

Site Assessment Report

Former Teapot Dome Property – 14691 Yakima Valley Highway, Zillah, WA
AEC Project Number 12-061

Prepared for:

Washington State Department of Ecology
15 West Yakima Avenue, #200
Yakima, Washington 98901

October 23, 2012

Prepared by:



Anderson Environmental Contracting, LLC
705 Colorado Street Kelso, Washington 98626
p: (360) 577-9194 f: (360) 577-9198
www.aecllc.net

TABLE OF CONTENTS

Section	Page
I. Introduction	3
II. Description of Property	3
III. Regional Geology and Hydrogeology	3
IV. Fieldwork	3
A. UST Decommissioning Activities	3
B. Subsurface Conditions	4
C. Field Screening and Sample Collection	4
V. Analytical Results	5
A. Confirmation Soil Samples	5
B. Discussion	5
VI. Recommendations	6

FIGURES

Figure 1 – Site Location Map

Figure 2 – Soil Sample Locations

TABLES

Table 1 – Summary of Soil Analytical Results

APPENDICES

Appendix A – UST Recycling Documentation

Appendix B – Laboratory Reports and Chain-of-Custody Documentation

I. Introduction

Anderson Environmental Contracting, LLC (AEC) has prepared this report to document site assessment and underground storage tank (UST) decommissioning activities at the above referenced site shown on Figure 1. Work is being conducted under a signed contract with the Washington State Department of Ecology (Ecology).

II. Description of Property

The Teapot Dome gas station was constructed in 1922 and operated as a retail gas station. The site is located on Yakima Valley Highway (Highway 12) which used to be the primary road through Zillah, Washington prior to construction of State Route 82 (I-82) in the 1980's. The station building was constructed in the shape of a teapot. It was considered an example of novelty architecture and was listed on the U.S. National Register of Historic Places and became a roadside attraction. After the construction of I-82 the City of Zillah purchased the site and relocated the Teapot Dome building to a new gas station located on First Avenue in Zillah, Washington.

The topography of the subject site is relatively flat. The nearest surface water body is the Yakima River which is located approximately 1/4 mile southwest of the site (Figure 1). Land use near the site is generally a mixture of residential and irrigated agricultural properties.

The site is currently unoccupied. Prior to decommissioning, fuel dispensers and vent lines were present at the site. All other former structures at the site were removed prior to when AEC began work at the site.

III. Regional Geology and Hydrogeology

The site is located within the Yakima River basin which encompasses approximately 6,000 square miles in south-central Washington. The basin is separated into several broad valleys by east-west trending anticlinal ridges. The valley floors slope gently towards the Yakima River. Few perennial tributary streams traverse these valleys. Groundwater generally flows towards these systems.

Based on review of geologic maps, the local geology within the Yakima River basin is comprised of Pleistocene glacial outburst flood deposits and loess/dune sand deposits. Irrigated agriculture is the principal economic activity in the basin.

IV. Fieldwork

A. UST Decommissioning Activities

On September 10-12, 2012, AEC performed tank decommissioning and site assessment work at the site. Decommissioning activities involved the following tasks:

- Excavated the overburden soil overlying the USTs.
- Removed the fuel dispenser from the ground and underlying product lines.
- Removed a total of three USTs from the ground from a single excavation.

- Stockpiled the excavated soil in a stockpile located on the northern end of the property.
- Collected confirmation soil samples from the sidewalls and floor of the UST excavation, under the former product line, and under the former dispensers.
- Collected five soil samples from the stockpile.
- Recycled the tank and metal fuel lines at a licensed metal recycling facility (Pacific Steel and Recycling) in Yakima, Washington.

AEC used a Cat 320 tracked excavator to remove soil, three USTs, product lines, former fuel dispensers and ancillary piping from the site. Once the USTs were removed from the ground they were cut open, cleaned, observed for signs of holes/corrosion/pitting, and placed on a trailer and secured for transportation to a metal recycling facility in Yakima, Washington. Each tank had an estimated capacity of 10,000 gallons. There were no holes observed in any of the tanks. Some minor pitting and corrosion was observed on the outside of the tanks. A copy of the UST recycling documentation is included in Appendix A.

Sludge and rinse water generated from cleaning the three USTs was contained in labeled 55-gallon drums. The drums are currently stored at the site behind security fencing pending disposal. The excavation cavity has not been backfilled.

