup Levels are the concentration standards where, if exceeded, the State of Washington regulators may judge that a cleanup action is warranted.

The diesel-range TPH detected at borings B-1 and B-3 (65 mg/kg diesel) is compliant with the MTCA Method A Soil Cleanup Level of 2,000 mg/kg for Unrestricted Land Use.

#### 7 PHASE II ESA CONCLUSIONS

EHSI's did not encounter a shallow groundwater table to a depth of 36 feet BGS in the area of the former UST removal excavation. This information confirms that the water encountered in the heating oil UST removal excavation was a perched condition and not representative of the local shallow aquifer.

The concentration of diesel-range TPH (65 mg/kg) detected in the composite soil sample from borings B-1 and B-3 further demonstrates that Site soils are in compliance with MTCA Cleanup regulations.

#### 8 PHASE II ESA RECOMMENDATIONS

Based on the lack of shallow groundwater near the replaced heating oil UST-hold and soil sample results that were compliant with regulatory cleanup levels, no additional action is warranted at this time.

#### 9 REFERENCES


Washington State Model Toxics Control Act Cleanup Regulation—Chapter 173-340 WAC. Washington State Department of Ecology, Toxics Cleanup Program, Publication Number 94-06. Updated October 12, 2007.

Jones, M. A. 1998. *Surficial Hydrogeologic Units of the Puget Sound Aquifer System, Washington*; United States Geological Survey Professional Paper 1424-C.

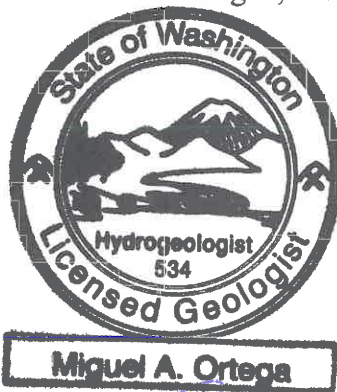
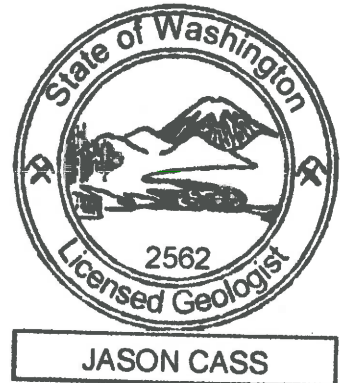
USGS. 1981. Renton, Washington, 7½-Minute Topographic Quadrangle Map, United States Geologic Survey, Denver, Colorado.

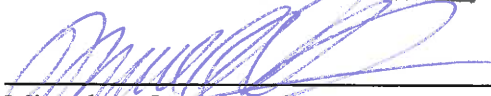
10 SIGNATURE

This Phase II ESA Final Report was prepared by the undersigned.

  
\_\_\_\_\_  
Jason Cass, L.G.  
Washington Licensed Geologist; License #2562.

  
\_\_\_\_\_  
Date



  
\_\_\_\_\_  
Miguel A. Ortega, L.G.  
Washington Licensed Geologist (Hydrogeology specialty); License #534.

