

# UNDERGROUND STORAGE TANK REMOVAL AND SITE ASSESSMENT REPORT

5400 Airport Way South Seattle, Washington

Prepared for:

**Kelly-Moore Paint Company** 

San Carlos, California

Prepared by:

Amec Foster Wheeler Environment & Infrastructure, Inc.

600 University Street, Suite 600 Seattle, Washington 98101 (206) 342-1760

May 2015

Project No. 0146970060



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# UNDERGROUND STORAGE TANK REMOVAL AND SITE ASSESSMENT REPORT

5400 Airport Way South Seattle, Washington

#### 1.0 INTRODUCTION

This underground storage tank (UST) removal and site assessment report summarizes the discovery and decommissioning of a UST at the New Core Development Georgetown LLC (New Core) property (site), located at 5400 Airport Way in Seattle, Washington (Figure 1). The UST was discovered on March 5, 2015, during excavation work associated with an interim action soil cleanup at the site. The UST was a single walled steel tank with a capacity of approximately 500 gallons. Figures 2 and 3 show the site features, including the location of the UST prior to removal and the approximate extent of the tank excavation and subsequent soil removal.

The UST was removed by IO Environmental and Infrastructure, Inc. (IO), of Bellevue, Washington on March 11, 2015. Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) oversaw the removal of the UST and performed the UST decommissioning site assessment.

### 1.1 Purpose of This Report

Amec Foster Wheeler provided oversight of the removal activities and collected soil samples as part of a site assessment as required under the Washington State Department of Ecology (Ecology) requirements per Washington Administrative Code (WAC) 173-360-390. The purpose of this report is to document the activities associated with UST removal, confirmation soil sampling, and site assessment as required by Ecology regulations.

## 1.2 PHYSICAL SETTING

The site is located northeast of the intersection of South Lucile Street and Airport Way South, in the Georgetown neighborhood of Seattle, Washington (Figure 1). The property is bordered on the north and east by BNSF Railway Company tracks, on the west by Airport Way South and the Airport Way South overpass, and on the south by a brewery.

#### 1.3 BACKGROUND

The site has served a variety of industrial uses since the early 1900s. The site was previously owned by Kelly-Moore Paint Company (Kelly-Moore) who used it as a paint manufacturing facility.

Amec Foster Wheeler



Kelly-Moore discontinued paint production activities at the site in 2008, and sold the property to New Core Development in 2014. Kelly-Moore retained environmental liability for the site, and the site is currently enrolled in Ecology's Voluntary Cleanup Program (VCP) to remediate the site (VCP number NW2305). Available records indicate that at least 33 USTs have been removed from the site since the mid-1980s (AMEC Geomatrix, 2009 and 2011). Soil and groundwater contamination have been documented across the site from historical releases from USTs and associated piping, and other past industrial uses of the property.

This report fulfills reporting requirements for the site assessment associated with the discovery and decommissioning of the UST, but is only a small part of the overall interim action cleanup activities conducted in March of 2015. A Cleanup Action Plan (CAP) will be issued separately summarizing the interim action cleanup activities as part of the CAP, and a copy will be provided to Ecology.



## 2.0 UST DECOMMISSIONING AND CLOSURE METHODS

This section of the report describes the UST decommissioning and closure methods used at the site.

### 2.1 DISCOVERY AND NOTIFICATIONS

Prior to the discovery of the UST, soil samples collected from a soil excavation in March of 2015, near where the UST was discovered, contained total petroleum hydrocarbon (TPH) concentrations as high as 14,000 milligrams per kilogram (mg/kg) in the diesel range (TPH-D) and 3,000 mg/kg in the gasoline range (TPH-G). Due to the elevated TPH concentrations in soil, the excavation was expanded. It was during this second phase of soil excavation that the UST was discovered.

The UST was discovered on March 5, 2015. Ecology UST staff were immediately notified via telephone. On the same day, additional information was sent to Mr. Andrew Imke of Ecology regarding property and UST ownership, including details on the construction and capacity of the tank and the Site Assessor and UST Decommissioning license numbers of the Amec Foster Wheeler field supervisor. Due to the unplanned nature of the UST discovery, Mr. Imke granted a waiver of the 30-day waiting period normally required prior to decommissioning a UST. A copy of the waiver of the 30-day notice requirements is included in Appendix A.

The UST was located approximately 5 feet east of a series of underground pipes that were awaiting removal, along with associated petroleum contaminated soil. These pipes were left in place following the decommissioning of nine USTs in 2009 (AMEC Geomatrix, 2010). The pipes could not be removed completely at that time because they ran beneath a building. That building was demolished in February 2015, allowing for the remaining piping and associated contaminated soil to be removed (Figure 2). Because the UST was covered by two separate concrete slabs, the tank is assumed to predate the buildings constructed above it. There was no piping connected to the UST or in the immediate vicinity. Soil surrounding the tank is a sandy fill material.

Because the tank was hit inadvertently with a large excavator, the tank was dislodged and was partially damaged. Upon inspection, a small quantity of fluid was visible through a hole ripped in the top of the tank, and several small pin-holes were visible through the rusted metal tank walls. The fluid in the tank appeared to be rusty water, and some of it was observed leaking through the pin holes in the lower portion of the tank walls. To prevent further releases from the tank, the tank was carefully moved with an excavator and placed onto a visqueen liner in a shallow containment berm. Later in the day on March 5, the contents of the tank and the visqueen containment berm were pumped out by Ingenium, a waste disposal company based in Kent, Washington. The tank liquids were pumped into a 55-gallon drum, which was labeled and left on site for later removal.



## 2.2 UST CLOSURE METHODS

IO was contracted to permanently remove the UST. IO obtained a tank decommissioning permit from the Seattle Fire Department (Appendix C), and mobilized to the site on March 11, 2015 under Amec Foster Wheeler supervision. The tank was triple rinsed by Marine Vacuum Services, Inc., and certified safe for excavation, transport, and demolition by Northwest Marine Chemist, Inc. A copy of the pump and rinse certificate is included in Appendix D, and a copy of the Marine Chemist Certification is included in Appendix E.

Once the tank was rinsed and certified safe for removal, the Seattle Fire Department signed off on the removal permit and the tank was loaded onto a truck for transport to a recycling facility. A copy of the tank destruction record is included in Appendix F.

Ingenium removed and disposed of the tank liquids and rinsate water from the site on April 27. Copies of the disposal records are included in Appendix B.

Selected site photographs are included in Appendix G.



## 3.0 SOIL EXCAVATION, SAMPLING, AND BACKFILLING

The following sections describe soil excavation and sampling activities in the area of the UST.

### 3.1 UST Excavation and Confirmation Soil Sampling

Shortly after discovering the UST, and after it was moved onto a visqueen liner, soil sample Tank-soil-B1 was taken directly beneath the tank for characterization purposes. This sample was analyzed for TPH-D, TPH-G, benzene, toluene, ethylbenzene, and xylenes, semi-volatile organic compounds, polychlorinated biphenyls, and total Resource Conservation and Recovery Act (RCRA) list of eight metals. A follow-up sample, Tank-soil-B1B, was analyzed for volatile organic compounds. Results indicate the samples contained TPH-G, TPH-D, benzene, naphthalene, and benzo[a]pyrene are above proposed cleanup levels for the site (AMEC Geomatrix, 2011). TPH-G and TPH-D were detected at 4,400 and 2,100 mg/kg, respectively. It is unknown whether the source of the contamination was from the UST or from the former piping, or some other unknown source. Other constituents analyzed were either not detected at the laboratory reporting limit, or were detected at concentrations below cleanup levels established for the site. Results of samples collected from the vicinity of the UST are summarized in Table 1. Laboratory reports are included in Appendix H.

Once the UST was removed, the excavation was expanded to an area measuring approximately 15 feet wide by 90 feet long. The depth extended to the water table, which was approximately 5 feet below ground surface. In total, 373 tons of soil were excavated from the area around the UST and disposed of at the Republic Services landfill in Roosevelt, Washington. Copies of the disposal tickets are included in Appendix I. Confirmation samples were collected from the excavation bottom and sidewalls once the excavation was complete (Figure 3). The general naming scheme for the samples begins with a prefix, such as "B7-piping," to indicate the samples were collected from the former Building 7 piping trench area. Next the samples were identified with either a "B" representing a bottom sample, or "S" representing a sidewall sample, and the number of each type of sample. Lastly, each sample was also identified by its depth in feet below ground surface. Thus, sample 'B7-piping-B1-5.0' was the first bottom sample collected in the former Building 7 piping trench area from a depth of 5.0 feet bgs. Soils from two sample locations (tank-soil-B1/B1B and B7-piping-S1-4.0) were subsequently excavated and new bottom and sidewall samples were collected.

Three bottom samples—B7-piping-B1-5.0, B7-piping-B2-5.0, and B7-piping-B5-5.0—and two sidewall samples—B7-piping-S1B-4.0, and B7-piping-S2-4.0—were collected in the vicinity of the former UST, and are representative of soil left in place. All five samples exceed the site cleanup levels for TPH-G, TPH-D, benzene, and benzo[a]pyrene. Sample B7-piping-B5-5.0 also exceeded the cleanup level for ethylbenzene.



## 3.2 SOIL TREATMENT

In situ chemical oxidation and oxygen releasing compounds were mixed with soil in the piping trench excavation prior to backfill. Descriptions of the oxidant mixing procedures will be described in more detail in the CAP, expected to be finalized in June of 2015.

### 3.3 BACKFILLING

The excavation was backfilled by New Core Development on March 27, 2015 with imported fill soil consisting primarily of a fine to medium grained sand with trace gravel.

## 3.4 SITE ASSESSMENT CHECKLIST

Amec Foster Wheeler completed a site assessment checklist, as required by Ecology. The forms are included in Appendix J.



## 4.0 CONCLUSIONS AND RECOMMENDATIONS

This report documents the removal of a single UST with a capacity of approximately 500 gallons from the New Core Development property (former Kelly-Moore property) at 5400 Airport Way South in Seattle, Washington. The work was conducted in compliance with WAC 173-360-385 and 173-360-390. The tank was discovered during excavation work as part of an interim action to remove petroleum contaminated soil. Previous contents of the UST are unknown. The UST removal and confirmation soil sampling can be summarized as follows:

- One approximately 500-gallon UST was removed from the site on March 11, 2015.
- Petroleum-contaminated soil was present in the area around the UST; however, it is unknown whether the source of contamination was from the UST or nearby product piping, or some other source.
- In total, 311 tons of soil were excavated from the area around the UST and disposed of at the Roosevelt Landfill in Roosevelt, Washington.
- Five confirmation soil samples collected from the excavation in the vicinity of the former UST exceeded cleanup levels established for the site for TPH-D, TPH-G, benzene, and benzo[a]pyrene.
- Groundwater was present in the excavation, but was not sampled.

Contamination at the site is already well documented, and the potential contribution from the UST is unknown, but likely to be minimal in comparison with sampling results from other areas of the site. Remediation at the site is ongoing and the site is already part of Ecology's VCP program (VCP number NW2305).



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## 5.0 REFERENCES

- AMEC Geomatrix, Inc. (AMEC Geomatrix). 2009. Limited Phase II Environmental Site Assessment Report, Former Kelly-Moore Manufacturing Facility, Seattle, Washington, November.
- AMEC Geomatrix. 2010. Underground Storage Tank Decommissioning Report, Former Kelly-Moore Manufacturing Facility, Seattle, Washington. February.
- AMEC Geomatrix. 2011. Remedial Investigation and Feasibility Study, Former Kelly-Moore Manufacturing Facility, Seattle, Washington, October.

R:\14697 Kelly Moore Paint Company\023\2015\_05-14\_KM UST Decommissioning Mar 2015\_Sx.docx



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**TABLES** 

#### TABLE 1

### SOIL SAMPLING RESULTS 1,2

5400 Airport Way South Seattle, Washington



All concentrations in milligrams per kilogram (mg/kg).

	Depth			TPH								
Sample Location	(feet bgs)	Sample Date	Diesel	Lube Oil	Gasoline	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Benzo[a]pyrene	Naphthalene
	C	leanup Level 3	2,000	2,000	30 <sup>4</sup>	0.004	4.65	6.05	13.5	322	0.23	4.46
Tank-soil-B1 <sup>5</sup>	~ 3.5	03/05/15	2,100	1,700	4,400	0.17	0.19	2.5	5.0	1.3 U	11	8.2
Tank-soil-B1B <sup>5</sup>	~ 3.5	03/09/15				0.063 U	0.31 U	0.29	1.2	0.17		0.38
B7-Piping-S1-4.0 <sup>5</sup>	4.0	02/27/15	14,000	6,100	250	0.11	0.17 U	0.17 U	0.64	0.17 U	7.8	
B7-Piping-B1-5.0	5.0	02/27/15	3,300	370	2,600	0.097	0.14 U	0.62	3.8	1.4	0.42	
B7-Piping-B2-5.0	5.0	02/27/15	4,100	710	3,000	0.41	0.098 U	1.2	8.9	4.8	4.6	
B7-Piping-S2-4.0	4.0	02/27/15	7,400	5,600	1,300	0.069	0.095 U	7.4	9.5	1.0	51	
B7-Piping-B5-5.0	5.0	03/13/15	7,800	970 U	1,100	0.13	0.12 U	0.27	1.4	0.12 U	3.7	
B7-Piping-S1B-4.0	4.0	03/13/15	11,000	1,300 U	3,900	0.27	0.12 U	0.27	1.4	0.12 U	0.28	

#### **Notes**

- 1. Data qualifiers are as follows:
  - U = analyte not detected at or above laboratory reporting limit indicated.
- 2. **Bold** values exceed cleanup level.
- 3. Cleanup levels obtained from Remedial Investigation and Feasibility Study (AMEC Geomatrix, 2011).
- 4. If benzene is present.
- 5. Samples with soil that was subsequently removed.