B. Subsurface Conditions

The upper eleven feet of soil encountered in the excavation consisted of tan colored silt and fine sand. The silt has a low plasticity and is composed of variable amounts of fine sand and organic material with less than 10% fine subrounded gravel. The soil was dry to damp. Groundwater was not present in the excavation.

C. Field Screening and Sample Collection

Field screening consisted of volatile organic vapor measurements using a photoionization detector (PID), sheen testing, visual observations (staining, etc.), and olfactory observations. A portion of each soil sample was placed in a sealed Zip-Lock baggie. The tip of the PID was inserted into the zip-lock bag in the airspace above the soil sample and the PID measurement was recorded. The PID was calibrated before use at the site to a test gas standard consisting of 100 ppmv isobutylene. Sheen testing consisted of placing a small portion of soil in clear water and observing the water for the presence of hydrocarbon sheen. Because several factors can affect PID readings (e.g. moisture, temperature, and background conditions), AEC determined that a value of 1 ppm or greater may indicate the presence of organic vapors originating from contaminants at the site.

The only indication of hydrocarbon impacted soil in the UST excavation cavity was a localized area of gray colored near the fill port of the middle UST. This soil exhibited a

faint hydrocarbon odor with a PID reading up to 8 ppm. AEC removed this soil by excavation and then collected confirmation soil samples. Sample X2-11 was collected from the soil underlying the middle UST at the approximate location of the fill port. AEC also collected sidewall sample X4-8 to assess the lateral extent of contamination, if present. The only other field indication of hydrocarbon impacts was observed under the former dispensers. The soil under the former dispenser had a faint hydrocarbon odor and PID measurements up to 20 ppm. AEC collected a confirmation soil sample from under the dispenser island piping at the location that had the highest PID reading (sample Dispenser1-2). There was no field indication of hydrocarbon impacts in any other locations within the UST excavation cavity, under the former product lines, or in the soil stockpile.

The location of the confirmation samples is shown on Figure 2. The soil samples were placed in a cooler packed with ice along with chain-of-custody documentation. The cooler was shipped to Friedman & Bruya Laboratory in Seattle, Washington for analysis.

V. Analytical Results

The confirmation soil samples collected from the site were analyzed for hydrocarbon identification using Northwest Method NWTPH-HCID. Follow up quantification analyses included TPH as diesel using Northwest Method NWTPH-Dx and BTEX using EPA Method 8021. A copy of the laboratory report along with the chain-of-custody documentation is included in Appendix B.

A. Confirmation Soil Samples

Soil analytical results are reported as milligrams per kilograms (mg/kg) and are summarized in Table 1. Analytical results of the HCID analysis indicated that sample X4-8 and Dispenser1-2 had a detection of diesel. AEC requested that the laboratory run quantification analyses listed above on the two samples. Results indicated that TPH as diesel (67 mg/kg and 420 mg/kg, respectively) were detected in the samples. The MTCA Method A cleanup level for diesel is 2,000 mg/kg. There was no detection of BTEX in either sample above the laboratory's respective method reporting limits. There was no detection of TPH as gasoline, diesel, or oil in all the other confirmation samples and stockpile samples.

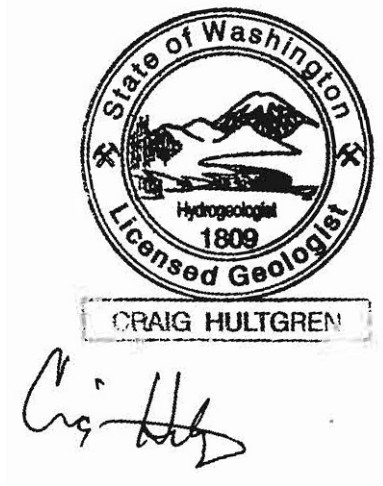
B. Discussion

Results of the soil sampling performed at the site by AEC indicate that a minor release of diesel occurred at the site near the fill port of the middle UST and under the product dispensers. Based on field observations, field screening methods and analytical data, the source of the diesel was likely from occasional overfills during product delivery (UST cavity) and fueling (dispenser). The MTCA Method A cleanup levels (summarized on Table 1) were not exceeded in any of the confirmation samples.

VI. Recommendations

Based on the results of the site assessment AEC makes the following recommends:

- The soil in the stockpile is clean and can be used as backfill. However, if stringent compaction standards are required for the site (i.e. 90% or greater), the soil in the stockpile may not be suitable as backfill as it lacks cohesive strength to achieve strict compaction standards. AEC recommends that the soil be used as clean fill for sites where compaction is not a priority.
- Dispose the investigation derived waste currently contained in labeled 55-gallons drums at the site at a licensed disposal facility.