  
\_\_\_\_\_  
Date

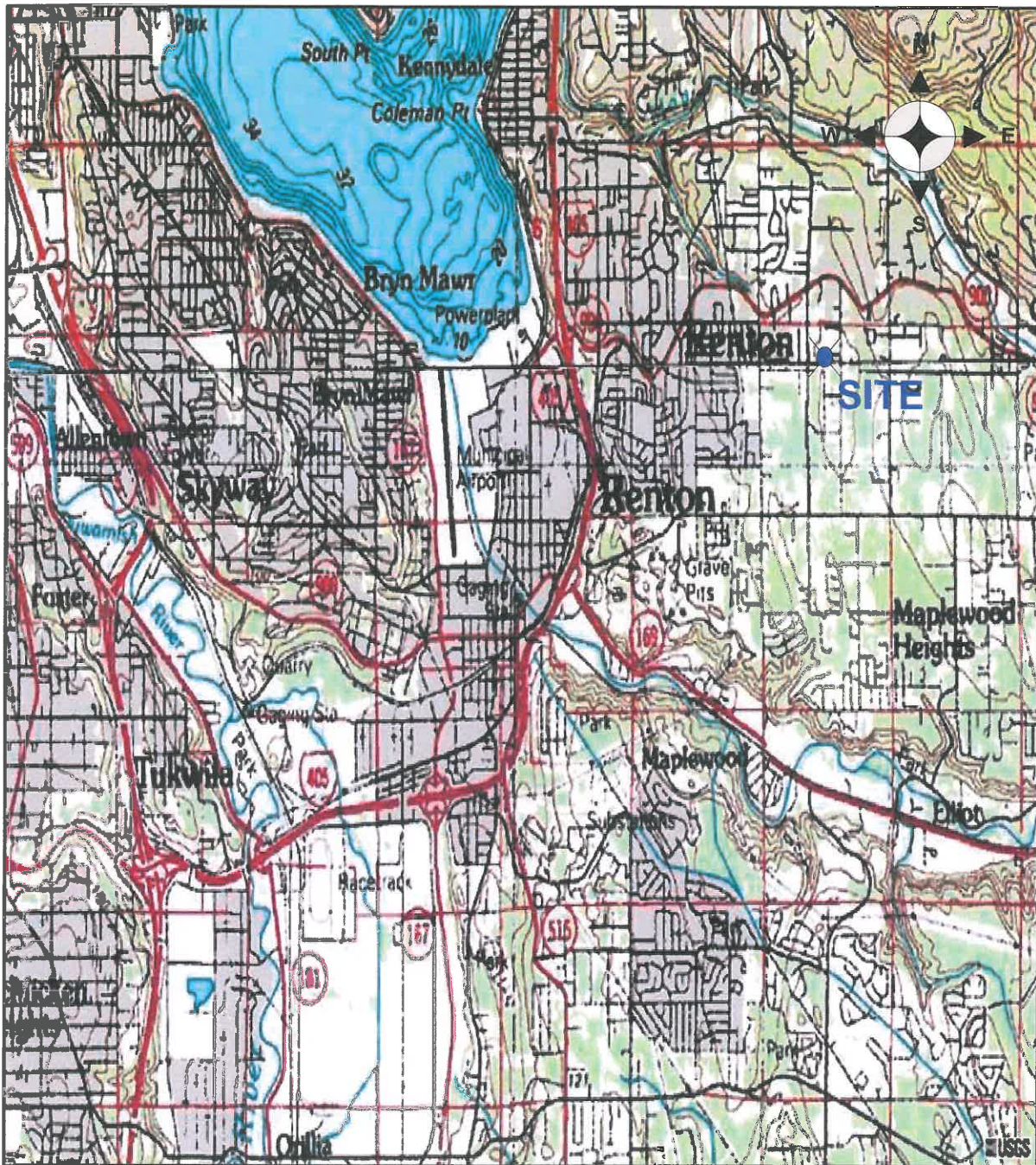
## 11 PROJECT LIMITATIONS

The conclusions presented in this report are professional opinions based upon visual observations and physical testing. This report is intended exclusively for the purpose outlined herein for the site location and project indicated. This report is for the sole use of our client, the Renton School District #403. Opinions and conclusions presented herein apply to site conditions existing at the time of execution of a Phase II ESA and do not necessarily apply to future changes or other prior conditions at the site of which EHSI is not aware and has not had the opportunity to evaluate. The scope of services performed in the execution of this Phase II ESA may not be appropriate to satisfy the needs of other users, and any use or re-use of the document or the findings, conclusions, or recommendations presented is at the sole risk of said user.

EHSI's objective is to perform our work with care, exercising the customary thoroughness and competence of environmental consulting professionals in the relevant disciplines. Furthermore, we carried out our services in accordance with the standard for professional services by a consulting firm at the time those services were rendered. It is important to recognize that even the most comprehensive scope of services may fail to detect environmental liability on a particular site. Therefore, EHSI cannot act as insurers and cannot "certify or underwrite" that a site is totally free of environmental liability. In addition, no expressed or implied representation or warranty is included or intended in our report except that our work was performed within the limits prescribed by our client, and with the customary thoroughness and competence of our profession.