#### <u>Abbreviations</u>

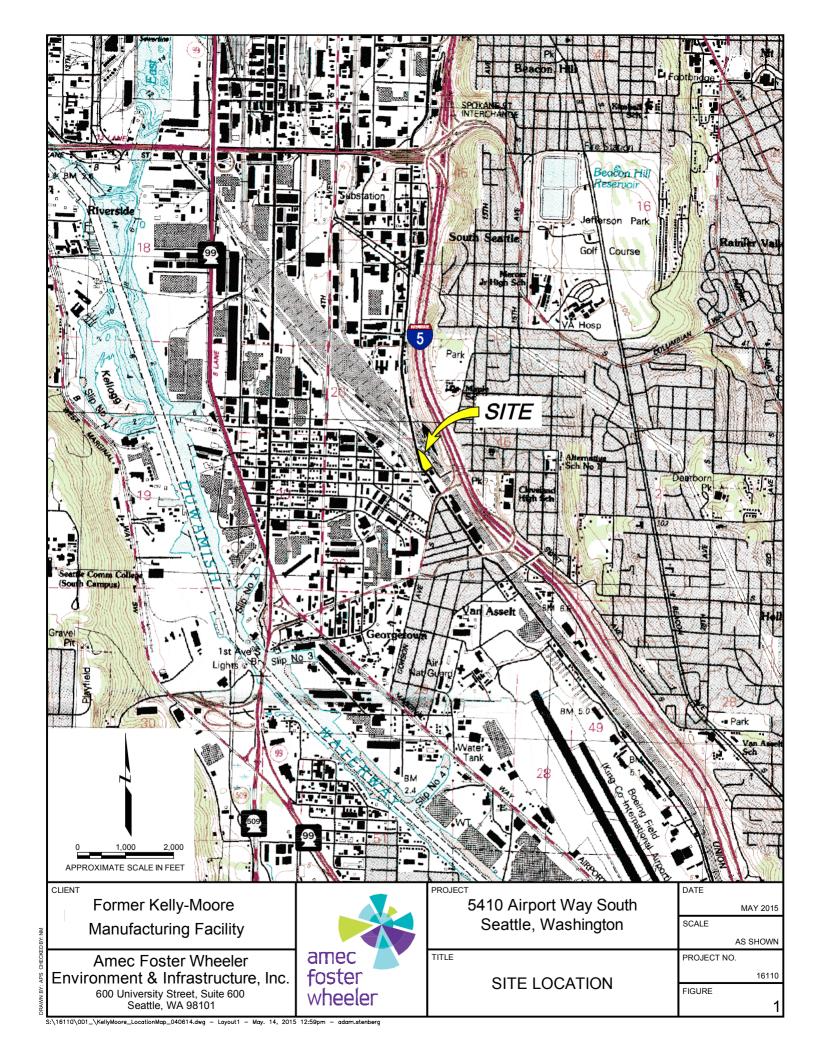
-- = not analyzed/not available

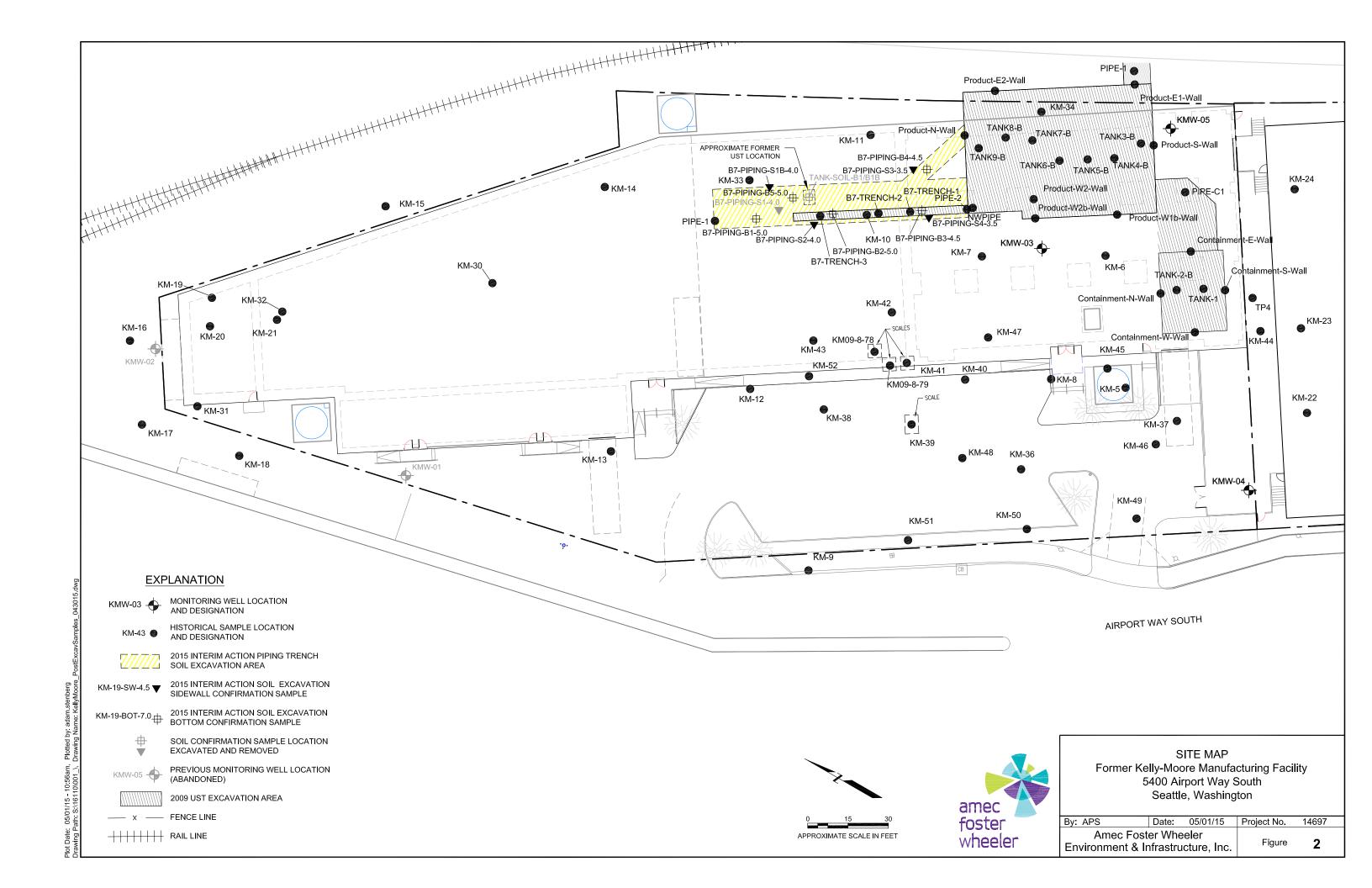
bgs = below ground surface

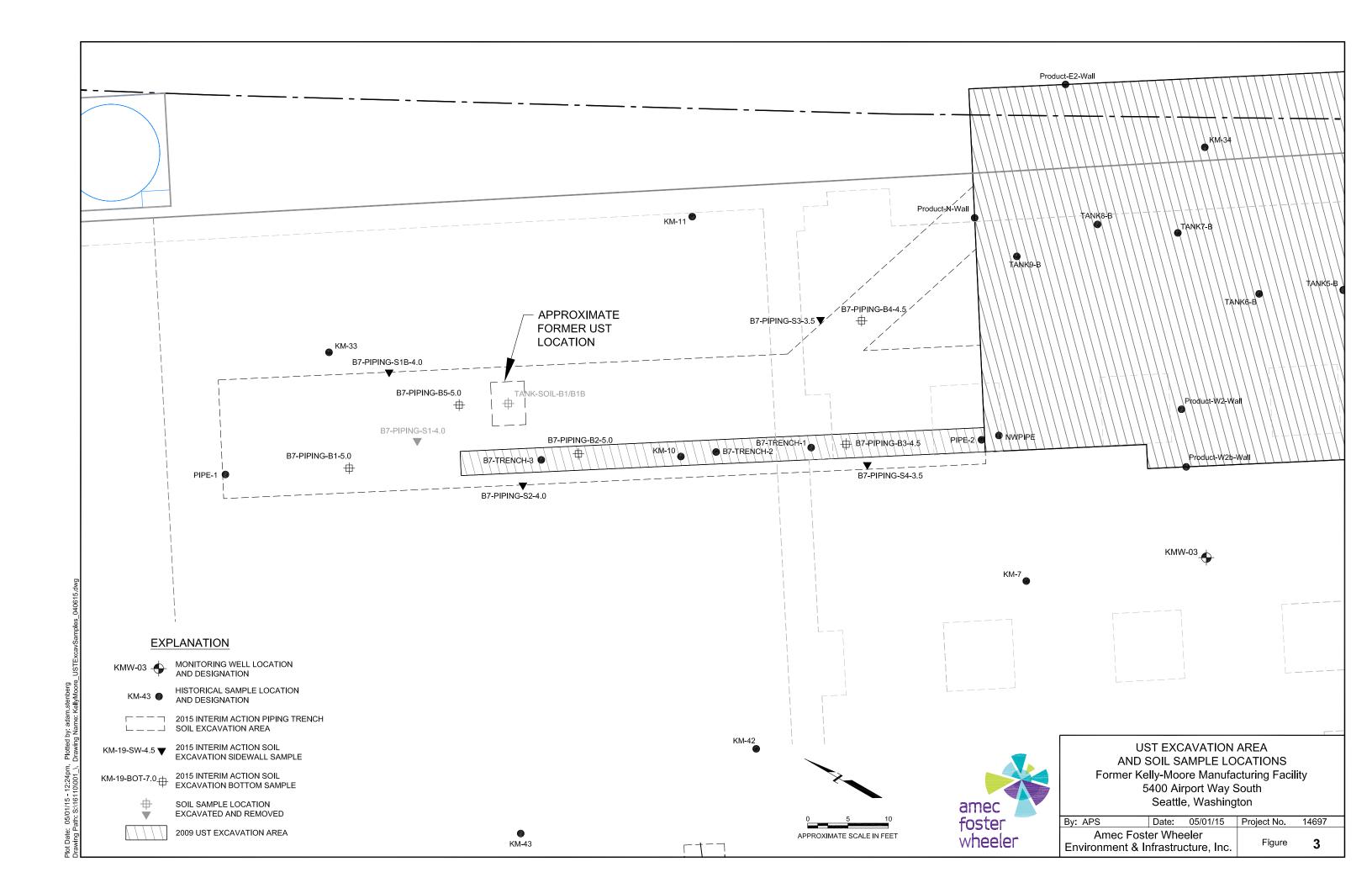
TPH = total petroleum hydrocarbons



**FIGURES** 









# APPENDIX A

Waiver of 30-day Notice Requirement



# Request to Waive 30 Day Waiting Period \*\*To be completed by Person Submitting Request\*\*

UST ID # (if known): UNK									
Full Site Address: 5400 Airport Way S									
Owner/ Operator: NCD Ge	orgetown, LLC. Dan Jenkins								
Contact Phone #: 206-679-8	3568			<u> </u>					
Waiver Requested for 30 Day Notice to: (Circle one or both)  INSTALL									
Person and Company Subm	itting Request: Patrick Hsie	h, PE Amec Foster Whe	eeler						
Contact phone #: 206-549-9	0015								
Reason for Submitting Req (Circle all that apply)	Reason for Submitting Request: ENVIRONMENTAL HAZARD HEALTH HAZARD								
Explain Reason: A tank wa	as unexpectedly found to be le	aking an unknown fluid	during excavation onsi	te.					
Date Request Submitted: 03	3/05/15								
Date and Time of Construc	tion: 03/05/15 10:00 AM								
For all that apply	Name	Contact Phone Number	ICC Certification Number						
INSTALLER			v						
DECOMMISSIONER	Nathan Moxley	509-332-9281	8198685	1.					
SITE ASSESSOR	Nother Moxeley	509 3329१४	? 8198685	Mg tout					
Completed 30 Day Notice	Attached to Waiver Reques	t Form? (Circle one)	YES NO	M8140 ,					
Department of Ecology	Response to Request (to b	e completed by UST	Inspector):						
WAYIER-GRAN	TED WAIVER DI	ENIED	11						
Inspector: And Vener	M. Tula Signature	e and Date Indice	Olk o	4/05/205					
**DECOMMISSIONE WAIVER REQUEST FO	R(S) SHALL HAVE A COPY DRM ON SITE DURING ALI	OF 30 DAY NOTICE DECOMMISSIOING	AND A COPY OF THE RELATED ACTIONS	E ***					



ECY 020-95 (Rev. Feb. 2012)

# UNDERGROUND STORAGE TANK (UST) 30-DAY NOTICE

(See back of form for instructions)

F	OR OFFICE USE ONLY	
Site ID#_		
FSID#_		

					1	
Please ✓ the	e appropriate box:	☐ Intent to Install	☐ In to C	tent lose		·
HQ (360)407-7170	/ Central (509)575	5-2490 / Eastern	(509)329	-3400 / Nor	thwest (425)6	49-7000 / Southwest (360)407-630
SITE INFORMATION					NFORMATION will be returned to	this address)
				Dan Je	nkins i	NCD Georgofoun, LLC.
Tag or UBI number		*		UST Owne	r/Operator	,
Kelly	Moore Pain port Vay	it			Rachier	
Site Name		C		Mailing Ac	idress/PO Box	90 170
Site Physical Addres	port vay	<u>&gt;,</u>	<u></u>	Seat	tle, WA	98178 Zip Code
•	s 1.) A	9810	g.	City	6 -679	
<u>Seaffle</u> City	<u>~Λ</u>	9810° Zip Cod	le le		erator Phone N	
Nathan Mox	(eu 500	1-332-92	81	dan	Q NO. 10.00	re development.com
Site Phone Number	13 20	( -00 10	<del></del> -	Owner/Ope	erator Email A	ddress
Tang biconumou						
TANK INFORMATION	Substance	••	Date Pro	feet is		
Tank ID	Stored	Capacity	Expected to			Comments:
12 Kan 20	UNKnown	~300gab	3/5	11.5		
0.(1.4)				<del> </del>		
· ·					j	
	<u> </u>				<u>]</u>	
1) SERVICE PROVIDE	R INFORMATION - ci	heck the appropriate	hoxes			
	<del>'''''''''''''''''''''''''''''''''''''</del>			annerrana 341	HOW by LOCK o	
Pi	LEASE NOTE: INDIV PASSED ANOTHEI					
☐ Installer	Decommissioner	Site Asses	ssor			
	er wheeld	7				
Service Provider Com				Contact Pe		0 - 6: 1
Nathan M	wxley			<b>5</b> 0°	7-332	-9281
Certified Service Prov	ider Name				one Number	
9198685				Nathan insxley @ amecfw. Con		
ICC Certification #				Contact Er	nail Address	
2) SERVICE PROVIDE	R INFORMATION (RE	QUIRED IF USING	MORE TH	AN ONE PROV	IDER) - check t	he appropriate boxes
Installer	Decommissioner	Site Asse	ssor			
Service Provider Com	pany Name			Contact Pe	erson	***************************************
Certified Service Prov	vider Name			Contact Ph	one Number	· · · · · · · · · · · · · · · · · · ·
T0000 1100 1100 1100				0		
ICC Certification #				<ul> <li>Contact Er</li> </ul>	nail Address	

## Imke, Andrew (ECY)

From:

Hsieh, Patrick [patrick.hsieh@amecfw.com]

Sent:

Thursday, March 05, 2015 2:58 PM

To:

Imke, Andrew (ECY)

Cc:

Moxley, Nathan; Gray, Natasya

Subject:

**UST Notice and Waiver** 

Attachments:

030515 UST Notice and waiver.pdf

Andrew.

Please see the attached paperwork and call me (info below) if anything else needs to be done. Tasya is not in the office today and Nathan is still onsite with no access to email.

Regards,

#### Patrick Hsieh, PE | Associate Engineer

Amec Foster Wheeler Environment & Infrastructure | Seattle, Washington 600 University St, Suite 600 | Seattle, WA 98101 206.342.1773 (direct) 206.549.9015 (cell) | 206.342.1760 (Seattle Main) | 206.342.1761 (fax) patrick.hsieh@amecfw.com



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## Moxley, Nathan

From: Imke, Andrew (ECY) <aimk461@ECY.WA.GOV>

**Sent:** Monday, April 06, 2015 11:52 AM

To: Moxley, Nathan

Subject: RE: Site Assessment Report - 5400 Airport Way S., Seattle

#### Good morning Nathan,

As we just discussed on the phone, I will extend the deadline for submission of the required regulatory documentation for Decommissioning of the abandon UST systems until May 15, 2015. Please ensure that these documents are submitted as soon as they become available.

Respectfully, Drew

Andrew A. Imke
Senior Underground Storage Tank Inspector
Dept. of Ecology-NWRO: TCP/UST
Work (425) 649-7226
Coll (425) 457-2142

Cell (425) 457-3142 Fax (425) 649-7161 andrew.imke@ecv.wa.gov

From: Moxley, Nathan [mailto:nathan.moxley@amecfw.com]

**Sent:** Monday, April 06, 2015 10:00 AM

**To:** Imke, Andrew (ECY) **Cc:** Gray, Natasya; May, Logan

Subject: Site Assessment Report - 5400 Airport Way S., Seattle

#### Andrew,

We are still preparing the Site Assessment report for the New Core Development Site at 5400 Airport Way South in Seattle, and would like approval for an extension to the 30-day reporting requirement. The UST discovered on March 5, 2015 was permanently removed on March 11, 2015, and 30 days would be this Wednesday, April 8, 2015. The UST decommissioning report is but one part of a larger interim action cleanup report being prepared simultaneously. Please let me know about the extension.

#### Thanks,

#### Nathan



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UST ID #: \_\_\_N/A

County: KING



# PERMANENT CLOSURE NOTICE FOR UNDERGROUND STORAGE TANKS

This notice certifies that permanent closure activities were performed and conducted in accordance with Chapter 173-360 WAC. Instructions are found on the back page.

	L WEST FRATEURY			HOWERWO A	મુંહર ભાવામાં આવેલ	\T(0)\		
Facility Compliance Tag #: N/A				Owner/Operator Name: Robert Stetson				
USTID#: N/A					Moore Paint			
Site Name: Former	Kelly Moo	re Paint Facil	Address:	105 Elmin	a Rd., 8	He 300		
Site Address: 5400	Airport War	r South	City: Vac	caville		Zip: 95687		
City: Seaffle			Phone:					
Phone:			Email: rs	stetson @	Kellymoore.c	`AWA		
		III. CERTHERUS	TE TO TOWN WE	zalotyjąt				
Company Name: AN	IEC Foster	Wheeler	Service Pro	ovider Name: 🔥	lathan Mox	leu		
Address: 600 Univ	versity St.	, Ste. 600	Certification	on Type: US	Cert.	0		
city: Seaffle	State:	WA Zip: 9810	Cert. No.:	Cert. No.: 8198685 Exp. Date: 3/15/15				
Provider Phone: 201	Provider E	Provider Email: Nathan. Moxley @ amecfu. com						
Provider Signature: 11/15 May Date: 3/14/15					•			
		INV. IVARIKI	MANANTE PARTE					
TANK ID	TANK CAPACITY	LAST SUBSTANCE STORED	removal	CLOSURE METHO	D change-in-service	CLOSURE DATE		
4/4	1 500 gal	Unknown	র্ত্র			3/5/15		
				IIII				
		·						
V. सिक्तुवासक् श्रावक्रभणमः								
Signature ackno	owledges UST(s) cor	mply with UST regula	tlon WAC 173	360-380 Tempora	ry Closure Requirer	nents.		
8/6/15	Thusel	on helalf al	Kelly-Mores	Paik Ros	BERT W. STEW	المد		
	ignature of Tank Ov epresentative	wner/Operator or Au	thofized	Print or Ty				

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## **APPENDIX B**

Tank Liquids and Rinsate Water Disposal Record

CONTAINS HAZARDOUS MATERIALS								
STRAIGHT	BILL OF LAD	DING - ORIGINAL - NOT NEGO	TIABLE	Shipper	's No	S-15-	0492 VLS	
	Ingenium	Group, LLC				0.4607	1004E	
Carrier	1-800-805	[18] [18] [18] [18] [18] [18] [18] [18]	SCAC	Carrier	's No	<b>04/27</b> Date		7
TO: Consignee Street Destination	VLS - Armor 101 South Park I Mt. Pleasant, TN		Street	Kelly Moore 5410 Airport Seattle, WA			Zip os	3108
Route		*		icle Number		U.S. DOT	Hazmat Reg	
Number and Type	LINA I.D.		- to a second	Hazard	Pkg.	Total Quantity	Veignt	Class or
of Packages	HIVI Number	Description of Artic	cles	Class	9.	mass, volume, or activity)	(subject to correction)	Rate
2-Du 55	AR07305	Material Not Regulated by DOT (U	JST Liquids)			600	P	
1-DM 15	AR07304	Material Not Regulated by DOT (S	ioil Cuttings)	62		60	P	*
1- DM 55 1-CW	AR07306	Material Not Regulated by DOT (P	urge Water)			250	P	*
1-CW	AR07337	Material Not Regulated by DOT (S	iteel Pipe)	_*		100	P	
	850					0		
,								CONTAINS HAZARDOOS MATERIA
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	3 4							100
Remit COD to:			Subject to Section 7 shipment is to be delivered	of conditions, if this ed to the consignee	COD	A > 4 T	COD FE	E: ×
Address:	Ct.	ato: 7:a.	without recourse on the consignor shall sign the following the carrier shall not to the carrier shall not the carrier shall not the carrier shall not to the carrier shall	he consignor, the . owing statement:	\$	AMT:	Prepaid 🗆	
City: NOTE: Where the rate	is dependent on value, sh	ate: Zip:	shipment without paymen other lawful charges.	m or reight and all		CHARGES:	FREIGHT	\$ CHARGES:
hereby specifically state	ed by the shipper to be no	contracts that have been agreed upon in writing between t	(Signature of Co	annlicable otherwise	to the rates,	classifications and	Prepaid	Collect
carrier and are available to marked, consigned, and do to carry to delivery at said	the shipper, on request; and estined as indicated above, wi destination, if on its route, or	dall applicable state and federal regulations; the Property hich said company (the word company being understood to otherwise to deliver to another carrier on the route to said	described above, in appa hroughout this contract as destination. It is mutually	rent good order, exc s meaning any person agreed as to each ca	opt as noted or corporati arrier of all or	contents and condi- on in possession of any of said Propert	tion of contents of po the property under the y over all or any port	ackages unknown), ne contract) agrees tion of said route to
carrier and are available to the shipper, on request; and all applicable state and federal regulations; the Property described above, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to delivery at said destination, if on its route, or otherwise to delivery to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said Property that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on the back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.  NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C.								
	proper condition for transport	properly classified, described, packaged, marked tation according to the applicable regulations of	PLACARDS REQUIRED		DR	UPPLIED IVER'S INATURE:	BY SHIPPER	☐ BY CARRIER
SHIPPER: Kell	y Moore Seattle	DATE 4/07/18	CARRIER:	Ingenizm	Froup Li	App. 10 10 10 10 10 10 10 10 10 10 10 10 10	15.4-27	-10
PER:KOBER W. S	7-14-14	DATE: T/A // 15	PER: (	CONTRACT	NUMBE		TE:/	/ \
TELEPHONE N		633_8253 CONTAINS HAZAR	OR OTHER	UNIQUE ID	ENTIFIE	R:		