Craig Hultgren, LHG
WA Site Assessor 879655

Table 1
Soil Analytical Results Summary (mg/kg)
Teapot Dome

Sample Identification	MTCA Method A Cleanup Level	X1-11 11	X2-11 1	X3-11 11	X4-8 8	X6-8 8	Dispenser1-2 2	Pipe1-2 2	Stock-1 0.5	Stock-2 0.5	Stock-3 0.5	Stock-4 0.5	Stock-5 0.5
Sample Depth (feet bgs)		11	1	11	8	8	2	2	0.5	0.5	0.5	0.5	0.5
Collecton Date		9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	7/14/2012	7/14/2012	7/14/2012	7/14/2012	7/14/2012
TPH-Gas	30/100 ¹	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
TPH-Diesel	2,000	50 U	50 U	50 U	67	50 U	420	50 U	50 U	50 U	50 U	50 U	50 U
TPH-Heavy Oil	2,000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Benzene	0.03	---	---	---	0.02 U	---	0.02 U	---	---	---	---	---	---
Toluene	7	---	---	---	0.02 U	---	0.02 U	---	---	---	---	---	---
Ethylbenzene	6	---	---	---	0.02 U	---	0.02 U	---	---	---	---	---	---
Total Xylenes	9	---	---	---	0.06 U	---	0.06 U	---	---	---	---	---	---

Notes:

--- = Not analyzed for this constituent

U = Undetected at laboratory method reporting limit (MRL) shown

¹ = Cleanup Level when benzene is present is 30 mg/kg and 100 mg/kg when benzene is not detected in all samples collected from the site.

Total Petroleum Hydrocarbons (TPH) as gasoline by Northwest Method NWTPH-HCID

TPH as diesel and oil by Northwest Method NWTPH-HCID and NWTPH-Dx

Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021B

mg/kg = milligrams per kilogram (ppm)