## **FIGURES**





**FIGURE 1**

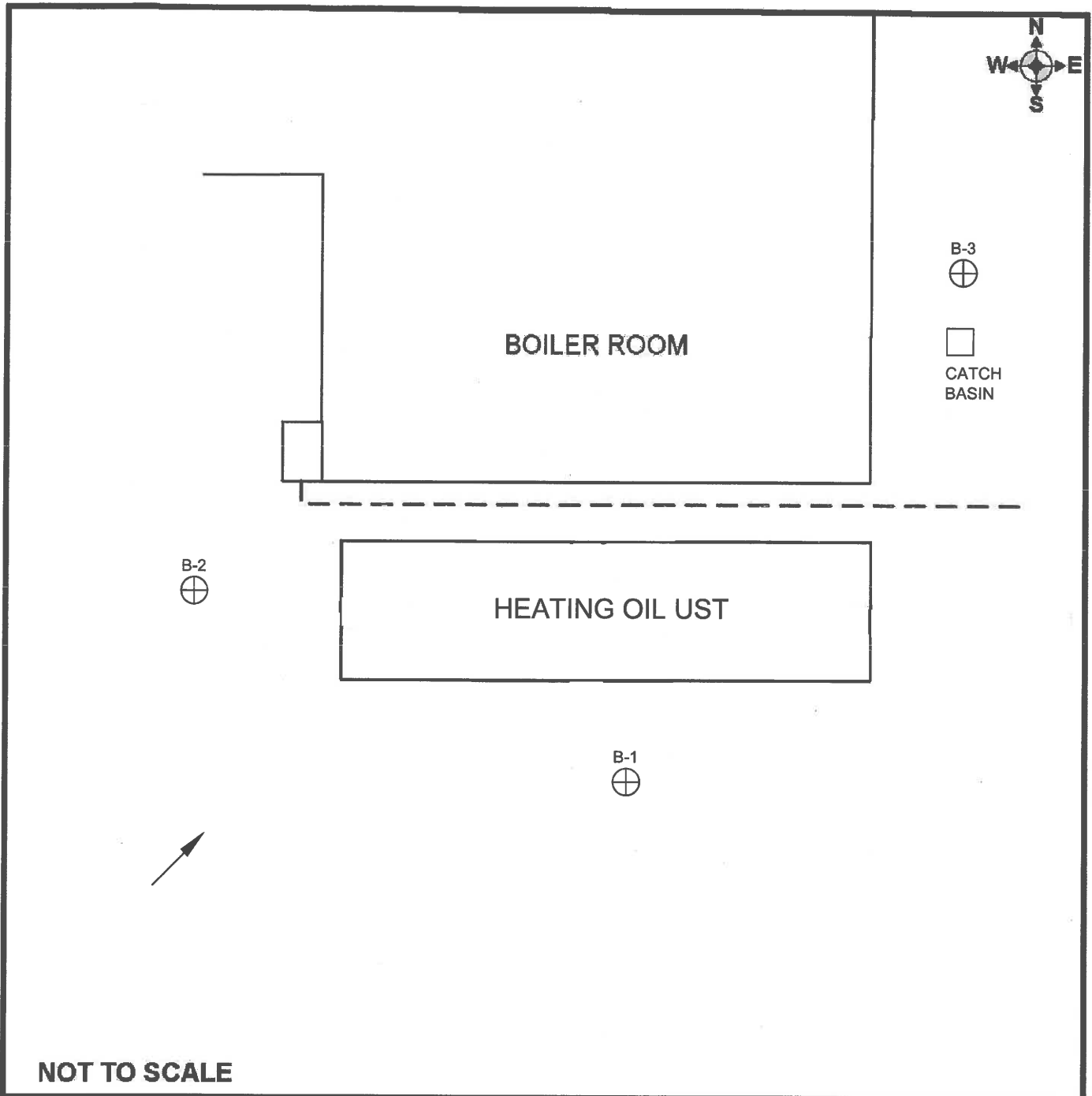
**HAZEN HIGH SCHOOL  
PHASE II SITE ASSESSMENT  
1101 HOQUIAM AVENUE NE  
RENTON, WASHINGTON 98059**