# APPENDIX C

Seattle Fire Department UST Decommissioning Permit

4 AM 5K

Your Seattle

Fire Department

RECEIVED

MAR 0.9-2015

PERMIT SECTION



# APPLICATION FOR TEMPORARY PERMIT

$(x_1, \dots, x_k) = (x_k, \dots, x_k)$		- [		
Code 7908	Commerci	ial	Tank Removal/Decommissioning	
Permit Fee: \$218.00			Date 1	ssued: 3/11/15
TO BE COMPLETED BY PERMIT	APPLICANT		Tank(s) must be removed from site on the	same day as permit is issued!
FIRM NAME TO C	verronu	N	lal & DuBrashwaline	
MAILING ADDRESS 226	00 (184	2002	Aue SC SUIT	B
CITY BELLEVUE	5		STATE CIP ZIP	98005
JOBSITE ADDRESS 5400	) Arrow	+	Way Sarth Souther in	A
CONTACT PERSON SEP	PICECCE	v	PHONE NUMBER (4 Z & G4	18-3093
Number of Tank(s):	Tank Siz	ze(s)	): 1,000 Abovegrou	and tank
Product(s) Previously Contain	ed: Clarkout	/\$	dedianel Solvent D'Undergrou	nd tank
Removal (Marine Chemis	t inspection and co	erti	ficate required for all tanks regardless of size or c	ontents)
Abandonment-in-Place (Mand/or unknowns)	farine Chemist cer	ertifi	icate required for tanks previously containing Clas	ss I flammable liquids
Hot work being conducted	l: No		☐ Yes (If yes, a separate hot work pe	mit is required)
Permit applications may be su	bmitted in person	n w	eekdays from 8:00 a.m. to 5:00 p.m., or mailed	to:
Seattle Fire Department Fire Marshal's Office – Pe 220 Third Ave S, 2 <sup>nd</sup> Floor Seattle, WA 98104-2608			To pay with a Visa or Master Card: Fax or THEN CALL US TO CONFIRM RECEIPT AND Tel: (206) 386-1450 / Fax: (206) 386-1348 E-mail: permits@seattle.gov	email this application MAKE PAYMENT
Call 386-1450, at	least 24 hours p	pric	or to needed inspection time to arrange for a	n appointment
TANKS MAY BE F	REMOVED/DECC	OM	MISSIONED ONLY AFTER FIRE DEPARTME	NT INSPECTION
NO HOT WORK IS ALLOV	VED ON A TANK	< s	YSTEM PRIOR TO ISSUANCE OF THIS FIRE	DEPARTMENT PERMIT!
onamons, an noted special	conditions, and	all	mission the tank(s) identified in this permit in a applicable provisions of the Seattle Fire Court PERMIT CONDITIONS ARE NOT ATTA	de federal atota and legal
*		11	ning must be performed, or directly supervised, by an ICC (	
EMOUSE: 0 70220				
FMO USE: 2 8 200 3 Check No.:	0915	. 11	APPROVED BY: aspector: A Devit	FD ID# $\mathcal{N}_{33}$
Receipt No.: 5 - 243		N	lame of Marine Chemist _ C. Ala.	Certificate #
Application ID#: 1062	31	D	late:	4.1
01/15)	11	1		



# APPENDIX D

UST Pump and Rinse Certificate

# Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

Po. Box 24263 Seattle, Washington 98124

Telephone (206) 762-0240

FAX (206) 763-8084

1-800-540-7491

## AST/UST STORAGE TANK PUMP & RINSE CERTIFICATE

				,,		1	
Tank Size:	150 gl	S					
Last Contents	750 gl Stord	١٢٥	50	lvent		Parameter to the second control of the secon	
Tank Location:	5400 A1	rpa	ort h	Jay S	<u> </u>		
	Seattle	2	WA.			statem ethics of the statement of the st	
accordance with 380(I), API 160 accordance with	n Service, Inc. cer in the industry stan 04, API 2015 and in Federal, State an FOR HOT WOL	dard a that a d Loc	ns outlined i	in 40 CFR F product and	ART 280 rinsate ha	.70, W. is been	disposed of in
	en e					- management	
Tank Owner:				:		The second secon	A Commence of the Commence of
				t		micromoter carrotte moter	
	the state of the s					merco de estado de martes como estado de	
Contractor:	CO Environ	ime	ntal+I	nfrastru	ctur	to the company and the company	
		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\				Transport index of part of	
M.V.S. Represe	entative: <u>Call</u>	R	hillip.	Kusa	lines	Access (Access and Access and Acc	
Date: 03-11	- 15			·		See any see a see	
Notes:						e extension of the first	
						to limpical shows praeside as the	

DBE # D4M1302341

EPA # WAD980974521



# APPENDIX E

Marine Chemist Tank Testing Certificate

George D Blair - Northwest Marine Chemist, Inc. P. O. Box 7084, Tacoma, WA 98406

Office: 253-752-0149 Fax: 253-759-3523

Email: gbcmc637@gmail.com

Serial

MARINE CHEMIST CERTIFICATE

637-00390 Page 1 of 1

I O Environmental	Kelly Moore	Mar 11, 2015
Survey Requested by	Vessel Owner Agent	Date
Tank Farm	Underground Storage Tank	5400 Airport Way South
Vessel	Type of Vessel	Specific Location of Vessel
Stoddard Solvent	O <sub>2</sub> , LEL, Visual, VOC	10:25
Last Three 3 Loadings	Tests Performed	Time Survey Completed

Inspected Spaces:

Group 1, 1-1,000 gal. UST

Safety Designations:

ATMOSPHERE SAFE FOR WORKERS SAFE FOR HOT WORK

Instructions

Maintain firewatch with charged extinguisher at ready during hot work operations.

This tank has been cleaned free of all flammable and combustible residues and is safe for excavation, transportation, and demolition.

**Test Results** 

Inspected spaces group 1

20.8%

6.1 ppm

**Limits of Detection** 

0.1 ppm VOC

In the event of physical or atmospheric changes affecting the STANDARD SAFETY DESIGNATIONS assigned to any of the above spaces, this certificate is voided; spaces not listed on the Certificate are not to be entered unless authorized on another Certificate and/or maintained in accordance with OSHA 29 CFR 1915; or if in any doubt, immediately stop all work and contact the undersigned Marine Chemist. Unless otherwise stated on the Certificate, all spaces and affected adjacent spaces are to be reinspected daily or more often as necessary by the competent person or the authority having jurisdiction as applicable in support of work prior to entry or recommencement of work.

QUALIFICATIONS: Transfer of ballast, cargo, fuel or manipulation of valves or closure equipment tending to alter conditions in pipelines, tanks, or compartments subject to gas accumulation, unless specifically approved on this Certificate, requires inspection and a new Certificate for spaces so affected. All lines, vents, heating coils, valves, and similar enclosed appurtenances shall be considered "not safe" unless otherwise specifically designated. Movement of the vessel from its specific location voids the Certificate unless shifting of the vessel within the facility has been specifically authorized on this certificate. STANDARD SAFETY DESIGNATIONS: (partial list, paraphrased from NFP 306, Subsections 4.3.1 through 4.3.6)

ATMOSPHERE SAFE FOR WORKERS: In the compartment or space so designated (a) the oxygen content of the atmosphere shall be at least 19.5 percent and not greater than 22 percent by volume; (b) the concentration of flammable materials is below 10 percent of the lower explosive limit; (c) any toxic materials in the atmosphere associated with cargo, fuel, tank coatings, inerting mediums, or fumigants are within permissible concentrations at the time of the inspection.

NOT SAFE FOR WORKERS: In the compartment or space so designated, entry shall not be permitted.

ENTER WITH RESTRICTIONS: In the compartment or space so designated, entry for work is permitted only if conditions of proper protective equipment, or clothing, or time, or all of the aforementioned, as appropriate, are as specified.

SAFE FOR HOT WORK: In the compartment or space so designated (a) the oxygen content of the atmosphere is not greater than 22 percent by volume; (b) the concentration of flammable materials in the atmosphere is less than 10 percent of the lower explosive limit; (c) the residues, scale, or preservative coatings are cleaned sufficiently to prevent the spread of fire and are not be capable of producing a higher concentration than permitted by (a) or (b); (d) all adjacent spaces, containing or having contained flammable or combustible materials shall be sufficiently cleaned of residues, scale, or preservative coatings to prevent the spread of fire; or they are inerted. Ship's fuel tanks, tube tanks, or engine room or fire room bilges, or other machinery spaces, are treated in accordance with the Marine Chemist's

SAFE FOR LIMITED HOT WORK: In the compartment or space so designated (a) portions of the space meet the requirements Safe for Hot Work and Partial Cleaning, as applicable, or (b) the space is inerted, adjacent spaces meet the requirements for Safe for Hot Work, and hot work is restricted to specific locations; (c) portions of the space shall meet the requirements for Safe for Hof Work, as applicable; and the nature or type of hot work shall be limited or restricted.

NOT SAFE FOR HOT WORK: In the compartment or space so designated, hot is not permitted.

CHEMISTS ENDORSEMENT. This is to certify that I have personally determined that all spaces in the foregoing list are in accordance with NFPA 306 Control of Gas Hazards on Vessels and have found the condition of each to be in accordance with its assigned designation.

\*The undersigned acknowledges receipt of this Certificate under NFPA 306 and understands conditions and limitations under which it was issued, and the requirements for maintaining its validity."

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions

Mar 11, 2015

I O Environmental

Signed Marine Chemist

**Authorized Representative** 

Company

CMC No.



## APPENDIX F

Tank Destruction Record

## Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P0. Box 24263 Seattle, Washington 98124

Telephone (206) 762-0240

FAX (206) 763-8084

1-800-540-7491

### STORAGE TANK

## CERTIFICATE OF DESTRUCTION

DATE: 3/11/15

TANK OWNER: Kelley Moore Paint/10 Environ mental

TANK LOCATION: 5400 airport Way S. Seattle, WA

TANK DESCRIPTION: 750 UST

LAST CONTENTS HELD IN TANKS: Stoddard Solvent

Marine Vacuum Service, Inc certifies that the tank mentioned above was pumped of all liquid materials and washed clean with a high-pressure washer and soap solution. The tank and contents therein have been disposed of according to all Local, State and Federal Regulations.

Thank you,

Marine Vacuum Service. Inc.



## APPENDIX G

Selected Site Photographs

### **APPENDIX G**



### **SELECTED SITE PHOTOGRAPHS**

5400 Airport Way South Seattle, Washington



Photograph 1 Close-up of the underground storage tank (UST) after moving to temporary staging area.



Photograph 2 UST after discovery on March 5, 2015. View is to the east.

Amec Foster Wheeler

### **APPENDIX G**



### **SELECTED SITE PHOTOGRAPHS**

5400 Airport Way South Seattle, Washington



Photograph 3 UST after moving to temporary staging area. View is to the east.



## APPENDIX H

Laboratory Analytical Results



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

March 6, 2015

Tasya Gray AMEC Environment and Infrastructure, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Re: Analytical Data for Project 14697

Laboratory Reference No. 1503-037

### Dear Tasya:

Enclosed are the analytical results and associated quality control data for samples submitted on March 5, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

**Enclosures** 

Project: 14697

#### **Case Narrative**

Samples were collected on March 5, 2015 and received by the laboratory on March 5, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

#### NWTPH Gx/BTEX Analysis

Method 5035A VOA vials were not provided. The sample was therefore extracted from a 4-ounce jar for analysis. Some loss of volatiles may have occurred.

The sample chromatogram is similar to mineral spirits with diesel.

### Semivolatiles EPA 8270D/SIM Analysis

Sample tank-soil-B1 had one surrogate recovery out of control limits. This is within allowance of our standard operating procedure as long as the recovery is above 10%.

### Total Metals EPA 6010C/7471B Analysis

The duplicate RPD for Chromium is outside control limits due to the inherently high percentage variability of samples that are within five times the detection limit.

Please note that any other QA/QC issues associated with these extractions and analyses will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Project: 14697

#### **NWTPH-Gx/BTEX**

Matrix: Soil

Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	tank-soil-B1					
Laboratory ID:	03-037-01					
Benzene	0.17	0.025	EPA 8021B	3-5-15	3-5-15	
Toluene	0.19	0.13	EPA 8021B	3-5-15	3-5-15	
Ethyl Benzene	2.5	0.13	EPA 8021B	3-5-15	3-5-15	
m,p-Xylene	5.0	0.13	EPA 8021B	3-5-15	3-5-15	
o-Xylene	ND	1.3	EPA 8021B	3-5-15	3-5-15	U1
Gasoline	4400	320	NWTPH-Gx	3-5-15	3-6-15	Z

Surrogate: Percent Recovery Control Limits Fluorobenzene 85 68-123

Project: 14697

## NWTPH-Gx/BTEX QUALITY CONTROL

Matrix: Soil

Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0305S1					
Benzene	ND	0.020	EPA 8021B	3-5-15	3-5-15	
Toluene	ND	0.050	EPA 8021B	3-5-15	3-5-15	
Ethyl Benzene	ND	0.050	EPA 8021B	3-5-15	3-5-15	
m,p-Xylene	ND	0.050	EPA 8021B	3-5-15	3-5-15	
o-Xylene	ND	0.050	EPA 8021B	3-5-15	3-5-15	
Gasoline	ND	5.0	NWTPH-Gx	3-5-15	3-5-15	

Surrogate: Percent Recovery Control Limits Fluorobenzene 84 68-123

					Source	Pe	rcent	Recovery		RPD	
Analyte	Res	sult	Spike	Level	Result	Rec	covery	Limits	RPD	Limit	Flags
DUPLICATE											
Laboratory ID:	03-03	31-01									
	ORIG	DUP									
Benzene	ND	ND	NA	NA			NA	NA	NA	30	
Toluene	ND	ND	NA	NA			NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA			NA	NA	NA	30	
m,p-Xylene	ND	ND	NA	NA			NA	NA	NA	30	
o-Xylene	ND	ND	NA	NA			NA	NA	NA	30	
Gasoline	ND	ND	NA	NA			NA	NA	NA	30	
Surrogate:											
Fluorobenzene						89	92	68-123			
SPIKE BLANKS											
Laboratory ID:	SB03	05S1									
	SB	SBD	SB	SBD		SB	SBD				
Benzene	0.930	0.964	1.00	1.00		93	96	75-117	4	13	
Toluene	0.936	0.968	1.00	1.00		94	97	78-118	3	12	
Ethyl Benzene	0.932	0.974	1.00	1.00		93	97	78-118	4	12	
m,p-Xylene	0.939	0.980	1.00	1.00		94	98	78-121	4	13	
o-Xylene	0.948	0.983	1.00	1.00		95	98	77-119	4	13	
Surrogate:		•	•	•			•				•
Fluorobenzene						91	94	<i>68-123</i>			

Project: 14697

### **NWTPH-Dx**

Matrix: Soil

Units: mg/Kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	tank-soil-B1					
Laboratory ID:	03-037-01					
Diesel Range Organics	2100	150	NWTPH-Dx	3-5-15	3-5-15	М
Lube Oil Range Organics	1700	290	NWTPH-Dx	3-5-15	3-5-15	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	87	50-150				

Project: 14697

### NWTPH-Dx QUALITY CONTROL

Matrix: Soil

Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0305S4					
Diesel Range Organics	ND	25	NWTPH-Dx	3-5-15	3-5-15	
Lube Oil Range Organics	ND	50	NWTPH-Dx	3-5-15	3-5-15	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	102	50-150				

Analyte	Res	sult	Spike	Level	Source Result	Percent Recover		RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	03-03	31-01								
	ORIG	DUP								
Diesel Range	ND	ND	NA	NA		NA	NA	NA	NA	
Lube Oil Range	ND	ND	NA	NA		NA	NA	NA	NA	
Surrogate: o-Terphenyl						92 94	4 50-150			

Project: 14697

### **SEMIVOLATILES EPA 8270D/SIM**

page 1 of 2

Matrix: Soil Units: mg/Kg

Analyta	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Analyte Client ID:	tank-soil-B1	FQL	Method	Fiepaieu	Allalyzeu	riays
Laboratory ID:	03-037-01					
n-Nitrosodimethylamine	ND	0.79	EPA 8270D	3-5-15	3-6-15	
Pyridine	ND	7.9	EPA 8270D	3-5-15	3-6-15 3-6-15	
Phenol	ND ND	0.79	EPA 8270D	3-5-15	3-6-15	
Aniline	ND	3.9	EPA 8270D	3-5-15	3-6-15	
bis(2-Chloroethyl)ether	ND	0.79	EPA 8270D EPA 8270D	3-5-15 3-5-15	3-6-15 3-6-15	
2-Chlorophenol	ND ND		EPA 8270D			
•	ND ND	0.79 0.79	EPA 8270D EPA 8270D	3-5-15	3-6-15	
1,3-Dichlorobenzene	ND ND			3-5-15	3-6-15	
1,4-Dichlorobenzene	ND ND	0.79	EPA 8270D	3-5-15	3-6-15	
Benzyl alcohol		3.9	EPA 8270D	3-5-15	3-6-15	
1,2-Dichlorobenzene	ND ND	0.79	EPA 8270D	3-5-15	3-6-15	
2-Methylphenol (o-Cresol)		0.79	EPA 8270D	3-5-15	3-6-15	
bis(2-Chloroisopropyl)ether	ND	0.79	EPA 8270D	3-5-15	3-6-15	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.79	EPA 8270D	3-5-15	3-6-15	
n-Nitroso-di-n-propylamine	ND	0.79	EPA 8270D	3-5-15	3-6-15	
Hexachloroethane	ND	0.79	EPA 8270D	3-5-15	3-6-15	
Nitrobenzene	ND	0.79	EPA 8270D	3-5-15	3-6-15	
Isophorone	ND	0.79	EPA 8270D	3-5-15	3-6-15	
2-Nitrophenol	ND	0.79	EPA 8270D	3-5-15	3-6-15	
2,4-Dimethylphenol	ND	0.79	EPA 8270D	3-5-15	3-6-15	
bis(2-Chloroethoxy)methane	ND	0.79	EPA 8270D	3-5-15	3-6-15	
2,4-Dichlorophenol	ND	0.79	EPA 8270D	3-5-15	3-6-15	
1,2,4-Trichlorobenzene	ND	0.79	EPA 8270D	3-5-15	3-6-15	
Naphthalene	8.2	0.79	EPA 8270D	3-5-15	3-6-15	
4-Chloroaniline	ND	3.9	EPA 8270D	3-5-15	3-6-15	
Hexachlorobutadiene	ND	0.79	EPA 8270D	3-5-15	3-6-15	
4-Chloro-3-methylphenol	ND	0.79	EPA 8270D	3-5-15	3-6-15	
2-Methylnaphthalene	16	0.79	EPA 8270D	3-5-15	3-6-15	
1-Methylnaphthalene	12	0.79	EPA 8270D	3-5-15	3-6-15	
Hexachlorocyclopentadiene	ND	0.79	EPA 8270D	3-5-15	3-6-15	
2,4,6-Trichlorophenol	ND	0.79	EPA 8270D	3-5-15	3-6-15	
2,3-Dichloroaniline	ND	0.79	EPA 8270D	3-5-15	3-6-15	
2,4,5-Trichlorophenol	ND	0.79	EPA 8270D	3-5-15	3-6-15	
2-Chloronaphthalene	ND	0.79	EPA 8270D	3-5-15	3-6-15	
2-Nitroaniline	ND	0.79	EPA 8270D	3-5-15	3-6-15	
1,4-Dinitrobenzene	ND	0.79	EPA 8270D	3-5-15	3-6-15	
Dimethylphthalate	ND	0.79	EPA 8270D	3-5-15	3-6-15	
1,3-Dinitrobenzene	ND	0.79	EPA 8270D	3-5-15	3-6-15	
2,6-Dinitrotoluene	ND	0.79	EPA 8270D	3-5-15	3-6-15	
1,2-Dinitrobenzene	ND	0.79	EPA 8270D	3-5-15	3-6-15	
Acenaphthylene	0.93	0.79	EPA 8270D	3-5-15	3-6-15	
3-Nitroaniline	ND	0.79	EPA 8270D	3-5-15	3-6-15	