bgs = below ground surface

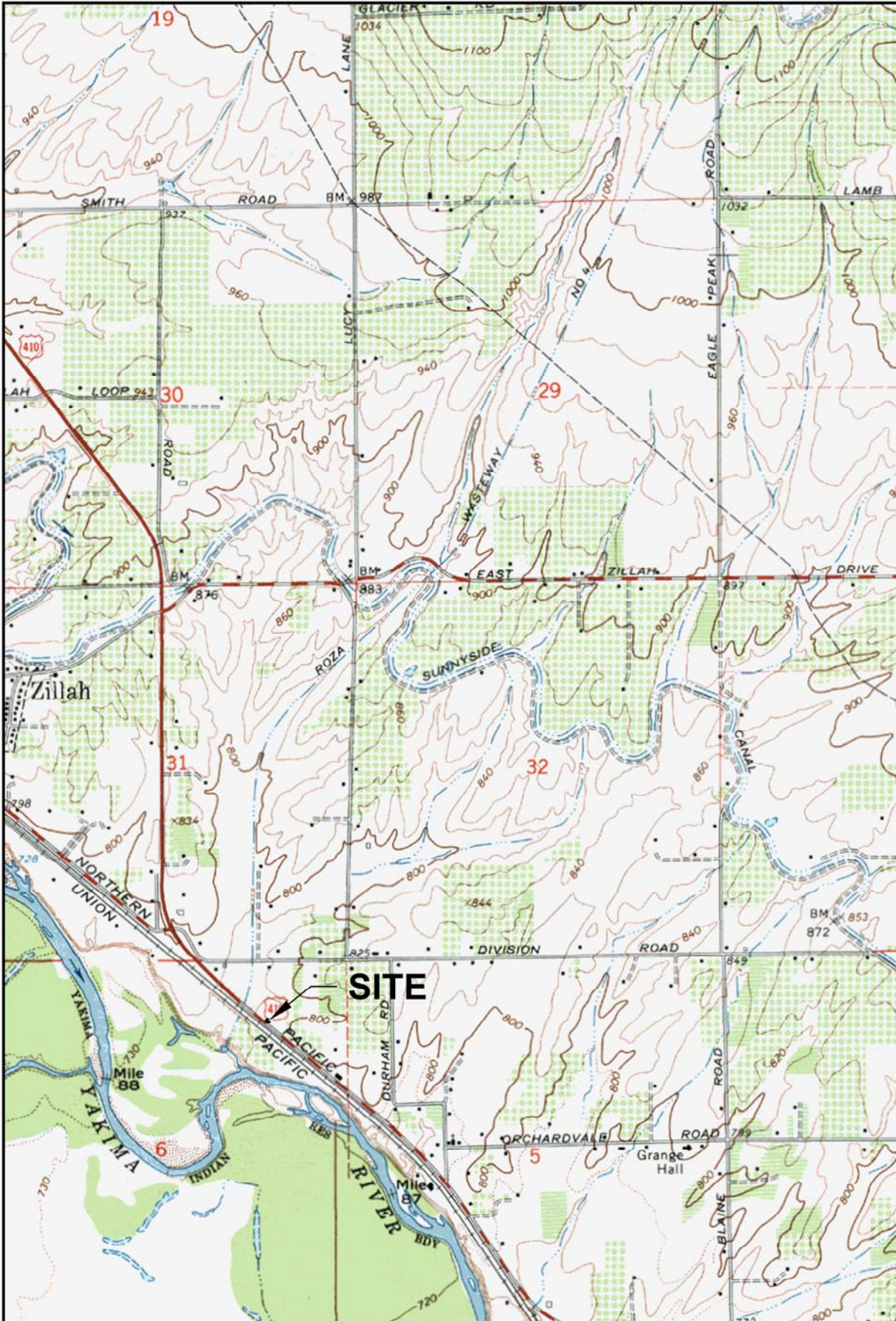


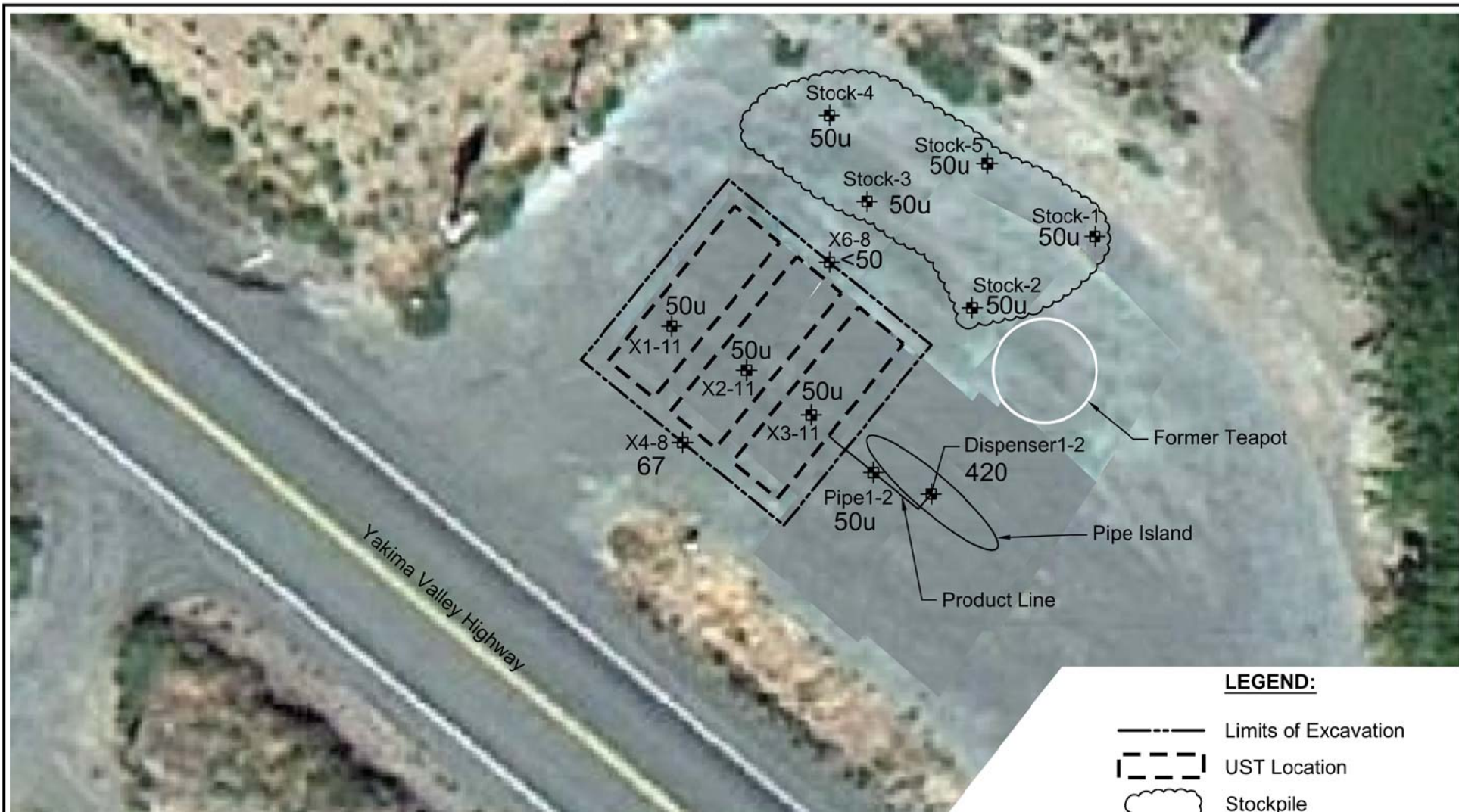
Figure 1
SITE LOCATION MAP
 Teapot Dome Site
 14691 Yakima Valley Highway
 Zillah, WA 98953