**SITE LOCATION MAP**

Reference: US Geological Survey  
Renton, Washington  
7.5 Minute Quadrangle  
Photo revised 1980

**EHS International, Inc.**

**December 2011**



#### EXPLANATION



NATURAL GAS LINE



SOIL BORING LOCATION



INFERRED GROUNDWATER  
FLOW DIRECTION

#### FIGURE 3

HAZEN HIGH SCHOOL  
PHASE II SITE ASSESSMENT  
1101 HOQUIAM AVENUE NE  
RENTON, WASHINGTON 98056

SITE SAMPLE PLOT PLAN

**EHS International, Inc.**

November 2011

## **TABLES**

**TABLE 1: SAMPLE SOURCE INFORMATION**

<b>SOIL SAMPLE ID</b>	<b>SOURCE LOCATION</b>	<b>SAMPLE DEPTH (FEET BGS<sup>1</sup>)</b>
B-1/2-12	Composite from soil borings B-1, 12 0 feet BGS and B-3, 12.0 feet, positioned to south and north of tank- hold.	11.5 – 12.0

**EXPLANATION**<sup>1</sup>BGS-below ground surface**TABLE 2 – TPH Results**

<b>Soil Sample ID and Sample Depth</b>	<b>NWTPH-Dx<sup>1</sup> Oil-range (mg/kg)</b>	<b>NWTPH-Dx Diesel-range (mg/kg)</b>
MTCA METHOD A CLEANUP LEVEL <sup>2</sup>	2,000	2000
B-1/2-12	ND <sup>3</sup>	65

**EXPLANATION**<sup>1</sup>NWTPH-Dx, Washington State Department of Ecology Test Method for quantifying the presence of diesel to oil-range total petroleum hydrocarbons (TPH);<sup>2</sup>Washington Model Toxics Control Act (MTCA) Method A Soil Cleanup Levels For Unrestricted Land Use (WAC 173-340-745);<sup>3</sup>ND - Not Detected, below test method detection limit of 50 mg/kg for diesel-range TPH and 250 mg/kg oil-range TPH.



## **APPENDIX A: SOIL BORING LOGS**

## SOIL BORING RECORD

Boring # B-1  
 Total depth 36 feet  
 Sheet 1 of 2

Project name <u>Hazen High School</u>	Drilling Contractor <u>EDI</u>	Drilling method <u>Hollow-stem Auger</u>
Project number <u>10316-02</u>	Location <u>South of UST-hold.</u>	Sampling method <u>Split spoon soil sampler</u>
Client <u>Renton School District</u>	Ground elevation <u>N/A</u>	
EHSI rep. <u>J. Cass</u>	Start date <u>10/24/11</u>	Air monitoring (Y/N) <u>No</u>
	Compl. date <u>10/24/11</u>	Instrument(s) _____

Instrument reading (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
N/A				1		Asphalt
				2		Dark brown medium-grained SAND, with GRAVEL dry (Fill)
				3		
N/A				4	GW	Hard gray, sand, silt, and gravel (Qvt), dry, no odor.
				5		
				6		
N/A				7		
				8	GW	Hard gray, sand, silt, and gravel (Qvt), dry, no odor.
				9		
N/A				10		
				11		
				12	GW	Hard gray, sand, silt, and gravel (Qvt), dry, no odor.
N/A				13		
				14		
				15		
N/A				16	GW	Hard gray, sand, silt, and gravel (Qvt), dry, no odor.
				17		
				18		
N/A				19		
				20	GW	Hard gray, sand, silt, and gravel (Qvt), dry, no odor.