### **SEMIVOLATILES EPA 8270D/SIM**

page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	tank-soil-B1	i QL	WEUTOU	riepareu	Anaryzeu	i iags
Laboratory ID:	03-037-01					
2,4-Dinitrophenol	ND	3.9	EPA 8270D	3-5-15	3-6-15	
Acenaphthene	5.8	0.79	EPA 8270D	3-5-15	3-6-15	
4-Nitrophenol	ND	0.79	EPA 8270D	3-5-15	3-6-15	
2,4-Dinitrotoluene	ND	0.79	EPA 8270D	3-5-15	3-6-15	
Dibenzofuran	1.8	0.79	EPA 8270D	3-5-15	3-6-15	
2,3,5,6-Tetrachlorophenol	ND	0.79	EPA 8270D	3-5-15	3-6-15	
2,3,4,6-Tetrachlorophenol	ND	0.79	EPA 8270D	3-5-15	3-6-15	
Diethylphthalate	ND	3.9	EPA 8270D	3-5-15	3-6-15	
4-Chlorophenyl-phenylether	ND	0.79	EPA 8270D	3-5-15	3-6-15	
4-Nitroaniline	ND	0.79	EPA 8270D	3-5-15	3-6-15	
Fluorene	3.6	0.79	EPA 8270D	3-5-15	3-6-15	
4,6-Dinitro-2-methylphenol	ND	3.9	EPA 8270D	3-5-15	3-6-15	
n-Nitrosodiphenylamine	ND	0.79	EPA 8270D	3-5-15	3-6-15	
1,2-Diphenylhydrazine	ND	0.79	EPA 8270D	3-5-15	3-6-15	
4-Bromophenyl-phenylether	ND	0.79	EPA 8270D	3-5-15	3-6-15	
Hexachlorobenzene	ND	0.79	EPA 8270D	3-5-15	3-6-15	
Pentachlorophenol	ND	3.9	EPA 8270D	3-5-15	3-6-15	
Phenanthrene	12	0.79	EPA 8270D	3-5-15	3-6-15	
Anthracene	3.3	0.79	EPA 8270D	3-5-15	3-6-15	
Carbazole	ND	0.79	EPA 8270D	3-5-15	3-6-15	
Di-n-butylphthalate	ND	0.79	EPA 8270D	3-5-15	3-6-15	
Fluoranthene	14	0.79	EPA 8270D	3-5-15	3-6-15	
Benzidine	ND	7.9	EPA 8270D	3-5-15	3-6-15	
Pyrene	14	0.79	EPA 8270D	3-5-15	3-6-15	
Butylbenzylphthalate	ND	0.79	EPA 8270D	3-5-15	3-6-15	
bis-2-Ethylhexyladipate	ND	0.79	EPA 8270D	3-5-15	3-6-15	
3,3'-Dichlorobenzidine	ND	3.9	EPA 8270D	3-5-15	3-6-15	
Benzo[a]anthracene	11	0.79	EPA 8270D	3-5-15	3-6-15	
Chrysene	15	0.79	EPA 8270D	3-5-15	3-6-15	
bis(2-Ethylhexyl)phthalate	ND	0.79	EPA 8270D	3-5-15	3-6-15	
Di-n-octylphthalate	ND	0.79	EPA 8270D	3-5-15	3-6-15	
Benzo[b]fluoranthene	20	0.79	EPA 8270D	3-5-15	3-6-15	
Benzo(j,k)fluoranthene	6.0	0.79	EPA 8270D	3-5-15	3-6-15	
Benzo[a]pyrene	11	0.79	EPA 8270D	3-5-15	3-6-15	
Indeno[1,2,3-cd]pyrene	8.4	0.79	EPA 8270D	3-5-15	3-6-15	
Dibenz[a,h]anthracene	3.2	0.79	EPA 8270D	3-5-15	3-6-15	
Benzo[g,h,i]perylene	10	0.79	EPA 8270D	3-5-15	3-6-15	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	47	31 - 110				
Phenol-d6	60	34 - 109				
Nitrobenzene-d5	125	30 - 109				Q
2-Fluorobiphenyl	83	39 - 103				
2,4,6-Tribromophenol	48	25 - 120				
Terphenyl-d14	<i>75</i>	40 - 117				

Project: 14697

# SEMIVOLATILES EPA 8270D/SIM METHOD BLANK QUALITY CONTROL

page 1 of 2

Matrix: Soil Units: mg/Kg

A colling	D !!	DOL		Date	Date	<b>F</b> 1
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Laboratory ID:	MB0305S1					
n-Nitrosodimethylamine	ND	0.033	EPA 8270D	3-5-15	3-6-15	
Pyridine	ND	0.33	EPA 8270D	3-5-15	3-6-15	
Phenol	ND	0.033	EPA 8270D	3-5-15	3-6-15	
Aniline	ND	0.17	EPA 8270D	3-5-15	3-6-15	
bis(2-Chloroethyl)ether	ND	0.033	EPA 8270D	3-5-15	3-6-15	
2-Chlorophenol	ND	0.033	EPA 8270D	3-5-15	3-6-15	
1,3-Dichlorobenzene	ND	0.033	EPA 8270D	3-5-15	3-6-15	
1,4-Dichlorobenzene	ND	0.033	EPA 8270D	3-5-15	3-6-15	
Benzyl alcohol	ND	0.17	EPA 8270D	3-5-15	3-6-15	
1,2-Dichlorobenzene	ND	0.033	EPA 8270D	3-5-15	3-6-15	
2-Methylphenol (o-Cresol)	ND	0.033	EPA 8270D	3-5-15	3-6-15	
bis(2-Chloroisopropyl)ether	ND	0.033	EPA 8270D	3-5-15	3-6-15	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.033	EPA 8270D	3-5-15	3-6-15	
n-Nitroso-di-n-propylamine	ND	0.033	EPA 8270D	3-5-15	3-6-15	
Hexachloroethane	ND	0.033	EPA 8270D	3-5-15	3-6-15	
Nitrobenzene	ND	0.033	EPA 8270D	3-5-15	3-6-15	
Isophorone	ND	0.033	EPA 8270D	3-5-15	3-6-15	
2-Nitrophenol	ND	0.033	EPA 8270D	3-5-15	3-6-15	
2,4-Dimethylphenol	ND	0.033	EPA 8270D	3-5-15	3-6-15	
bis(2-Chloroethoxy)methane	ND	0.033	EPA 8270D	3-5-15	3-6-15	
2,4-Dichlorophenol	ND	0.033	EPA 8270D	3-5-15	3-6-15	
1,2,4-Trichlorobenzene	ND	0.033	EPA 8270D	3-5-15	3-6-15	
Naphthalene	ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
4-Chloroaniline	ND	0.17	EPA 8270D	3-5-15	3-6-15	
Hexachlorobutadiene	ND	0.033	EPA 8270D	3-5-15	3-6-15	
4-Chloro-3-methylphenol	ND	0.033	EPA 8270D	3-5-15	3-6-15	
2-Methylnaphthalene	ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
1-Methylnaphthalene	ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
Hexachlorocyclopentadiene	ND	0.033	EPA 8270D	3-5-15	3-6-15	
2,4,6-Trichlorophenol	ND	0.033	EPA 8270D	3-5-15	3-6-15	
2,3-Dichloroaniline	ND	0.033	EPA 8270D	3-5-15	3-6-15	
2,4,5-Trichlorophenol	ND	0.033	EPA 8270D	3-5-15	3-6-15	
2-Chloronaphthalene	ND	0.033	EPA 8270D	3-5-15	3-6-15	
2-Nitroaniline	ND	0.033	EPA 8270D	3-5-15	3-6-15	
1,4-Dinitrobenzene	ND	0.033	EPA 8270D	3-5-15	3-6-15	
Dimethylphthalate	ND	0.033	EPA 8270D	3-5-15	3-6-15	
1,3-Dinitrobenzene	ND	0.033	EPA 8270D	3-5-15	3-6-15	
2,6-Dinitrotoluene	ND	0.033	EPA 8270D	3-5-15	3-6-15	
1,2-Dinitrobenzene	ND	0.033	EPA 8270D	3-5-15	3-6-15	
Acenaphthylene	ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
3-Nitroaniline	ND	0.033	EPA 8270D	3-5-15	3-6-15	

Project: 14697

# SEMIVOLATILES EPA 8270D/SIM METHOD BLANK QUALITY CONTROL

page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0305S1					
2,4-Dinitrophenol	ND	0.17	EPA 8270D	3-5-15	3-6-15	
Acenaphthene	ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
4-Nitrophenol	ND	0.033	EPA 8270D	3-5-15	3-6-15	
2,4-Dinitrotoluene	ND	0.033	EPA 8270D	3-5-15	3-6-15	
Dibenzofuran	ND	0.033	EPA 8270D	3-5-15	3-6-15	
2,3,5,6-Tetrachlorophenol	ND	0.033	EPA 8270D	3-5-15	3-6-15	
2,3,4,6-Tetrachlorophenol	ND	0.033	EPA 8270D	3-5-15	3-6-15	
Diethylphthalate	ND	0.17	EPA 8270D	3-5-15	3-6-15	
4-Chlorophenyl-phenylether		0.033	EPA 8270D	3-5-15	3-6-15	
4-Nitroaniline	ND	0.033	EPA 8270D	3-5-15	3-6-15	
Fluorene	ND	0.033	EPA 8270D/SIM	3-5-15 3-5-15	3-6-15	
	ND	0.0007	EPA 8270D/SIM	3-5-15 3-5-15	3-6-15	
4,6-Dinitro-2-methylphenol n-Nitrosodiphenylamine	ND ND	0.17	EPA 8270D EPA 8270D	3-5-15 3-5-15		
	ND ND	0.033		3-5-15 3-5-15	3-6-15 3-6-15	
1,2-Diphenylhydrazine			EPA 8270D			
4-Bromophenyl-phenylether		0.033	EPA 8270D	3-5-15	3-6-15	
Hexachlorobenzene	ND ND	0.033	EPA 8270D	3-5-15	3-6-15	
Pentachlorophenol	ND	0.17	EPA 8270D	3-5-15	3-6-15	
Phenanthrene	ND ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
Anthracene	ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
Carbazole	ND	0.033	EPA 8270D	3-5-15	3-6-15	
Di-n-butylphthalate	ND	0.033	EPA 8270D	3-5-15	3-6-15	
Fluoranthene	ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
Benzidine	ND	0.33	EPA 8270D	3-5-15	3-6-15	
Pyrene	ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
Butylbenzylphthalate	ND	0.033	EPA 8270D	3-5-15	3-6-15	
bis-2-Ethylhexyladipate	ND	0.033	EPA 8270D	3-5-15	3-6-15	
3,3'-Dichlorobenzidine	ND	0.17	EPA 8270D	3-5-15	3-6-15	
Benzo[a]anthracene	ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
Chrysene	ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
bis(2-Ethylhexyl)phthalate	ND	0.033	EPA 8270D	3-5-15	3-6-15	
Di-n-octylphthalate	ND	0.033	EPA 8270D	3-5-15	3-6-15	
Benzo[b]fluoranthene	ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
Benzo(j,k)fluoranthene	ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
Benzo[a]pyrene	ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
Indeno[1,2,3-cd]pyrene	ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
Dibenz[a,h]anthracene	ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
Benzo[g,h,i]perylene	ND	0.0067	EPA 8270D/SIM	3-5-15	3-6-15	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	<i>75</i>	31 - 110				
Phenol-d6	77	34 - 109				
Nitrobenzene-d5	80	30 - 109				
2-Fluorobiphenyl	<i>75</i>	39 - 103				
2,4,6-Tribromophenol	69	25 - 120				
Terphenyl-d14	68	40 - 117				

Project: 14697

# SEMIVOLATILES EPA 8270D/SIM SB/SBD QUALITY CONTROL

Matrix: Soil Units: mg/Kg

ome. mg/rtg					Per	cent	Recovery		RPD	
Analyte	Res	sult	Spike	Level	Rec	overy	Limits	RPD	Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB03	805S1								
	SB	SBD	SB	SBD	SB	SBD				
Phenol	0.954	1.06	1.33	1.33	72	80	55 - 105	11	25	
2-Chlorophenol	0.950	1.07	1.33	1.33	71	80	56 - 102	12	30	
1,4-Dichlorobenzene	0.487	0.528	0.667	0.667	73	79	49 - 99	8	35	
n-Nitroso-di-n-propylamine	0.460	0.521	0.667	0.667	69	78	52 - 102	12	26	
1,2,4-Trichlorobenzene	0.479	0.559	0.667	0.667	72	84	49 - 110	15	30	
4-Chloro-3-methylphenol	0.908	1.10	1.33	1.33	68	83	59 - 113	19	22	
Acenaphthene	0.422	0.512	0.667	0.667	63	77	52 - 103	19	22	
4-Nitrophenol	0.944	1.18	1.33	1.33	71	89	51 - 125	22	23	
2,4-Dinitrotoluene	0.429	0.534	0.667	0.667	64	80	53 - 118	22	23	
Pentachlorophenol	0.957	1.13	1.33	1.33	72	85	25 - 141	17	39	
Pyrene	0.423	0.505	0.667	0.667	63	76	57 - 120	18	20	
Surrogate:										
2-Fluorophenol					68	76	31 - 110			
Phenol-d6					69	79	34 - 109			
Nitrobenzene-d5					69	82	30 - 109			
2-Fluorobiphenyl					66	<i>78</i>	39 - 103			
2,4,6-Tribromophenol					63	76	25 - 120			
Terphenyl-d14					60	71	40 - 117			

Project: 14697

### PCBs EPA 8082A

Matrix: Soil

Units: mg/Kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	tank-soil-B1					
Laboratory ID:	03-037-01					
Aroclor 1016	ND	0.24	EPA 8082A	3-6-15	3-6-15	
Aroclor 1221	ND	0.24	EPA 8082A	3-6-15	3-6-15	
Aroclor 1232	ND	0.24	EPA 8082A	3-6-15	3-6-15	
Aroclor 1242	ND	0.24	EPA 8082A	3-6-15	3-6-15	
Aroclor 1248	ND	0.24	EPA 8082A	3-6-15	3-6-15	
Aroclor 1254	ND	0.24	EPA 8082A	3-6-15	3-6-15	
Aroclor 1260	ND	0.24	EPA 8082A	3-6-15	3-6-15	

Surrogate: Percent Recovery Control Limits DCB 104 55-140

Project: 14697

### PCBs EPA 8082A QUALITY CONTROL

Matrix: Soil

Units: mg/Kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0306S1					
Aroclor 1016	ND	0.050	EPA 8082A	3-6-15	3-6-15	
Aroclor 1221	ND	0.050	EPA 8082A	3-6-15	3-6-15	
Aroclor 1232	ND	0.050	EPA 8082A	3-6-15	3-6-15	
Aroclor 1242	ND	0.050	EPA 8082A	3-6-15	3-6-15	
Aroclor 1248	ND	0.050	EPA 8082A	3-6-15	3-6-15	
Aroclor 1254	ND	0.050	EPA 8082A	3-6-15	3-6-15	
Aroclor 1260	ND	0.050	EPA 8082A	3-6-15	3-6-15	

Surrogate: Percent Recovery Control Limits DCB 91 55-140

Analyte	Re	sult	Spike	Level	Source Result		rcent covery	Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	03-0	22-02									
	MS	MSD	MS	MSD		MS	MSD				_
Aroclor 1260	0.296	0.267	0.500	0.500	ND	59	53	46-136	10	17	
Surrogate:											
DCB						65	62	55-140			

Project: 14697

### TOTAL METALS EPA 6010C/7471B

Matrix: Soil

Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	EPA Method	Prepared	Analyzed	Flags
Lab ID:	03-037-01 tank-soil-B1					
Arsenic	ND	12	6010C	3-5-15	3-5-15	
Barium	170	2.9	6010C	3-5-15	3-5-15	
Cadmium	ND	0.59	6010C	3-5-15	3-5-15	
Chromium	25	0.59	6010C	3-5-15	3-5-15	
Lead	120	5.9	6010C	3-5-15	3-5-15	
Mercury	ND	0.29	7471B	3-6-15	3-6-15	
Selenium	ND	12	6010C	3-5-15	3-5-15	
Silver	ND	1.2	6010C	3-5-15	3-5-15	

Project: 14697

# TOTAL METALS EPA 6010C METHOD BLANK QUALITY CONTROL

Date Extracted: 3-5-15
Date Analyzed: 3-5-15

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: MB0305SM1

Analyte	Method	Result	PQL
Arsenic	6010C	ND	10
Barium	6010C	ND	2.5
Cadmium	6010C	ND	0.50
Chromium	6010C	ND	0.50
Lead	6010C	ND	5.0
Selenium	6010C	ND	10
Silver	6010C	ND	1.0

Project: 14697

# TOTAL MERCURY EPA 7471B METHOD BLANK QUALITY CONTROL

Date Extracted: 3-6-15
Date Analyzed: 3-6-15

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: MB03061

Analyte Method Result PQL

Mercury 7471B **ND** 0.25

Project: 14697

# TOTAL METALS EPA 6010C DUPLICATE QUALITY CONTROL

Date Extracted: 3-5-15
Date Analyzed: 3-5-15

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: 02-189-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	ND	ND	NA	10	
Barium	55.7	54.0	3	2.5	
Cadmium	ND	ND	NA	0.50	
Chromium	55.6	41.4	29	0.50	К
Lead	ND	ND	NA	5.0	
Selenium	ND	ND	NA	10	
Silver	ND	ND	NA	1.0	

Project: 14697

# TOTAL MERCURY EPA 7471B DUPLICATE QUALITY CONTROL

Date Extracted: 3-6-15
Date Analyzed: 3-6-15

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: 03-037-01

Sample Duplicate

Analyte Result Result RPD PQL Flags

Mercury ND ND NA 0.25

Project: 14697

# TOTAL METALS EPA 6010C MS/MSD QUALITY CONTROL

Date Extracted: 3-5-15
Date Analyzed: 3-5-15

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: 02-189-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	94.2	94	89.9	90	5	
Barium	100	165	110	158	103	4	
Cadmium	50.0	50.0	100	48.3	97	3	
Chromium	100	139	83	138	83	0	
Lead	250	229	92	220	88	4	
Selenium	100	95.7	96	94.8	95	1	
Silver	25.0	21.4	86	20.4	82	5	

Project: 14697

# TOTAL MERCURY EPA 7471B MS/MSD QUALITY CONTROL

Date Extracted: 3-6-15
Date Analyzed: 3-6-15

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: 03-037-01

	Spike		Percent		Percent		
Analyte	Level	MS	Recovery	MSD	Recovery	RPD	Flags
Mercury	0.500	0.486	97	0.486	97	0	

Project: 14697

% MOISTURE

Date Analyzed: 3-5-15

Client ID Lab ID % Moisture

tank-soil-B1 03-037-01 15



#### **Data Qualifiers and Abbreviations**

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical \_\_\_\_\_
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.
- Y The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Z The sample chromatogram is similar to mineral spirits with diesel.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference



Turnaround Request (in working days) **Chain of Custody** Laboratory Number:

Page	
9	

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Reviewed/Date	Received	Relinquished	Received	Relinquished	Received	Relinquished Massimus	Signature								tanh-soil	Lab ID Sample Identification	Nathan Moxley	Tasya Gray	Former Kelly-Moore	Project Number: 1469 7	Company: Q Mac	Phone: (425) 883-3881 • www.onsite-env.com	Analytical Laboratory Testing Services 14648 NE 95th Street • Redmond, WA 98052
															3/5/15	Date Sampled	7	<b>X</b>	☐ Star	2 Days	Same Day		Tu ()
Reviewed/Date		(	7	4/2	7	ame	Company								1210	Time Sampled	(other)	2	Standard (7 Days) (TPH analysis 5 Days)	ays	ne Day	(Check One)	Turnaround Request (in working days)
Date			TARY TARY	l-dis	(120)	6									Soil	Matrix	3	D.	s) Days)	3 Days	Day	e)	quest ays)
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Data Package: Standard 

Level III 

Level IV

Electronic Data Deliverables (EDDs)



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

March 11, 2015

Tasya Gray AMEC Environment and Infrastructure, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Re: Analytical Data for Project 14967

Laboratory Reference No. 1503-080

### Dear Tasya:

Enclosed are the analytical results and associated quality control data for samples submitted on March 10, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely.