DATE: 9/21/12
 DWN: BCB
 CHK:
 APPROVED:
 PRJ. MGR: CH
 PROJECT NO: 12-061



NOTE(S):

1. USGS, GRANGER NW QUADRANGLE
 WASHINGTON - OREGON
 7.5 MINUTE SERIES (TOPOGRAPHIC)



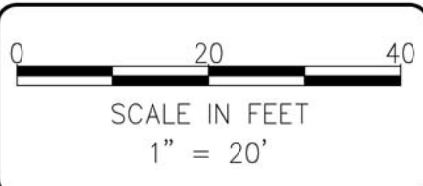
LEGEND:

- Limits of Excavation
- UST Location
- ☁ Stockpile
- X6-8 ⊕ Soil Sample Location

u = Undetected at MRL Shown

NOTE(S):

1. Aerial photograph (2011) provided by Google Earth™.



DATE: 1/3/12
 DWN: BCB
 CHK:
 APPROVED:
 PRJ. MGR: CH
 PROJECT NO:
 12-061

Figure 2
 SOIL SAMPLE LOCATIONS
 DRO IN SOIL (mg/kg)
 Teapot Dome Site
 14691 Yakima Valley Highway
 Zillah, WA 98953

APPENDIX A

UST RECYCLING DOCUMENTATION



PACIFIC STEEL & RECYCLING™

429 Butterfield Road PO Box 407 Yakima, WA 98907 (509 453 1842)

PURCHASE TICKET		2161783
PURCHASE DATE	09/12/12	
PURCHASE TYPE	CASH / CHECK	
CHECK NUMBER	1493746	
CHECK AMOUNT	\$2,822.40	
CASH AMOUNT	\$0.00	
LUCAS K	42	

PURCHASED FROM	42360
ANDERSON ENVIRONMENTAL CONTRACTING 705 COLORADO STREET KELSO, WA 98626	

Recycling hours Monday-Friday: 8am to 5pm / Saturday 8am to 12pm
Please verify your mailing address...an incorrect mailing address will delay your payment and may also incur a \$25 re-issuing fee.

QUANTITY		Description	PRICING		
Purchased	UOM		UOM	Per Unit	Amount
9160	LB	UNPREP IRON	LB	0.1050	961.80
8460	LB	UNPREP IRON	LB	0.1050	888.30
9260	LB	UNPREP IRON	LB	0.1050	972.30
TOTAL QUANTITY					26,880
			TOTAL AMOUNT		\$2,822.40

12.-061

TRANSACTION DATE AND TIME:09/12/12 12:53 PM

I, the undersigned, affirm under the penalty of law that the property that is subject to this transaction is not to the best of my knowledge stolen property.

SELLER SIGNATURE

WITNESS SIGNATURE (REQUIRED)

APPENDIX B

LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

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

September 25, 2012

Craig Hultgren, Project Manager
Anderson Environmental
705 Colorado Street
Kelso, WA 98626

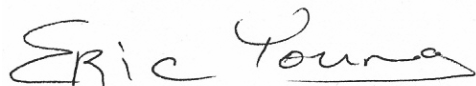
Dear Mr. Hultgren:

Included are the results from the testing of material submitted on September 14, 2012 from the Yakima - Teapot 12-061, F&BI 209206 project. There are 7 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.