## SOIL BORING RECORD

Boring # B-1  
 Total depth 36 feet  
 Sheet 2 of 2

Project name <u>Hazen High School</u>	Drilling Contractor <u>EDI</u>	Drilling method <u>Hollow-stem Auger</u>
Project number <u>10316-02</u>	Location <u>South of UST-hold.</u>	Sampling method <u>Split spoon soil sampler</u>
Client <u>Renton School District</u>	Ground elevation <u>N/A</u>	
EHSI rep. <u>J. Cass</u>	Start date <u>10/24/11</u>	Air monitoring (Y/N) <u>No</u>
	Compl. date <u>10/24/11</u>	Instrument(s) _____

Instrument reading (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
N/A				21	GW	Hard gray, sand, silt, and gravel (Qvt), dry, no odor.
				22		
				23		
				24		
N/A				25	GW	Hard gray, sand, silt, and gravel (Qvt), dry, no odor.
				26		
				27		
				28		
N/A				9	GW	Hard gray, sand, silt, and gravel (Qvt), dry, no odor.
				30		
				31		
				32		
N/A				33	GW	Hard gray, sand, silt, and gravel (Qvt), dry, no odor.
				34		
				35		
				36		
				37		Probe boring terminated at 36 feet bgs. The borehole was backfilled from bottom of boring to the surface with bentonite chip seal, and capped at the surface with asphalt cold patch. Groundwater was not encountered during drilling.
				38		
				39		
				40		

## SOIL BORING RECORD

Boring # B-2  
 Total depth 3 feet  
 Sheet 1 of 1

Project name <u>Hazen High School</u>	Drilling Contractor <u>EDI</u>	Drilling method <u>Hollow-stem Auger</u>
Project number <u>10316-02</u>	Location <u>West of UST-hold.</u>	Sampling method <u>Split spoon soil sampler</u>
Client <u>Renton School District</u>	Ground elevation <u>N/A</u>	
EHSI rep. <u>J. Cass</u>	Start date <u>10/24/11</u>	Air monitoring (Y/N) <u>No</u>
	Compl. date <u>10/24/11</u>	Instrument(s) _____

Instrument reading (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
N/A				1		Asphalt
				2		Dark gray pea gravel, dry (Fill)
				3		
				4		Boring terminated at 3 feet BGS due to concerns about possible utilities.
				5		
				6		
				7		
				8		
				9		
				10		
				11		
				12		
				13		
				14		
				15		
				16		
				17		
				18		
				19		
				20		

## SOIL BORING RECORD

Boring # B-3  
 Total depth 17 feet  
 Sheet 1 of 1

Project name <u>Hazen High School</u>	Drilling Contractor <u>EDI</u>	Drilling method <u>Hollow-stem Auger</u>
Project number <u>10316-02</u>	Location <u>South of UST-hold.</u>	Sampling method <u>Split spoon soil sampler</u>
Client <u>Renton School District</u>	Ground elevation <u>N/A</u>	
EHSI rep. <u>J. Cass</u>	Start date <u>10/24/11</u>	Air monitoring (Y/N) <u>No</u>
	Compl. date <u>10/24/11</u>	Instrument(s) _____

Instrument reading (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
N/A				1		Asphalt
				2		Dark brown medium-grained SAND, with GRAVEL dry (Fill)
				3	GW	Soft gray, sand, silt, and gravel (Qvt), dry, no odor.
N/A				4		
				5		
				6		
N/A				7	GW	Hard gray, sand, silt, and gravel (Qvt), dry, no odor.
				8		
				9		
				10		
N/A				11	GW	Hard gray, sand, silt, and gravel (Qvt), dry, no odor.
				12		
				13		
				14		
N/A				15	GW	Hard gray, sand, silt, and gravel (Qvt), dry, no odor.
				16		
				17		
				18		
				19		Boring terminated at 17 feet BGS. No groundwater encountered.
				20		

## **APPENDIX B: LABORATORY ANALYTICAL REPORT**

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

November 18, 2011

RECEIVED

NOV 19 2011

EHS-International, Inc.