David Baumeister Project Manager

**Enclosures** 

Project: 14967

#### **Case Narrative**

Samples were collected on March 9, 2015 and received by the laboratory on March 10, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

### Volatiles EPA 8260C Analysis

Method 5035 vials were not supplied, therefore samples were extracted from 4oz jars. Some loss of volatiles may have occurred.

Due to the necessary dilution of the samples some MTCA cleanup levels were not achievable.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Project: 14967

### VOLATILES EPA 8260C Page 1 of 2

Matrix: Soil Units: mg/kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	Tank-soil-B1-B					
Laboratory ID:	03-080-01					
Dichlorodifluoromethane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Chloromethane	ND	0.31	EPA 8260C	3-10-15	3-10-15	
Vinyl Chloride	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Bromomethane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Chloroethane	ND	0.31	EPA 8260C	3-10-15	3-10-15	
Trichlorofluoromethane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
1,1-Dichloroethene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Acetone	ND	0.31	EPA 8260C	3-10-15	3-10-15	
Iodomethane	ND	0.31	EPA 8260C	3-10-15	3-10-15	
Carbon Disulfide	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Methylene Chloride	ND	0.31	EPA 8260C	3-10-15	3-10-15	
(trans) 1,2-Dichloroethene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Methyl t-Butyl Ether	ND	0.063	EPA 8260C	3-10-15	3-10-15	
1,1-Dichloroethane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Vinyl Acetate	ND	0.31	EPA 8260C	3-10-15	3-10-15	
2,2-Dichloropropane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
(cis) 1,2-Dichloroethene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
2-Butanone	ND	0.31	EPA 8260C	3-10-15	3-10-15	
Bromochloromethane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Chloroform	ND	0.063	EPA 8260C	3-10-15	3-10-15	
1,1,1-Trichloroethane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Carbon Tetrachloride	ND	0.063	EPA 8260C	3-10-15	3-10-15	
1,1-Dichloropropene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Benzene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
1,2-Dichloroethane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Trichloroethene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
1,2-Dichloropropane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Dibromomethane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Bromodichloromethane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
2-Chloroethyl Vinyl Ether	ND	0.31	EPA 8260C	3-10-15	3-10-15	
(cis) 1,3-Dichloropropene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Methyl Isobutyl Ketone	ND	0.31	EPA 8260C	3-10-15	3-10-15	
Toluene	ND	0.31	EPA 8260C	3-10-15	3-10-15	
(trans) 1,3-Dichloropropene	ND	0.063	EPA 8260C	3-10-15	3-10-15	

Project: 14967

4-Bromofluorobenzene

### VOLATILES EPA 8260C Page 2 of 2

Chient   D:   D:   O3-080-01					Date	Date	
Autoratory   ID:   03-080-01   0.063   EPA 8260C   3-10-15   3-10-15   1.12-Trichloroethane   ND   0.063   EPA 8260C   3-10-15   3-10-15   1.15   1	Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
1,1,2-Trichloroethane	Client ID:	Tank-soil-B1-B					
Fetrachloroethene	Laboratory ID:	03-080-01					
3-Dichloropropane   ND   0.063   EPA 8260C   3-10-15	1,1,2-Trichloroethane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Part	Tetrachloroethene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Dibromochloromethane	1,3-Dichloropropane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
	2-Hexanone	ND	0.31	EPA 8260C	3-10-15	3-10-15	
Chlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-1	Dibromochloromethane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
1,1,2-Tetrachloroethane	1,2-Dibromoethane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Strip benzene   0.29   0.063   EPA 8260C   3-10-15   3	Chlorobenzene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
n,p-Xylene 1.2 0.13 EPA 8260C 3-10-15 3-10-15 3-10-15 styrene 0.17 0.063 EPA 8260C 3-10-15 3-10-15 styrene ND 0.063 EPA 8260C 3-10-15	1,1,1,2-Tetrachloroethane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Decidence	Ethylbenzene	0.29	0.063	EPA 8260C	3-10-15	3-10-15	
Styrene   ND   0.063   EPA 8260C   3-10-15	m,p-Xylene	1.2	0.13	EPA 8260C	3-10-15	3-10-15	
Samponoform   ND	o-Xylene	0.17	0.063	EPA 8260C	3-10-15	3-10-15	
Sopropy benzene   0.18   0.063   EPA 8260C   3-10-15	Styrene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Stromobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2,2-Tetrachloroethane   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2,3-Trichloropropane   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2,3-Trichloropropane   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2,3-Trichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,3,5-Trimethylbenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,3,5-Trimethylbenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2,4-Trimethylbenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2,4-Trimethylbenzene   0.10   0.063   EPA 8260C   3-10-15   3-10-15     1,3-Dichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,3-Dichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,4-Dichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,4-Dichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2-Dichlorobenzene	Bromoform	ND	0.063	EPA 8260C	3-10-15	3-10-15	
1,1,2,2-Tetrachloroethane	Isopropylbenzene	0.18	0.063	EPA 8260C	3-10-15	3-10-15	
1,2,3-Trichloropropane   ND   0.063   EPA 8260C   3-10-15   3-10	Bromobenzene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
1-Propylbenzene 0.27 0.063 EPA 8260C 3-10-15 3-10-15 2-Chlorotoluene ND 0.063 EPA 8260C 3-10-15 3-10-1	1,1,2,2-Tetrachloroethane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
P-Chlorotoluene ND 0.063 EPA 8260C 3-10-15 3-1	1,2,3-Trichloropropane	ND	0.063	EPA 8260C	3-10-15	3-10-15	
A-Chlorotoluene	n-Propylbenzene	0.27	0.063	EPA 8260C	3-10-15	3-10-15	
1,3,5-Trimethylbenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2,4-Trimethylbenzene   0.10   0.063   EPA 8260C   3-10-15   3-10-15     1,2,4-Trimethylbenzene   0.10   0.063   EPA 8260C   3-10-15   3-10-15     1,2,4-Trimethylbenzene   0.074   0.063   EPA 8260C   3-10-15   3-10-15     1,3-Dichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,3-Dichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,4-Dichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2-Dichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2-Dichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2-Dibromo-3-chloropropane   ND   0.31   EPA 8260C   3-10-15   3-10-15     1,2,4-Trichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2,4-Trichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2,3-Trichlorobenzene   ND   0.31   EPA 8260C   3-10-15   3-10-15     1,2,3-Trichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2,4-Trichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2,4-Trichlorobenzene   ND   0.0	2-Chlorotoluene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
ert-Butylbenzene ND 0.063 EPA 8260C 3-10-15 3-	4-Chlorotoluene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
1,2,4-Trimethylbenzene       0.10       0.063       EPA 8260C       3-10-15       3-10-15         1,3-Dichlorobenzene       0.074       0.063       EPA 8260C       3-10-15       3-10-15         1,3-Dichlorobenzene       ND       0.063       EPA 8260C       3-10-15       3-10-15         1,4-Dichlorobenzene       ND       0.063       EPA 8260C       3-10-15       3-10-15         1,2-Dichlorobenzene       ND       0.063       EPA 8260C       3-10-15       3-10-15         1,2-Dichlorobenzene       ND       0.063       EPA 8260C       3-10-15       3-10-15         1,2-Dibromo-3-chloropropane       ND       0.063       EPA 8260C       3-10-15       3-10-15         1,2,4-Trichlorobenzene       ND       0.063       EPA 8260C       3-10-15       3-10-15         1,2,4-Trichlorobenzene       ND       0.063       EPA 8260C       3-10-15       3-10-15         Naphthalene       0.38       0.063       EPA 8260C       3-10-15       3-10-15         ND       0.063       EPA 8260C       3-10-15       3-10-15         1,2,3-Trichlorobenzene       ND       0.063       EPA 8260C       3-10-15       3-10-15         2,3-Trichlorobenzene       ND       0.063 <td>1,3,5-Trimethylbenzene</td> <td>ND</td> <td>0.063</td> <td>EPA 8260C</td> <td>3-10-15</td> <td>3-10-15</td> <td></td>	1,3,5-Trimethylbenzene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Sec-Butylbenzene   0.074   0.063   EPA 8260C   3-10-15   3-10-15     1,3-Dichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,4-Dichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,4-Dichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2-Dichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2-Dibromo-3-chloropropane   ND   0.063   EPA 8260C   3-10-15   3-10-15     1,2-Dibromo-3-chloropropane   ND   0.31   EPA 8260C   3-10-15   3-10-15     1,2,4-Trichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     1-Exachlorobutadiene   ND   0.31   EPA 8260C   3-10-15   3-10-15     Naphthalene   0.38   0.063   EPA 8260C   3-10-15   3-10-15     1,2,3-Trichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     Naphthalene   0.38   0.063   EPA 8260C   3-10-15   3-10-15     Naphthalene   ND   0.063   EPA 8260C   3-10-15   3-10-15     Naphthalene   ND   0.063   EPA 8260C   3-10-15   3-10-15     ND	tert-Butylbenzene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
1,3-Dichlorobenzene	1,2,4-Trimethylbenzene	0.10	0.063	EPA 8260C	3-10-15	3-10-15	
ND   0.063   EPA 8260C   3-10-15	sec-Butylbenzene	0.074	0.063	EPA 8260C	3-10-15	3-10-15	
,4-Dichlorobenzene	1,3-Dichlorobenzene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
,2-Dichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     ,2-Dibromo-3-chloropropane   ND   0.31   EPA 8260C   3-10-15   3-10-15     ,2,4-Trichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     ,2,4-Trichlorobenzene   ND   0.063   EPA 8260C   3-10-15   3-10-15     Hexachlorobutadiene   ND   0.31   EPA 8260C   3-10-15   3-10-15     Naphthalene   0.38   0.063   EPA 8260C   3-10-15   3-10-15     ND   0.063   EPA 8260C   3-10-15     ND   0.063   EPA 8260C   3-10-15   3-10-	p-Isopropyltoluene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
ND   0.063   EPA 8260C   3-10-15	1,4-Dichlorobenzene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
1,2-Dibromo-3-chloropropane       ND       0.31       EPA 8260C       3-10-15       3-10-15         1,2,4-Trichlorobenzene       ND       0.063       EPA 8260C       3-10-15       3-10-15         Hexachlorobutadiene       ND       0.31       EPA 8260C       3-10-15       3-10-15         Naphthalene       0.38       0.063       EPA 8260C       3-10-15       3-10-15         1,2,3-Trichlorobenzene       ND       0.063       EPA 8260C       3-10-15       3-10-15         Surrogate:       Percent Recovery       Control Limits         Dibromofluoromethane       110       76-131	1,2-Dichlorobenzene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
ND         0.063         EPA 8260C         3-10-15         3-10-15           Hexachlorobutadiene         ND         0.31         EPA 8260C         3-10-15         3-10-15           Naphthalene         0.38         0.063         EPA 8260C         3-10-15         3-10-15           1,2,3-Trichlorobenzene         ND         0.063         EPA 8260C         3-10-15         3-10-15           Surrogate:         Percent Recovery         Control Limits           Dibromofluoromethane         110         76-131	n-Butylbenzene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
Hexachlorobutadiene         ND         0.31         EPA 8260C         3-10-15         3-10-15           Naphthalene         0.38         0.063         EPA 8260C         3-10-15         3-10-15           1,2,3-Trichlorobenzene         ND         0.063         EPA 8260C         3-10-15         3-10-15           Surrogate:         Percent Recovery         Control Limits           Dibromofluoromethane         110         76-131	1,2-Dibromo-3-chloropropane	ND	0.31	EPA 8260C	3-10-15	3-10-15	
Naphthalene         0.38         0.063         EPA 8260C         3-10-15         3-10-15           I,2,3-Trichlorobenzene         ND         0.063         EPA 8260C         3-10-15         3-10-15           Surrogate:         Percent Recovery         Control Limits           Dibromofluoromethane         110         76-131	1,2,4-Trichlorobenzene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
ND 0.063 EPA 8260C 3-10-15 3-10-15  Surrogate: Percent Recovery Control Limits  Dibromofluoromethane 110 76-131	Hexachlorobutadiene	ND	0.31	EPA 8260C	3-10-15	3-10-15	
Surrogate: Percent Recovery Control Limits Dibromofluoromethane 110 76-131	Naphthalene	0.38	0.063	EPA 8260C	3-10-15	3-10-15	
Dibromofluoromethane 110 76-131	1,2,3-Trichlorobenzene	ND	0.063	EPA 8260C	3-10-15	3-10-15	
	Surrogate:	Percent Recovery	Control Limits				
Toluene-d8 103 82-129	Dibromofluoromethane	110	76-131				
	Toluene-d8	103	82-129				

79-126

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Project: 14967

### VOLATILES EPA 8260C METHOD BLANK QUALITY CONTROL

Page 1 of 2

Matrix: Soil Units: mg/kg

Onits. Hig/kg				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Laboratory ID:	MB0310S1					
Dichlorodifluoromethane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Chloromethane	ND	0.0050	EPA 8260C	3-10-15	3-10-15	
Vinyl Chloride	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Bromomethane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Chloroethane	ND	0.0050	EPA 8260C	3-10-15	3-10-15	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Acetone	ND	0.0050	EPA 8260C	3-10-15	3-10-15	
Iodomethane	ND	0.0050	EPA 8260C	3-10-15	3-10-15	
Carbon Disulfide	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Methylene Chloride	ND	0.0050	EPA 8260C	3-10-15	3-10-15	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Vinyl Acetate	ND	0.0050	EPA 8260C	3-10-15	3-10-15	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
2-Butanone	ND	0.0050	EPA 8260C	3-10-15	3-10-15	
Bromochloromethane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Chloroform	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Benzene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Trichloroethene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Dibromomethane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Bromodichloromethane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260C	3-10-15	3-10-15	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260C	3-10-15	3-10-15	
Toluene	ND	0.0050	EPA 8260C	3-10-15	3-10-15	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	

Project: 14967

### VOLATILES EPA 8260C METHOD BLANK QUALITY CONTROL

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				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Labaratan ID.	MD0040C4					
Laboratory ID:	MB0310S1 ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,1,2-Trichloroethane Tetrachloroethene						
	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
2-Hexanone	ND	0.0050	EPA 8260C	3-10-15	3-10-15	
Dibromochloromethane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Chlorobenzene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Ethylbenzene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
m,p-Xylene	ND	0.0020	EPA 8260C	3-10-15	3-10-15	
o-Xylene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Styrene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Bromoform	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Isopropylbenzene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Bromobenzene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
n-Propylbenzene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
2-Chlorotoluene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
4-Chlorotoluene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
tert-Butylbenzene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
sec-Butylbenzene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
p-Isopropyltoluene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
n-Butylbenzene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260C	3-10-15	3-10-15	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	3-10-15	3-10-15	
Hexachlorobutadiene	ND	0.0050	EPA 8260C	3-10-15	3-10-15	
Naphthalene	ND	0.0030	EPA 8260C	3-10-15	3-10-15	
•	ND					
1,2,3-Trichlorobenzene		0.0010	EPA 8260C	3-10-15	3-10-15	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	102	76-131				
Toluene-d8	96	82-129				
4-Bromofluorobenzene	99	<i>79-126</i>				

Project: 14967

### VOLATILES EPA 8260C SB/SBD QUALITY CONTROL

Matrix: Soil Units: mg/kg

	Result		Spike Level		Percent Recovery		Recovery		RPD		
Analyte							Limits	RPD	Limit	Flags	
SPIKE BLANKS											
Laboratory ID:	SB0310S1										
	SB	SBD	SB	SBD	SB	SBD					
1,1-Dichloroethene	0.0460	0.0426	0.0500	0.0500	92	85	66-129	8	15		
Benzene	0.0466	0.0425	0.0500	0.0500	93	85	71-123	9	15		
Trichloroethene	0.0511	0.0454	0.0500	0.0500	102	91	75-115	12	15		
Toluene	0.0477	0.0448	0.0500	0.0500	95	90	75-120	6	15		
Chlorobenzene	0.0472	0.0421	0.0500	0.0500	94	84	75-121	11	15		
Surrogate:											
Dibromofluoromethane					100	103	76-131				
Toluene-d8					93	97	82-129				
4-Bromofluorobenzene					98	100	79-126				

Project: 14967

% MOISTURE

Date Analyzed: 3-10-15

Client ID Lab ID % Moisture

Tank-soil-B1-B 03-080-01 13



# **Data Qualifiers and Abbreviations**

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical \_\_\_\_\_
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.
- Y The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL PQL - Practical Quantitation Limit RPD - Relative Percent Difference



# **Chain of Custody**

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age
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Supposition
NWTPH-HCID NWTPH-Gx/BTEX NWTPH-Gx NWTPH-Dx Volatiles 8260C Halogenated Volatiles 8260C Semivolatiles 8270D/SIM (with low-level PAHs)
Halogenated Volatiles 8260C  Semivolatiles 8270D/SIM (with low-level PAHs)



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

March 11, 2015

Tasya Gray AMEC Environment and Infrastructure, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Re: Analytical Data for Project 14697

Laboratory Reference No. 1502-262

# Dear Tasya:

Enclosed are the analytical results and associated quality control data for samples submitted on February 27, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

**Enclosures** 

Project: 14697

### **Case Narrative**

Samples were collected on February 27, 2015 and received by the laboratory on February 27, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

# **NWTPH Gx/BTEX Analysis**

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

The chromatograms for samples B7-PIPING-B1-5.0, B7-PIPING-B2-5.0, B7-PIPING-S1-4.0 and B7-PIPING-S2-4.0 are similar to mineral spirits with diesel.