Eric Young
Chemist

Enclosures
AEN0925R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 14, 2012 by Friedman & Bruya, Inc. from the Anderson Environmental Yakima - Teapot 12-061, F&BI 209206 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Anderson Environmental</u>
209206-01	X1-11
209206-02	X2-11
209206-03	X3-11
209206-04	X4-8
209206-05	X5-8
209206-06	X6-8
209206-07	X7-8
209206-08	Dispenser 1-2
209206-09	Pipe 1-2

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/25/12
Date Received: 09/14/12
Project: Yakima - Teapot 12-061, F&BI 209206
Date Extracted: 09/14/12
Date Analyzed: 09/18/12

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID
Results Reported as Not Detected (ND) or Detected (D)**

**THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE
WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION
WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT**

<u>Sample ID</u> Laboratory ID	<u>Gasoline</u>	<u>Diesel</u>	<u>Heavy Oil</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
X1-11 209206-01	ND	ND	ND	111
X2-11 209206-02	ND	ND	ND	117
X3-11 209206-03	ND	ND	ND	122
X4-8 209206-04	ND	D	ND	115
X6-8 209206-06	ND	ND	ND	110
Dispenser 1-2 209206-08	ND	D	ND	113
Pipe 1-2 209206-09	ND	ND	ND	119
Method Blank 02-1650 MB2	ND	ND	ND	109

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/25/12
Date Received: 09/14/12
Project: Yakima - Teapot 12-061, F&BI 209206
Date Extracted: 09/19/12
Date Analyzed: 09/19/12

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES
USING EPA METHOD 8021B**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
X4-8 209206-04	<0.02	<0.02	<0.02	<0.06	84
Dispenser 1-2 209206-08	<0.02	<0.02	<0.02	<0.06	85
Method Blank 02-1690 MB	<0.02	<0.02	<0.02	<0.06	102

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/25/12
Date Received: 09/14/12
Project: Yakima - Teapot 12-061, F&BI 209206
Date Extracted: 09/19/12
Date Analyzed: 09/19/12

**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 ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 53-144)
X4-8 209206-04	67	<250	106
Dispenser 1-2 209206-08	420	<250	105
Method Blank 02-1694 MB	<50	<250	109

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/25/12

Date Received: 09/14/12

Project: Yakima - Teapot 12-061, F&BI 209206

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
AND XYLENES
USING EPA METHOD 8021B**

Laboratory Code: 209253-08 (Duplicate)

Analyte	Reporting Units	(Wet Wt) Sample Result	(Wet Wt) Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	96	69-120
Toluene	mg/kg (ppm)	0.5	99	70-117
Ethylbenzene	mg/kg (ppm)	0.5	100	65-123
Xylenes	mg/kg (ppm)	1.5	100	66-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/25/12

Date Received: 09/14/12

Project: Yakima - Teapot 12-061, F&BI 209206

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

Laboratory Code: 209298-03 (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	102	105	64-133	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	105	58-147

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.

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

September 26, 2012

Craig Hultgren, Project Manager
Anderson Environmental
705 Colorado Street
Kelso, WA 98626

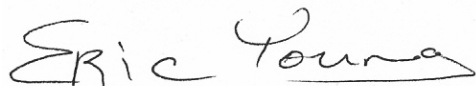
Dear Mr. Hultgren:

Included are the results from the testing of material submitted on September 19, 2012 from the Teapot PO 12-061, F&BI 209289 project. There are 3 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.



Eric Young
Chemist

Enclosures
AEN0926R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 19, 2012 by Friedman & Bruya, Inc. from the Anderson Environmental Teapot PO 12-061, F&BI 209289 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Anderson Environmental</u>
209289-01	Stock-1
209289-02	Stock-2
209289-03	Stock-3
209289-04	Stock-4
209289-05	Stock-5

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/26/12
Date Received: 09/19/12
Project: Teapot PO 12-061, F&BI 209289
Date Extracted: 09/21/12
Date Analyzed: 09/22/12

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID
Results Reported as Not Detected (ND) or Detected (D)**

**THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE
WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION
WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT**

<u>Sample ID</u> Laboratory ID	<u>Gasoline</u>	<u>Diesel</u>	<u>Heavy Oil</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
Stock-1 209289-01	ND	ND	ND	102
Stock-2 209289-02	ND	ND	ND	105
Stock-3 209289-03	ND	ND	ND	103
Stock-4 209289-04	ND	ND	ND	102
Stock-5 209289-05	ND	ND	ND	102
Method Blank 02-1750 MB	ND	ND	ND	104

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

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.