Jason Cass, Project Manager  
EHSI  
13228 NE 20<sup>th</sup> St., Suite 100  
Bellevue, WA 98005

Dear Mr. Cass:

Included are the results from the testing of material submitted on November 14, 2011 from the 10316-02 Hazen H.S., F&BI 111173 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures  
c: Shelby Nelson  
EHS1118R.DOC

FRIEDMAN & BRUYA, INC.

---

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 14, 2011 by Friedman & Bruya, Inc. from the EHSI 10316-02 Hazen H.S., F&BI 111173 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID  
111173-01

EHSI  
B1/2-12

All quality control requirements were acceptable.



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/18/11

Date Received: 11/14/11

Project: 10316-02 Hazen H.S., F&BI 111173

Date Extracted: 11/14/11

Date Analyzed: 11/14/11

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-Dx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 53-144)
B1/2-12 111173-01	65 x	<250	118
Method Blank 01-2063 MB	<50	<250	113

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/18/11

Date Received: 11/14/11

Project: 10316-02 Hazen H.S., F&BI 111173

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

Laboratory Code: 111159-02 (Matrix Spike)

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	97	99	64-133	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	98	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.

401

(b) (5) DPP, (b) (5) ACP

Warden H. S.

REMARKS

Phone # [425-455-2559] Fax #

4

**Rush charges authorized by:**

☐ Will call with instructions

FORMS\COO\COO.DOC

FORMS\COO\COO.DOC



13228 NE 20<sup>th</sup> Street, Suite #100  
 Bellevue, Washington 98005  
 Telephone: (425) 455-2959  
 Toll Free: (800) 666-2959  
 Facsimile: (425) 646-7247  
 Web Site: [www.ehsintl.com](http://www.ehsintl.com)

## LETTER OF TRANSMITTAL

**TO:** Renton School District #403

Attn: Mr. Jonathan Stine

7812 South 124<sup>th</sup> Street

Seattle, Washington 98178

Date: December 14, 2011

EHSI Project: 10316

Renton School District #403

Hazen High School

Phase II Environmental Site Assessment  
 Final Report

WE ARE SENDING: ☒ **Attached** ☐ Under Separate Cover via **USPS** THE FOLLOWING ITEMS:

☒ **Reports**

☐ IH Investigation Report

☐ Specifications

☐ Proposal

☐ Plans

☐ Manual

☐ Electronic Copy

☐ Change Order / Modification

COPIES	DATE	NO.	DESCRIPTION
Two (2)	12/14/11	N/A	RSD Hazen HS Phase II Environmental Site Assessment Final Report

THESE ARE TRANSMITTED as checked below:

☐ For Approval

☒ **For Your Information**

☐ Approved as Submitted

☒ **As Requested**

☐ For Your Use

☐ Approved as Noted

☐ For Review

☐ Return To EHSI

### REMARKS:

Dear Mr. Stine;

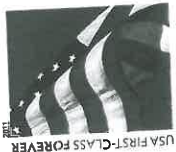
Enclosed please find two (2) bound copies of the Hazen High School Phase II ESA Final Reports for the above listed project for your files.

If you have any questions or require additional information, please do not hesitate to contact me at (425) 455-2959 or by email at [miguelo@ehsintl.com](mailto:miguelo@ehsintl.com).

**COPY TO:** #10316 Project File

**SIGNED:**

  
 Miguel Ortega, LG, Project Manager



**RECEIVED**

DEC 14 2011

EHS-International, Inc.

*Mailed on*

*by SAN*

**FROM:**

13228 NE 20<sup>th</sup> Street, Suite 100  
Bellevue, Washington 98005-2049  
Phone: 425 455 2959  
Fax: 425 646 7247  
[www.ehsintl.com](http://www.ehsintl.com)



**EHS-International, Inc.**

**TO:**

**Renton School District #403**

**Attn: Mr. Jonathan Stine**

**7812 South 124<sup>th</sup> Street**

**Seattle, WA 98178**