The chromatograms for samples B7-PIPING-B3-4.5, B7-PIPING-B4-4.5, B7-PIPING-S3-3.5 and B7-PIPING-S4-3.5 are similar to mineral spirits.

# PAHs EPA 8270D/SIM Analysis

Samples B7-PIPING-B2-5.0 and B7-PIPING-S2-4.0, surrogate's recoveries are not available due to necessary dilution of the samples; the surrogates are flagged with an "S" indicator.

Please note that any other QA/QC issues associated with these extractions and analyses will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Project: 14697

# **NWTPH-Gx/BTEX**

Matrix: Soil

3 3 (1-1- )				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	B7-PIPING-B1-5.0					
Laboratory ID:	02-262-01					
Benzene	0.097	0.029	EPA 8021B	3-3-15	3-4-15	
Toluene	ND	0.14	EPA 8021B	3-3-15	3-4-15	
Ethyl Benzene	0.62	0.14	EPA 8021B	3-3-15	3-4-15	
m,p-Xylene	3.8	0.14	EPA 8021B	3-3-15	3-4-15	
o-Xylene	ND	1.4	EPA 8021B	3-3-15	3-4-15	U1
Gasoline	2600	360	NWTPH-Gx	3-3-15	3-5-15	Z1
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	79	68-123				
Client ID:	B7-PIPING-B2-5.0					
Laboratory ID:	02-262-02					
Benzene	0.41	0.020	EPA 8021B	3-3-15	3-4-15	
Toluene	ND	0.098	EPA 8021B	3-3-15	3-4-15	
Ethyl Benzene	1.2	0.098	EPA 8021B	3-3-15	3-4-15	
m,p-Xylene	8.9	0.098	EPA 8021B	3-3-15	3-4-15	
o-Xylene	4.8	0.098	EPA 8021B	3-3-15	3-4-15	
Gasoline	3000	490	NWTPH-Gx	3-3-15	3-5-15	Z1
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	78	68-123				
Client ID:	B7-PIPING-B3-4.5					
Laboratory ID:	02-262-03					
Benzene	0.12	0.020	EPA 8021B	3-3-15	3-4-15	
Toluene	ND	0.10	EPA 8021B	3-3-15	3-4-15	
Ethyl Benzene	0.91	0.10	EPA 8021B	3-3-15	3-4-15	
m,p-Xylene	15	5.1	EPA 8021B	3-3-15	3-5-15	
o-Xylene	4.7	0.10	EPA 8021B	3-3-15	3-4-15	
Gasoline	5800	510	NWTPH-Gx	3-3-15	3-5-15	Z2
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	77	68-123				

Project: 14697

# **NWTPH-Gx/BTEX**

Matrix: Soil

			Date	Date	
Result	PQL	Method	Prepared	Analyzed	Flags
B7-PIPING-B4-4.5					
02-262-04					
0.094	0.024	EPA 8021B	3-3-15	3-4-15	
4.9	0.12	EPA 8021B	3-3-15	3-4-15	
11	0.12	EPA 8021B	3-3-15	3-4-15	
31	1.2	EPA 8021B	3-3-15	3-5-15	
5.9	0.12	EPA 8021B	3-3-15	3-4-15	
1400	120	NWTPH-Gx	3-3-15	3-5-15	Z2
Percent Recovery	Control Limits				
74	68-123				
B7-PIPING-S1-4.0					
02-262-05					
0.11	0.035	EPA 8021B	3-3-15	3-6-15	
ND	0.17	EPA 8021B	3-3-15	3-6-15	
ND	0.17	EPA 8021B	3-3-15	3-6-15	
0.64	0.17	EPA 8021B	3-3-15	3-6-15	
ND	0.17	EPA 8021B	3-3-15	3-6-15	
250	17	NWTPH-Gx	3-3-15	3-6-15	Z1
Percent Recovery	Control Limits				
69	68-123				
B7-PIPING-S2-4.0					
02-262-06					
0.069	0.020	EPA 8021B	3-3-15	3-6-15	
ND	0.095	EPA 8021B	3-3-15	3-6-15	
7.4	0.095	EPA 8021B	3-3-15	3-6-15	
9.5	2.4	EPA 8021B	3-3-15	3-6-15	
1.0	0.095	EPA 8021B	3-3-15	3-6-15	
1300	240	NWTPH-Gx	3-3-15	3-6-15	<b>Z</b> 1
Percent Recovery	Control Limits				
77	68-123				
	B7-PIPING-B4-4.5 02-262-04 0.094 4.9 11 31 5.9 1400 Percent Recovery 74 B7-PIPING-S1-4.0 02-262-05 0.11 ND ND 0.64 ND 250 Percent Recovery 69 B7-PIPING-S2-4.0 02-262-06 0.069 ND 7.4 9.5 1.0 1300 Percent Recovery	B7-PIPING-B4-4.5           02-262-04         0.024           4.9         0.12           11         0.12           31         1.2           5.9         0.12           1400         120           Percent Recovery 74         Control Limits 68-123           B7-PIPING-S1-4.0         0.035           ND         0.17           ND         0.17           ND         0.17           ND         0.17           ND         0.17           Percent Recovery 69         Control Limits 68-123           B7-PIPING-S2-4.0         0.020           ND         0.095           7.4         0.095           9.5         2.4           1.0         0.095           1300         240           Percent Recovery         Control Limits	B7-PIPING-B4-4.5         02-262-04       0.024       EPA 8021B         4.9       0.12       EPA 8021B         11       0.12       EPA 8021B         31       1.2       EPA 8021B         5.9       0.12       EPA 8021B         1400       120       NWTPH-Gx         Percent Recovery 74       Control Limits 68-123         B7-PIPING-S1-4.0       0.035       EPA 8021B         ND       0.17       EPA 8021B         Percent Recovery 69       Control Limits 68-123         B7-PIPING-S2-4.0       0.02-262-06       0.095       EPA 8021B         ND       0.095       EPA 8021B         7.4       0.095       EPA 8021B         9.5       2.4       EPA 8021B         1.0       0.095       EPA 8021B         1.0       0.095       EPA 8021B         1300       240       NWTPH-Gx	Result         PQL         Method         Prepared           B7-PIPING-B4-4.5         02-262-04         0.094         0.024         EPA 8021B         3-3-15           4.9         0.12         EPA 8021B         3-3-15         3-3-15           11         0.12         EPA 8021B         3-3-15         3-3-15           31         1.2         EPA 8021B         3-3-15         3-3-15           5.9         0.12         EPA 8021B         3-3-15           1400         120         NWTPH-Gx         3-3-15           Percent Recovery Control Limits 68-123           B7-PIPING-S1-4.0         0.035         EPA 8021B         3-3-15           ND         0.17         EPA 8021B         3-3-15           Percent Recovery Control Limits 68-123           B7-PIPING-S2-4.0         02-262-06         0.069         0.020         EPA 8021B         3-3-15           ND         0.095         EPA 8021B         3-3-15           7.4         0.095         EPA 8021B	Result         PQL         Method         Prepared         Analyzed           B7-PIPING-B4-4.5 02-262-04         50.094         0.024         EPA 8021B         3-3-15         3-4-15           4.9         0.12         EPA 8021B         3-3-15         3-4-15           11         0.12         EPA 8021B         3-3-15         3-4-15           31         1.2         EPA 8021B         3-3-15         3-4-15           5.9         0.12         EPA 8021B         3-3-15         3-4-15           1400         120         NWTPH-Gx         3-3-15         3-5-15           Percent Recovery Control Limits 74         68-123           B7-PIPING-S1-4.0           02-262-05         0.17         EPA 8021B         3-3-15         3-6-15           ND         0.17         EPA 8021B         3-3-15         3-6-15           Percent Re

Project: 14697

# **NWTPH-Gx/BTEX**

Matrix: Soil

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	B7-PIPING-S3-3.5					,
Laboratory ID:	02-262-07					
Benzene	0.28	0.020	EPA 8021B	3-3-15	3-4-15	,
Toluene	ND	0.048	EPA 8021B	3-3-15	3-4-15	
Ethyl Benzene	0.96	0.048	EPA 8021B	3-3-15	3-4-15	
m,p-Xylene	7.1	4.8	EPA 8021B	3-3-15	3-6-15	
o-Xylene	3.4	0.048	EPA 8021B	3-3-15	3-4-15	
Gasoline	7900	480	NWTPH-Gx	3-3-15	3-6-15	Z2
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	88	68-123				
Client ID:	B7-PIPING-S4-3.5					
Laboratory ID:	02-262-08					
Benzene	0.30	0.022	EPA 8021B	3-3-15	3-4-15	
Toluene	ND	0.11	EPA 8021B	3-3-15	3-4-15	
Ethyl Benzene	1.4	0.11	EPA 8021B	3-3-15	3-4-15	
m,p-Xylene	30	5.5	EPA 8021B	3-3-15	3-5-15	
o-Xylene	7.6	0.11	EPA 8021B	3-3-15	3-4-15	
Gasoline	8700	1100	NWTPH-Gx	3-3-15	3-6-15	Z2
Surrogate:	Percent Recovery	Control Limits			_	
Fluorobenzene	78	68-123				

Project: 14697

# NWTPH-Gx/BTEX QUALITY CONTROL

Matrix: Soil

Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0303S2					
Benzene	ND	0.020	EPA 8021B	3-3-15	3-4-15	
Toluene	ND	0.050	EPA 8021B	3-3-15	3-4-15	
Ethyl Benzene	ND	0.050	EPA 8021B	3-3-15	3-4-15	
m,p-Xylene	ND	0.050	EPA 8021B	3-3-15	3-4-15	
o-Xylene	ND	0.050	EPA 8021B	3-3-15	3-4-15	
Gasoline	ND	5.0	NWTPH-Gx	3-3-15	3-4-15	

Surrogate: Percent Recovery Control Limits Fluorobenzene 91 68-123

					Source	Pe	rcent	Recovery		RPD	
Analyte	Res	sult	Spike	Level	Result	Red	covery	Limits	RPD	Limit	Flags
DUPLICATE											
Laboratory ID:	02-25	55-06									
	ORIG	DUP									
Benzene	ND	ND	NA	NA			NA	NA	NA	30	
Toluene	ND	ND	NA	NA			NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA			NA	NA	NA	30	
m,p-Xylene	ND	ND	NA	NA			NA	NA	NA	30	
o-Xylene	ND	ND	NA	NA			NA	NA	NA	30	
Gasoline	ND	ND	NA	NA			NA	NA	NA	30	
Surrogate:											
Fluorobenzene						90	96	68-123			
SPIKE BLANKS											
Laboratory ID:	SB03	03S1									
	SB	SBD	SB	SBD		SB	SBD				
Benzene	0.928	0.969	1.00	1.00		93	97	75-117	4	13	
Toluene	0.935	0.978	1.00	1.00		94	98	78-118	4	12	
Ethyl Benzene	0.923	0.973	1.00	1.00		92	97	78-118	5	12	
m,p-Xylene	0.932	0.979	1.00	1.00		93	98	78-121	5	13	
o-Xylene	0.924	0.960	1.00	1.00		92	96	77-119	4	13	
Surrogate:											
Fluorobenzene						93	96	68-123			

# **NWTPH-Dx**

Matrix: Soil

A1-4-	Desuit	DOL		Date	Date	<b>F</b> la
Analyte Client ID:	Result B7-PIPING-B1-5.0	PQL	Method	Prepared	Analyzed	Flags
Laboratory ID:	02-262-01					
Diesel Range Organics	3300	35	NWTPH-Dx	3-5-15	3-6-15	M
Lube Oil	370	70	NWTPH-Dx	3-5-15	3-6-15	N1
Surrogate:	Percent Recovery	Control Limits	INVITITEDA	0-0-10	3-0-13	INI
o-Terphenyl	80	50-150				
, ,						
Client ID:	B7-PIPING-B2-5.0					
Laboratory ID:	02-262-02					
Diesel Range Organics	4100	29	NWTPH-Dx	3-5-15	3-6-15	M
Lube Oil	710	59	NWTPH-Dx	3-5-15	3-6-15	N1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	90	50-150				
Client ID:	B7-PIPING-B3-4.5					
Laboratory ID:	02-262-03					
Diesel Range Organics	ND	1600	NWTPH-Dx	3-5-15	3-6-15	U1,M1
Lube Oil	67	55	NWTPH-Dx	3-5-15	3-6-15	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	90	50-150				
Client ID:	B7-PIPING-B4-4.5					
Laboratory ID:	02-262-04					
Diesel Range Organics	1300	30	NWTPH-Dx	3-5-15	3-6-15	M
Lube Oil	350	60	NWTPH-Dx	3-5-15	3-6-15	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	95	50-150				
Client ID:	B7-PIPING-S1-4.0					
Laboratory ID:	02-262-05					
Diesel Range Organics	14000	210	NWTPH-Dx	3-5-15	3-6-15	NIA
Lube Oil	6100 Percent Recovery	410	NWTPH-Dx	3-5-15	3-6-15	N1
Surrogate: o-Terphenyl	106	Control Limits 50-150				
о-тегрпенуі	100	30-130				
Client ID:	B7-PIPING-S2-4.0					
Laboratory ID:	02-262-06					
Diesel Range Organics	7400	150	NWTPH-Dx	3-5-15	3-6-15	
Lube Oil Range Organics	5600	300	NWTPH-Dx	3-5-15	3-6-15	
Surrogate:	Percent Recovery	Control Limits		00.0	00.0	
o-Terphenyl	120	50-150				

Project: 14697

# **NWTPH-Dx**

Matrix: Soil

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	B7-PIPING-S3-3.5					
Laboratory ID:	02-262-07					
Diesel Range Organics	ND	1900	NWTPH-Dx	3-5-15	3-6-15	U1,M1
Lube Oil	61	57	NWTPH-Dx	3-5-15	3-6-15	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	84	50-150				
Client ID:	B7-PIPING-S4-3.5					
Laboratory ID:	02-262-08					
Diesel Range Organics	ND	2900	NWTPH-Dx	3-5-15	3-6-15	U1,M1
Lube Oil Range Organics	ND	55	NWTPH-Dx	3-5-15	3-6-15	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	99	50-150				

Project: 14697

# **NWTPH-Dx QUALITY CONTROL**

Matrix: Soil

Units: mg/Kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0305S2					
Diesel Range Organics	ND	25	NWTPH-Dx	3-5-15	3-5-15	
Lube Oil Range Organics	ND	50	NWTPH-Dx	3-5-15	3-5-15	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	85	50-150				

				Source	Percent	Recovery		RPD	
Analyte	Res	sult	Spike Lev	el Result	Recovery	Limits	RPD	Limit	Flags
DUPLICATE									
Laboratory ID:	03-02	20-03							
	ORIG	DUP							
Mineral Oil	ND	ND	NA N	IA	NA	NA	NA	NA	X1
Surrogate:									

Surrogate:

o-Terphenyl 116 113 50-150

Project: 14697

# TOTAL METALS EPA 6010C/7471B

Matrix: Soil

				Date	Date	
Analyte	Result	PQL	EPA Method	Prepared	Analyzed	Flags
Lab ID: Client ID:	02-262-01 <b>B7-PIPING-B1-5.0</b>					
Arsenic	ND	14	6010C	3-6-15	3-6-15	
Barium	24	3.5	6010C	3-6-15	3-6-15	
Cadmium	ND	0.70	6010C	3-6-15	3-6-15	
Chromium	7.8	0.70	6010C	3-6-15	3-6-15	
Lead	ND	7.0	6010C	3-6-15	3-6-15	
Mercury	ND	0.35	7471B	3-6-15	3-6-15	
Selenium	ND	14	6010C	3-6-15	3-6-15	
Silver	ND	1.4	6010C	3-6-15	3-6-15	

Lab ID: Client ID:	02-262-02 <b>B7-PIPING-B2-5.0</b>					
Arsenic	ND	12	6010C	3-6-15	3-6-15	
Barium	21	2.9	6010C	3-6-15	3-6-15	
Cadmium	ND	0.59	6010C	3-6-15	3-6-15	
Chromium	9.3	0.59	6010C	3-6-15	3-6-15	
Lead	ND	5.9	6010C	3-6-15	3-6-15	
Mercury	ND	0.29	7471B	3-6-15	3-6-15	
Selenium	ND	12	6010C	3-6-15	3-6-15	
Silver	ND	1.2	6010C	3-6-15	3-6-15	

Project: 14697

# TOTAL METALS EPA 6010C/7471B

Matrix: Soil

				Date	Date	
Analyte	Result	PQL	<b>EPA Method</b>	Prepared	Analyzed	Flags
Lab ID: Client ID:	02-262-03 <b>B7-PIPING-B3-4.5</b>					
Arsenic	ND	11	6010C	3-6-15	3-6-15	
Barium	41	2.8	6010C	3-6-15	3-6-15	
Cadmium	ND	0.55	6010C	3-6-15	3-6-15	
Chromium	9.9	0.55	6010C	3-6-15	3-6-15	
Lead	ND	5.5	6010C	3-6-15	3-6-15	
Mercury	ND	0.28	7471B	3-6-15	3-6-15	
Selenium	ND	11	6010C	3-6-15	3-6-15	
Silver	ND	1.1	6010C	3-6-15	3-6-15	

Lab ID:	02-262-04					
Client ID:	B7-PIPING-B4-4.5					
Arsenic	ND	12	6010C	3-6-15	3-6-15	
Barium	98	3.0	6010C	3-6-15	3-6-15	
Cadmium	ND	0.60	6010C	3-6-15	3-6-15	
Chromium	18	0.60	6010C	3-6-15	3-6-15	
Lead	24	6.0	6010C	3-6-15	3-6-15	
Mercury	ND	0.30	7471B	3-6-15	3-6-15	
Selenium	ND	12	6010C	3-6-15	3-6-15	
Silver	ND	1.2	6010C	3-6-15	3-6-15	

Project: 14697

# TOTAL METALS EPA 6010C/7471B

Matrix: Soil

				Date	Date	
Analyte	Result	PQL	<b>EPA Method</b>	Prepared	Analyzed	Flags
Lab ID:	02-262-05					
Client ID:	B7-PIPING-S1-4.0					
Arsenic	ND	17	6010C	3-6-15	3-6-15	
Barium	710	4.1	6010C	3-6-15	3-6-15	
Cadmium	ND	0.83	6010C	3-6-15	3-6-15	
Chromium	47	0.83	6010C	3-6-15	3-6-15	
Lead	660	8.3	6010C	3-6-15	3-6-15	
Mercury	0.52	0.41	7471B	3-6-15	3-6-15	
Selenium	ND	17	6010C	3-6-15	3-6-15	
Silver	ND	1.7	6010C	3-6-15	3-6-15	

Lab ID: Client ID:	02-262-06 <b>B7-PIPING-S2-4.0</b>				
Arsenic	ND	12	6010C	3-6-15	3-6-15
arium	100	3.0	6010C	3-6-15	3-6-15
admium	ND	0.60	6010C	3-6-15	3-6-15
romium	24	0.60	6010C	3-6-15	3-6-15
ad	30	6.0	6010C	3-6-15	3-6-15
ercury	ND	0.30	7471B	3-6-15	3-6-15
elenium	ND	12	6010C	3-6-15	3-6-15
Silver	ND	1.2	6010C	3-6-15	3-6-15

Project: 14697

# TOTAL METALS EPA 6010C/7471B

Matrix: Soil

				Date	Date	
Analyte	Result	PQL	<b>EPA Method</b>	Prepared	Analyzed	Flags
Lab ID:	02-262-07					
Client ID:	B7-PIPING-S3-3.5					
Arsenic	ND	11	6010C	3-6-15	3-6-15	
Barium	52	2.8	6010C	3-6-15	3-6-15	
Cadmium	ND	0.57	6010C	3-6-15	3-6-15	
Chromium	8.6	0.57	6010C	3-6-15	3-6-15	
Lead	ND	5.7	6010C	3-6-15	3-6-15	
Mercury	ND	0.28	7471B	3-6-15	3-6-15	
Selenium	ND	11	6010C	3-6-15	3-6-15	
Silver	ND	1.1	6010C	3-6-15	3-6-15	

Lab ID:	02-262-08					
Client ID:	B7-PIPING-S4-3.5					
Arsenic	ND	11	6010C	3-6-15	3-6-15	
Barium	33	2.8	6010C	3-6-15	3-6-15	
Cadmium	ND	0.55	6010C	3-6-15	3-6-15	
Chromium	8.5	0.55	6010C	3-6-15	3-6-15	
Lead	ND	5.5	6010C	3-6-15	3-6-15	
Mercury	ND	0.28	7471B	3-6-15	3-6-15	
Selenium	ND	11	6010C	3-6-15	3-6-15	
Silver	ND	1.1	6010C	3-6-15	3-6-15	

Project: 14697

# TOTAL METALS EPA 6010C METHOD BLANK QUALITY CONTROL

Date Extracted: 3-6-15
Date Analyzed: 3-6-15

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: MB0306SM2

Analyte	Method	Result	PQL
Arsenic	6010C	ND	10
Barium	6010C	ND	2.5
Cadmium	6010C	ND	0.50
Chromium	6010C	ND	0.50
Lead	6010C	ND	5.0
Selenium	6010C	ND	10
Silver	6010C	ND	1.0

Project: 14697

# TOTAL MERCURY EPA 7471B METHOD BLANK QUALITY CONTROL

Date Extracted: 3-6-15
Date Analyzed: 3-6-15

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: MB0306S1

Analyte Method Result PQL

Mercury 7471B **ND** 0.25

Project: 14697

# TOTAL METALS EPA 6010C DUPLICATE QUALITY CONTROL

Date Extracted: 3-6-15
Date Analyzed: 3-6-15

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: 02-262-03

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	ND	ND	NA	10	
Barium	37.0	39.3	6	2.5	
Cadmium	ND	ND	NA	0.50	
Chromium	8.95	8.90	1	0.50	
Lead	ND	ND	NA	5.0	
Selenium	ND	ND	NA	10	
Silver	ND	ND	NA	1.0	

Project: 14697

TOTAL MERCURY
EPA 7471B
DUPLICATE QUALITY CONTROL

Date Extracted: 3-6-15
Date Analyzed: 3-6-15

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: 03-037-01

Sample Duplicate

Analyte Result Repl PQL Flags

Mercury ND ND NA 0.25

Project: 14697

# TOTAL METALS EPA 6010C MS/MSD QUALITY CONTROL

Date Extracted: 3-6-15
Date Analyzed: 3-6-15

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: 02-262-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	96.8	97	97.2	97	0	
Barium	100	151	114	141	104	6	
Cadmium	50.0	49.4	99	49.4	99	0	
Chromium	100	106	97	105	96	1	
Lead	250	252	101	251	100	0	
Selenium	100	96.5	96	94.1	94	3	
Silver	25.0	25.1	100	25.1	100	0	

Project: 14697

**TOTAL MERCURY EPA 7471B MS/MSD QUALITY CONTROL** 

Date Extracted: 3-6-15 Date Analyzed: 3-6-15

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: 03-037-01

	Spike		Percent		Percent		
Analyte	Level	MS	Recovery	MSD	Recovery	RPD	Flags
Mercury	0.500	0.486	97	0.486	97	0	

Project: 14697

# cPAHs EPA 8270D/SIM

			Date	Date	
Result	PQL	Method	Prepared	Analyzed	Flags
B7-PIPING-B1-5.0					
02-262-01					
0.45	0.19	EPA 8270D/SIM	3-8-15	3-10-15	
0.47	0.19	EPA 8270D/SIM	3-8-15	3-10-15	
0.26	0.19	EPA 8270D/SIM	3-8-15	3-10-15	
0.27	0.19	EPA 8270D/SIM	3-8-15	3-10-15	
0.42	0.19	EPA 8270D/SIM	3-8-15	3-10-15	
ND	0.19	EPA 8270D/SIM	3-8-15	3-10-15	
ND	0.19	EPA 8270D/SIM	3-8-15	3-10-15	
Percent Recovery	Control Limits				
97	32 - 114				
80	33 - 121				
76	31 - 116				
	B7-PIPING-B1-5.0 02-262-01 0.45 0.47 0.26 0.27 0.42 ND ND Percent Recovery 97 80	B7-PIPING-B1-5.0         02-262-01       0.19         0.45       0.19         0.47       0.19         0.26       0.19         0.27       0.19         ND       0.19         ND       0.19         Percent Recovery       Control Limits         97       32 - 114         80       33 - 121	B7-PIPING-B1-5.0         02-262-01       0.19       EPA 8270D/SIM         0.47       0.19       EPA 8270D/SIM         0.26       0.19       EPA 8270D/SIM         0.27       0.19       EPA 8270D/SIM         0.42       0.19       EPA 8270D/SIM         ND       0.19       EPA 8270D/SIM         ND       0.19       EPA 8270D/SIM         Percent Recovery       Control Limits         97       32 - 114         80       33 - 121	Result         PQL         Method         Prepared           B7-PIPING-B1-5.0 <td>Result         PQL         Method         Prepared         Analyzed           B7-PIPING-B1-5.0           02-262-01         02-262-01         0.19         EPA 8270D/SIM         3-8-15         3-10-15           0.45         0.19         EPA 8270D/SIM         3-8-15         3-10-15           0.26         0.19         EPA 8270D/SIM         3-8-15         3-10-15           0.27         0.19         EPA 8270D/SIM         3-8-15         3-10-15           0.42         0.19         EPA 8270D/SIM         3-8-15         3-10-15           ND         0.19         EPA 8270D/SIM         3-8-15         3-10-15           ND         0.19         EPA 8270D/SIM         3-8-15         3-10-15           Percent Recovery         Control Limits           97         32 - 114         32 - 114         380         33 - 121</td>	Result         PQL         Method         Prepared         Analyzed           B7-PIPING-B1-5.0           02-262-01         02-262-01         0.19         EPA 8270D/SIM         3-8-15         3-10-15           0.45         0.19         EPA 8270D/SIM         3-8-15         3-10-15           0.26         0.19         EPA 8270D/SIM         3-8-15         3-10-15           0.27         0.19         EPA 8270D/SIM         3-8-15         3-10-15           0.42         0.19         EPA 8270D/SIM         3-8-15         3-10-15           ND         0.19         EPA 8270D/SIM         3-8-15         3-10-15           ND         0.19         EPA 8270D/SIM         3-8-15         3-10-15           Percent Recovery         Control Limits           97         32 - 114         32 - 114         380         33 - 121

Project: 14697

# cPAHs EPA 8270D/SIM

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	B7-PIPING-B2-5.0					
Laboratory ID:	02-262-02					
Benzo[a]anthracene	4.1	0.31	EPA 8270D/SIM	3-8-15	3-10-15	
Chrysene	4.3	0.31	EPA 8270D/SIM	3-8-15	3-10-15	
Benzo[b]fluoranthene	3.2	0.31	EPA 8270D/SIM	3-8-15	3-10-15	
Benzo(j,k)fluoranthene	3.7	0.31	EPA 8270D/SIM	3-8-15	3-10-15	
Benzo[a]pyrene	4.6	0.31	EPA 8270D/SIM	3-8-15	3-10-15	
Indeno(1,2,3-c,d)pyrene	1.9	0.31	EPA 8270D/SIM	3-8-15	3-10-15	
Dibenz[a,h]anthracene	0.73	0.31	EPA 8270D/SIM	3-8-15	3-10-15	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl		32 - 114				S
Pyrene-d10		33 - 121				S
Terphenyl-d14		31 - 116				S

Project: 14697

# cPAHs EPA 8270D/SIM

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	<b>B7-PIPING-B3-4.5</b>					
Laboratory ID:	02-262-03					
Benzo[a]anthracene	ND	0.015	EPA 8270D/SIM	3-8-15	3-9-15	
Chrysene	0.020	0.015	EPA 8270D/SIM	3-8-15	3-9-15	
Benzo[b]fluoranthene	0.020	0.015	EPA 8270D/SIM	3-8-15	3-9-15	
Benzo(j,k)fluoranthene	ND	0.015	EPA 8270D/SIM	3-8-15	3-9-15	
Benzo[a]pyrene	0.027	0.015	EPA 8270D/SIM	3-8-15	3-9-15	
Indeno(1,2,3-c,d)pyrene	0.044	0.015	EPA 8270D/SIM	3-8-15	3-9-15	
Dibenz[a,h]anthracene	ND	0.015	EPA 8270D/SIM	3-8-15	3-9-15	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	104	32 - 114				
Pyrene-d10	98	33 - 121				
Terphenyl-d14	83	31 - 116				

Project: 14697

# cPAHs EPA 8270D/SIM

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	<b>B7-PIPING-B4-4.5</b>					
Laboratory ID:	02-262-04					
Benzo[a]anthracene	0.19	0.016	EPA 8270D/SIM	3-8-15	3-10-15	
Chrysene	0.17	0.016	EPA 8270D/SIM	3-8-15	3-10-15	
Benzo[b]fluoranthene	0.31	0.016	EPA 8270D/SIM	3-8-15	3-10-15	
Benzo(j,k)fluoranthene	0.12	0.016	EPA 8270D/SIM	3-8-15	3-10-15	
Benzo[a]pyrene	0.17	0.016	EPA 8270D/SIM	3-8-15	3-10-15	
Indeno(1,2,3-c,d)pyrene	0.13	0.016	EPA 8270D/SIM	3-8-15	3-10-15	
Dibenz[a,h]anthracene	0.052	0.016	EPA 8270D/SIM	3-8-15	3-10-15	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	95	32 - 114				
Pyrene-d10	90	33 - 121				
Terphenyl-d14	104	31 - 116				
Terphenyl-d14	104	31 - 116				

Project: 14697

# cPAHs EPA 8270D/SIM

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	B7-PIPING-S1-4.0					
Laboratory ID:	02-262-05					
Benzo[a]anthracene	3.2	0.11	EPA 8270D/SIM	3-8-15	3-10-15	
Chrysene	3.1	0.11	EPA 8270D/SIM	3-8-15	3-10-15	
Benzo[b]fluoranthene	9.2	0.11	EPA 8270D/SIM	3-8-15	3-10-15	
Benzo(j,k)fluoranthene	2.4	0.11	EPA 8270D/SIM	3-8-15	3-10-15	
Benzo[a]pyrene	7.8	0.11	EPA 8270D/SIM	3-8-15	3-10-15	
Indeno(1,2,3-c,d)pyrene	9.1	0.11	EPA 8270D/SIM	3-8-15	3-10-15	
Dibenz[a,h]anthracene	2.1	0.11	EPA 8270D/SIM	3-8-15	3-10-15	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	97	32 - 114				
Pyrene-d10	67	33 - 121				
Terphenyl-d14	66	31 - 116				
2-Fluorobiphenyl Pyrene-d10	97 67	32 - 114 33 - 121				

Project: 14697

# cPAHs EPA 8270D/SIM

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	B7-PIPING-S2-4.0					
Laboratory ID:	02-262-06					
Benzo[a]anthracene	50	1.6	EPA 8270D/SIM	3-8-15	3-10-15	
Chrysene	52	1.6	EPA 8270D/SIM	3-8-15	3-10-15	
Benzo[b]fluoranthene	53	1.6	EPA 8270D/SIM	3-8-15	3-10-15	
Benzo(j,k)fluoranthene	44	1.6	EPA 8270D/SIM	3-8-15	3-10-15	
Benzo[a]pyrene	51	1.6	EPA 8270D/SIM	3-8-15	3-10-15	
Indeno(1,2,3-c,d)pyrene	28	1.6	EPA 8270D/SIM	3-8-15	3-10-15	
Dibenz[a,h]anthracene	12	1.6	EPA 8270D/SIM	3-8-15	3-10-15	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl		32 - 114				S
Pyrene-d10		33 - 121				S
Terphenyl-d14		31 - 116				S

Project: 14697

# cPAHs EPA 8270D/SIM

			Date	Date	
Result	PQL	Method	Prepared	Analyzed	Flags
B7-PIPING-S3-3.5					
02-262-07					
ND	0.0076	EPA 8270D/SIM	3-8-15	3-11-15	
ND	0.0076	EPA 8270D/SIM	3-8-15	3-11-15	
ND	0.0076	EPA 8270D/SIM	3-8-15	3-11-15	
ND	0.0076	EPA 8270D/SIM	3-8-15	3-11-15	
ND	0.0076	EPA 8270D/SIM	3-8-15	3-11-15	
ND	0.0076	EPA 8270D/SIM	3-8-15	3-11-15	
ND	0.0076	EPA 8270D/SIM	3-8-15	3-11-15	
Percent Recovery	Control Limits				
79	32 - 114				
78	33 - 121				
80	31 - 116				
	B7-PIPING-S3-3.5 02-262-07 ND ND ND ND ND ND ND ND Percent Recovery 79 78	B7-PIPING-S3-3.5         02-262-07       0.0076         ND       0.0076         Percent Recovery       Control Limits         79       32 - 114         78       33 - 121	B7-PIPING-S3-3.5           02-262-07         0.0076         EPA 8270D/SIM           ND         0.0076         EPA 8270D/SIM           Percent Recovery         Control Limits           79         32 - 114           78         33 - 121	Result         PQL         Method         Prepared           B7-PIPING-S3-3.5              02-262-07              ND         0.0076         EPA 8270D/SIM         3-8-15           ND         3-8-15         3-8-15           ND	Result         PQL         Method         Prepared         Analyzed           B7-PIPING-S3-3.5           02-262-07         V         V         3-8-15         3-11-15           ND         0.0076         EPA 8270D/SIM         3-8-15         3-11-15           Percent Recovery         Control Limits           79         32 - 114         3-8-15         3-11-15           78         33 - 121         33 - 121         3-11-15         3-11-15

Project: 14697

# cPAHs EPA 8270D/SIM

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	<b>B7-PIPING-S4-3.5</b>					
Laboratory ID:	02-262-08					
Benzo[a]anthracene	ND	0.0074	EPA 8270D/SIM	3-8-15	3-10-15	
Chrysene	0.0095	0.0074	EPA 8270D/SIM	3-8-15	3-10-15	
Benzo[b]fluoranthene	0.013	0.0074	EPA 8270D/SIM	3-8-15	3-10-15	
Benzo(j,k)fluoranthene	0.0081	0.0074	EPA 8270D/SIM	3-8-15	3-10-15	
Benzo[a]pyrene	0.027	0.0074	EPA 8270D/SIM	3-8-15	3-10-15	
Indeno(1,2,3-c,d)pyrene	0.052	0.0074	EPA 8270D/SIM	3-8-15	3-10-15	
Dibenz[a,h]anthracene	0.0081	0.0074	EPA 8270D/SIM	3-8-15	3-10-15	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	89	32 - 114				
Pyrene-d10	88	33 - 121				
Terphenyl-d14	81	31 - 116				
Benzo(j,k)fluoranthene Benzo[a]pyrene Indeno(1,2,3-c,d)pyrene Dibenz[a,h]anthracene Surrogate: 2-Fluorobiphenyl Pyrene-d10	0.0081 0.027 0.052 0.0081 Percent Recovery 89 88	0.0074 0.0074 0.0074 0.0074 Control Limits 32 - 114 33 - 121	EPA 8270D/SIM EPA 8270D/SIM EPA 8270D/SIM EPA 8270D/SIM	3-8-15 3-8-15 3-8-15	3-10-15 3-10-15 3-10-15	

Project: 14697

# cPAHs EPA 8270D/SIM METHOD BLANK QUALITY CONTROL

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Laboratory ID:	MB0308S1					
Benzo[a]anthracene	ND	0.0067	EPA 8270D/SIM	3-8-15	3-9-15	_
Chrysene	ND	0.0067	EPA 8270D/SIM	3-8-15	3-9-15	
Benzo[b]fluoranthene	ND	0.0067	EPA 8270D/SIM	3-8-15	3-9-15	
Benzo(j,k)fluoranthene	ND	0.0067	EPA 8270D/SIM	3-8-15	3-9-15	
Benzo[a]pyrene	ND	0.0067	EPA 8270D/SIM	3-8-15	3-9-15	
Indeno(1,2,3-c,d)pyrene	ND	0.0067	EPA 8270D/SIM	3-8-15	3-9-15	
Dibenz[a,h]anthracene	ND	0.0067	EPA 8270D/SIM	3-8-15	3-9-15	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	92	32 - 114				
Pyrene-d10	88	33 - 121				
Terphenyl-d14	79	31 - 116				

Project: 14697

# cPAHs EPA 8270D/SIM MS/MSD QUALITY CONTROL

					Source	Per	cent	Recovery		RPD	
Analyte	Res	sult	Spike	Level	Result	Rec	overy	Limits	RPD	Limit	Flags
MATRIX SPIKES											
Laboratory ID:	03-0	23-03									
	MS	MSD	MS	MSD		MS	MSD				
Benzo[a]anthracene	0.0555	0.0706	0.0833	0.0833	ND	67	85	42 - 134	24	27	
Chrysene	0.0697	0.0724	0.0833	0.0833	ND	84	87	45 - 114	4	27	
Benzo[b]fluoranthene	0.0739	0.0909	0.0833	0.0833	ND	89	109	38 - 131	20	33	
Benzo(j,k)fluoranthene	0.0667	0.0753	0.0833	0.0833	ND	80	90	44 - 114	12	34	
Benzo[a]pyrene	0.0751	0.0826	0.0833	0.0833	ND	90	99	40 - 136	10	29	
Indeno(1,2,3-c,d)pyrene	0.0682	0.0769	0.0833	0.0833	ND	82	92	45 - 126	12	30	
Dibenz[a,h]anthracene	0.0692	0.0773	0.0833	0.0833	ND	83	93	46 - 121	11	28	
Surrogate:											
2-Fluorobiphenyl						<i>79</i>	91	32 - 114			
Pyrene-d10						80	86	33 - 121			
Terphenyl-d14						66	74	31 - 116			

# % MOISTURE

Date Analyzed: 3-3-15

Client ID	Lab ID	% Moisture
B7-PIPING-B1-5.0	02-262-01	28
B7-PIPING-B2-5.0	02-262-02	15
B7-PIPING-B3-4.5	02-262-03	9
B7-PIPING-B4-4.5	02-262-04	17
B7-PIPING-S1-4.0	02-262-05	40
B7-PIPING-S2-4.0	02-262-06	17
B7-PIPING-S3-3.5	02-262-07	12
B7-PIPING-S4-3.5	02-262-08	9



# **Data Qualifiers and Abbreviations**

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.
- Y The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Z1 The sample chromatogram is similar to mineral spirits with diesel.
- Z2 -The sample chromatogram is similar to mineral spirits.



# **Chain of Custody**

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Data Package: Standard | Level III | Level IV |

Electronic Data Deliverables (EDDs) 🗆 \_



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

March 24, 2015

Tasya Gray AMEC Environment and Infrastructure, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Re: Analytical Data for Project 14697

Laboratory Reference No. 1503-144

# Dear Tasya:

Enclosed are the analytical results and associated quality control data for samples submitted on March 16, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

**Enclosures** 

Date of Report: March 24, 2015 Samples Submitted: March 16, 2015 Laboratory Reference: 1503-144

Project: 14697

### **Case Narrative**

Samples were collected on March 13, 2015 and received by the laboratory on March 16, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

# **NWTPH Gx/BTEX Analysis**

Per EPA method 5035A, samples were received by the laboratory in pre-weighed 40 ml VOA vials preserved with either Methanol or Sodium Bisulfate.

The chromatograms for samples B7-piping-B5-5.0 and B7-piping-S1B-4.0 are similar to mineral spirits with diesel.

# cPAHs EPA 8270D/SIM Analysis

The method blank and a matrix spike had one surrogate recovery out of control limits. This is within allowance of our standard operating procedure as long as the recovery is above 10%.

Please note that any other QA/QC issues associated with these extractions and analyses will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Project: 14697

#### **NWTPH-Gx/BTEX**

Matrix: Soil

Units: mg/kg (ppm)

5 5 d 1 7				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	B7-piping-B5-5.0					
Laboratory ID:	03-144-01					
Benzene	0.13	0.023	EPA 8021B	3-16-15	3-18-15	
Toluene	ND	0.12	EPA 8021B	3-16-15	3-18-15	
Ethyl Benzene	0.27	0.12	EPA 8021B	3-16-15	3-18-15	
m,p-Xylene	1.4	0.12	EPA 8021B	3-16-15	3-18-15	
o-Xylene	ND	0.12	EPA 8021B	3-16-15	3-18-15	
Gasoline	1100	120	NWTPH-Gx	3-16-15	3-17-15	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	99	68-123				
Client ID:	B7-piping-S1B-4.0					
Laboratory ID:	03-144-02					
Benzene	0.27	0.047	EPA 8021B	3-16-15	3-17-15	
Toluene	ND	0.23	EPA 8021B	3-16-15	3-17-15	
Ethyl Benzene	0.69	0.23	EPA 8021B	3-16-15	3-17-15	
m,p-Xylene	3.6	0.23	EPA 8021B	3-16-15	3-17-15	
o-Xylene	ND	1.2	EPA 8021B	3-16-15	3-17-15	U1
Gasoline	3900	470	NWTPH-Gx	3-16-15	3-20-15	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	106	68-123				

Fluorobenzene 106 68-123

Project: 14697

## NWTPH-Gx/BTEX QUALITY CONTROL

Matrix: Soil

Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0316S1					
Benzene	ND	0.020	EPA 8021B	3-16-15	3-16-15	
Toluene	ND	0.050	EPA 8021B	3-16-15	3-16-15	
Ethyl Benzene	ND	0.050	EPA 8021B	3-16-15	3-16-15	
m,p-Xylene	ND	0.050	EPA 8021B	3-16-15	3-16-15	
o-Xylene	ND	0.050	EPA 8021B	3-16-15	3-16-15	
Gasoline	ND	5.0	NWTPH-Gx	3-16-15	3-16-15	

Surrogate: Percent Recovery Control Limits Fluorobenzene 89 68-123

					Source	Pe	rcent	Recovery		RPD	
Analyte	Res	sult	Spike	Level	Result	Rec	overy	Limits	RPD	Limit	Flags
DUPLICATE											
Laboratory ID:	03-15	51-01									
	ORIG	DUP									
Benzene	ND	ND	NA	NA			NA	NA	NA	30	
Toluene	ND	ND	NA	NA			NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA			NA	NA	NA	30	
m,p-Xylene	ND	ND	NA	NA			NA	NA	NA	30	
o-Xylene	ND	ND	NA	NA			NA	NA	NA	30	
Gasoline	ND	ND	NA	NA			NA	NA	NA	30	
Surrogate:											
Fluorobenzene						98	99	68-123			
SPIKE BLANKS											
Laboratory ID:	SB03	16S1									
	SB	SBD	SB	SBD		SB	SBD				
Benzene	0.889	0.920	1.00	1.00		89	92	75-117	3	13	
Toluene	0.920	0.936	1.00	1.00		92	94	78-118	2	12	
Ethyl Benzene	0.915	0.928	1.00	1.00		92	93	78-118	1	12	
m,p-Xylene	0.941	0.939	1.00	1.00		94	94	78-121	0	13	
o-Xylene	0.923	0.925	1.00	1.00		92	93	77-119	0	13	
Surrogate:											
Fluorobenzene						87	91	68-123			

Project: 14697

#### NWTPH-Dx

Matrix: Soil

o-Terphenyl

Units: mg/Kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	B7-piping-B5-5.0					
Laboratory ID:	03-144-01					
Diesel Fuel #2	7800	160	NWTPH-Dx	3-17-15	3-19-15	
Lube Oil Range Organics	ND	970	NWTPH-Dx	3-17-15	3-19-15	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	87	50-150				
Client ID:	B7-piping-S1B-4.0					
Laboratory ID:	03-144-02					
Diesel Fuel #2	11000	140	NWTPH-Dx	3-17-15	3-19-15	
Lube Oil Range Organics	ND	1300	NWTPH-Dx	3-17-15	3-19-15	U1
Surrogate:	Percent Recovery	Control Limits				

50-150

92

Project: 14697

#### **NWTPH-Dx QUALITY CONTROL**

Matrix: Soil

Units: mg/Kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0317S2					
Diesel Range Organics	ND	25	NWTPH-Dx	3-17-15	3-17-15	
Lube Oil Range Organics	ND	50	NWTPH-Dx	3-17-15	3-17-15	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	94	50-150				

					Source	Percent	Recovery		RPD	
Analyte	Res	sult	Spike	Level	Result	Recovery	Limits	RPD	Limit	Flags
DUPLICATE										
Laboratory ID:	03-1	15-01								
	ORIG	DUP								
Diesel Range	ND	ND	NA	NA		NA	NA	NA	NA	
Lube Oil Range	ND	ND	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						92 86	50-150			

Project: 14697

#### TOTAL METALS EPA 6010C/7471B

Matrix: Soil

Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	EPA Method	Prepared	Analyzed	Flags
Lab ID: Client ID:	03-144-01 <b>B7-piping-B5-5.0</b>					
Arsenic	ND	13	6010C	3-17-17	3-17-15	
Barium	49	3.2	6010C	3-17-17	3-17-15	
Cadmium	ND	0.65	6010C	3-17-17	3-17-15	
Chromium	8.4	0.65	6010C	3-17-17	3-17-15	
Lead	ND	6.5	6010C	3-17-17	3-17-15	
Mercury	ND	0.32	7471B	3-17-17	3-17-15	
Selenium	ND	13	6010C	3-17-17	3-17-15	
Silver	ND	1.3	6010C	3-17-17	3-17-15	
Lab ID:	03-144-02					
Oli a set ID	D7					

Lab ID: Client ID:	03-144-02 <b>B7-piping-S1B-4.0</b>					
Arsenic	ND	11	6010C	3-17-17	3-17-15	
Barium	33	2.7	6010C	3-17-17	3-17-15	
Cadmium	ND	0.54	6010C	3-17-17	3-17-15	
Chromium	9.5	0.54	6010C	3-17-17	3-17-15	
Lead	ND	5.4	6010C	3-17-17	3-17-15	
Mercury	ND	0.27	7471B	3-17-17	3-17-15	
Selenium	ND	11	6010C	3-17-17	3-17-15	
Silver	ND	1.1	6010C	3-17-17	3-17-15	

Project: 14697

#### TOTAL METALS EPA 6010C/7471B METHOD BLANK QUALITY CONTROL

Date Extracted: 3-17-17
Date Analyzed: 3-17-15

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: MB0317SM1&MB0317S1

Analyte	Method	Result	PQL
Arsenic	6010C	ND	10
Barium	6010C	ND	2.5
Cadmium	6010C	ND	0.50
Chromium	6010C	ND	0.50
Lead	6010C	ND	5.0
Mercury	7471B	ND	0.25
Selenium	6010C	ND	10
Silver	6010C	ND	1.0

Project: 14697

# TOTAL METALS EPA 6010C/7471B DUPLICATE QUALITY CONTROL

Date Extracted: 3-17-17
Date Analyzed: 3-17-15

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: 03-144-02

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	ND	ND	NA	10	
Barium	30.6	30.7	0	2.5	
Cadmium	ND	ND	NA	0.50	
Chromium	8.80	8.45	4	0.50	
Lead	ND	ND	NA	5.0	
Mercury	ND	ND	NA	0.25	
Selenium	ND	ND	NA	10	
Silver	ND	ND	NA	1.0	

Project: 14697

#### TOTAL METALS EPA 6010C/7471B MS/MSD QUALITY CONTROL

Date Extracted: 3-17-17 Date Analyzed: 3-17-15

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: 03-144-02

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	98.3	98	96.6	97	2	
Barium	100	136	106	129	99	5	
Cadmium	50.0	49.1	98	47.7	95	3	
Chromium	100	108	99	105	96	3	
Lead	250	248	99	244	97	2	
Mercury	0.500	0.513	103	0.523	105	2	
Selenium	100	98.4	98	94.0	94	5	
Silver	25.0	25.0	100	24.4	98	2	

Project: 14697

#### cPAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	B7-piping-B5-5.0					
Laboratory ID:	03-144-01					
Benzo[a]anthracene	4.5	0.086	EPA 8270D/SIM	3-19-15	3-23-15	
Chrysene	3.6	0.086	EPA 8270D/SIM	3-19-15	3-23-15	
Benzo[b]fluoranthene	3.8	0.086	EPA 8270D/SIM	3-19-15	3-23-15	
Benzo(j,k)fluoranthene	1.5	0.086	EPA 8270D/SIM	3-19-15	3-23-15	
Benzo[a]pyrene	3.7	0.086	EPA 8270D/SIM	3-19-15	3-23-15	
Indeno(1,2,3-c,d)pyrene	1.3	0.086	EPA 8270D/SIM	3-19-15	3-23-15	
Dibenz[a,h]anthracene	0.42	0.086	EPA 8270D/SIM	3-19-15	3-23-15	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	97	32 - 114				
Pyrene-d10	92	33 - 121				
Terphenyl-d14	88	31 - 116				

Project: 14697

#### cPAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	B7-piping-S1B-4.0					
Laboratory ID:	03-144-02					
Benzo[a]anthracene	0.45	0.072	EPA 8270D/SIM	3-19-15	3-23-15	
Chrysene	0.30	0.072	EPA 8270D/SIM	3-19-15	3-23-15	
Benzo[b]fluoranthene	0.29	0.072	EPA 8270D/SIM	3-19-15	3-23-15	
Benzo(j,k)fluoranthene	0.16	0.072	EPA 8270D/SIM	3-19-15	3-23-15	
Benzo[a]pyrene	0.28	0.072	EPA 8270D/SIM	3-19-15	3-23-15	
Indeno(1,2,3-c,d)pyrene	0.095	0.072	EPA 8270D/SIM	3-19-15	3-23-15	
Dibenz[a,h]anthracene	ND	0.072	EPA 8270D/SIM	3-19-15	3-23-15	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	95	32 - 114				
Pyrene-d10	90	33 - 121				
Terphenyl-d14	87	31 - 116				

Project: 14697

# cPAHs EPA 8270D/SIM METHOD BLANK QUALITY CONTROL

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Laboratory ID:	MB0319S1					
Benzo[a]anthracene	ND	0.0067	EPA 8270D/SIM	3-19-15	3-20-15	
Chrysene	ND	0.0067	EPA 8270D/SIM	3-19-15	3-20-15	
Benzo[b]fluoranthene	ND	0.0067	EPA 8270D/SIM	3-19-15	3-20-15	
Benzo(j,k)fluoranthene	ND	0.0067	EPA 8270D/SIM	3-19-15	3-20-15	
Benzo[a]pyrene	ND	0.0067	EPA 8270D/SIM	3-19-15	3-20-15	
Indeno(1,2,3-c,d)pyrene	ND	0.0067	EPA 8270D/SIM	3-19-15	3-20-15	
Dibenz[a,h]anthracene	ND	0.0067	EPA 8270D/SIM	3-19-15	3-20-15	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	115	32 - 114				Q
Pyrene-d10	84	33 - 121				
Terphenyl-d14	81	31 - 116				

Project: 14697

# cPAHs EPA 8270D/SIM MS/MSD QUALITY CONTROL

Matrix: Soil Units: mg/Kg

					Source	Per	cent	Recovery		RPD	
Analyte	Res	sult	Spike	Level	Result	Rec	overy	Limits	RPD	Limit	Flags
MATRIX SPIKES											
Laboratory ID:	03-10	07-01									
	MS	MSD	MS	MSD		MS	MSD				
Benzo[a]anthracene	0.0826	0.0682	0.0833	0.0833	ND	99	82	42 - 134	19	27	
Chrysene	0.0694	0.0589	0.0833	0.0833	ND	83	71	45 - 114	16	27	
Benzo[b]fluoranthene	0.0726	0.0624	0.0833	0.0833	ND	87	75	38 - 131	15	33	
Benzo(j,k)fluoranthene	0.0703	0.0616	0.0833	0.0833	ND	84	74	44 - 114	13	34	
Benzo[a]pyrene	0.0808	0.0665	0.0833	0.0833	ND	97	80	40 - 136	19	29	
Indeno(1,2,3-c,d)pyrene	0.0710	0.0591	0.0833	0.0833	ND	85	71	45 - 126	18	30	
Dibenz[a,h]anthracene	0.0713	0.0594	0.0833	0.0833	ND	86	71	46 - 121	18	28	
Surrogate:											
2-Fluorobiphenyl						120	91	32 - 114			Q
Pyrene-d10						82	69	33 - 121			
Terphenyl-d14						<i>78</i>	66	31 - 116			

#### % MOISTURE

Date Analyzed: 3-17-15

Client ID	Lab ID	% Moisture
B7-piping-B5-5.0	03-144-01	23
B7-piping-S1B-4.0	03-144-02	8



#### **Data Qualifiers and Abbreviations**

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.
- Y The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Z The sample chromatograms are similar to mineral spirits with diesel.

ND - Not Detected at PQL

PQL - Practical Quantitation Limit

RPD - Relative Percent Difference

Reviewed/Date	Received	Relinquished	Received	Relinquished	Received	Relinquished						2 B7-pi	1 87- PI	Lab ID	Sampled by:	Floject Manager.	Project Marie:	٦	Project Number:	Company:	Analytica 14648 I	Env Env
		1			A	MAKING	Signature			Kg.	9	piping - 518 - 4.0	piping - 85-5,0	enti	+	Gray Control of the C		Moore Soil Ex		Phone: (425) 883-3881 • www.onsite-env.com	Analytical Laboratory Testing Services 14648 NE 95th Street • Redmond, WA 98052	OnSite Environmental Inc
Reviewed/Date			n Dorita	1-01-25 25	Churs)	AMEC	Company					J 0755 J	4	Date Time Sampled Sampled Matrix	(other)	]	Standard (7 Days) (TPH analysis 5 Days)	2 Days 3 Days	Same Day 1 Day	(Check One)	Turnaround Request (in working days)	Chain o
			121/ Sym/6 12	3/19/13 1/20	2116/12 123	2 2012	Date , Time					× ×	× ×	Numbe NWTPH NWTPH NWTPH Volatiles Haloger Semivol	I-HCID I-Gx/BT I-Gx I-Dx I-Dx I-Dx I-Dx I-atiles 8	Colatiles	s 8260C				Laboratory Number:	Chain of Custody
Chromatograms with final report							Comments/Special Instructions					×	×	(with low PAHs 82 PCBs 80 Organoc Organop Chlorina Total RC	270D/S 082A chlorine chospho ated Aci	Pesti Prus Pe id Heri	w-level) cides 80	081B 8270D/	SIM			
												×	×	TCLP M HEM (oi	letals		1664A				03-144	Page of



### APPENDIX I

Soil Disposal Tickets

(SITE 3A Roosevelt Landfill TICKET # 328979 241041 500 Roosevelt Grade Rd WEIGHMASTER Janice F. Roosevelt Wa. 99356 USTOMER 010385 DATE/TIME IN 02-28-2015 11:40 am DATE/TIME OUT 02-28-2015 12:01 pm Rhine Demolition CONTAINER TOLU456780 1124-112th St. E. Tacoma, WA 98445 REFERENCE INVOICE TB-12157 BILL OF LADING BNSF231172 02/26/2015 0 SCALE IN GROSS WEIGHT 116,720 NET TONS 34.13 SCALE OUT TARE WEIGHT 48,460 NET WEIGHT 68,260 INBOUND QTY. UNIT DESCRIPTION RATE **EXTENSION** TAX TOTAL 28.00 TRACKING QTY YD 34.13 TN Contaminated Debris Seattle 1.00 CONTAINER/CHASIS RENTAL **NET AMOUNT** TENDERED The undersigned individual signing this document on behalf of Customer acknowledges that he or she has read and understands the terms and conditions CHANGE on the reverse side and that he or she has the authority to sign this document on behalf of the customer. CHECK# RS-F042UPR (07/12)

SIGNATURE

TICKET # 329052 TE Coosevelt Landfill SITE 3A **CELL** 240893 500 Roosevelt Grade Rd WEIGHMASTER Gail H. Roosevelt Wa. 99356 USTOMER 010385 03-02-2015 12:29 pm DATE/TIME OUT 03-2-2015 12:57 pm Rhine Demolition LLC **VEHICLE** 1124-112th St. E. Tacoma, WA 98445 REFERENCE INVOICE TB-12157 BILL OF LADING 02/27/2015 BNSF231136 0 SCALE IN GROSS WEIGHT 107,200 NET TONS 29.55 SCALE OUT TARE WEIGHT 48,100 NET WEIGHT 59,100 INBOUND QTY. UNIT DESCRIPTION RATE EXTENSION TAX TOTAL 28.00 TRACKING QTY YD 29.55 TNContaminated Debris Seattle 1.00 CONTAINER/CHASIS RENTAL **NET AMOUNT TENDERED** The undersigned individual signing this document on behalf of Customer acknowledges that he or she has read and understands the terms and conditions CHANGE on the reverse side and that he or she has the authority to sign this document on behalf of the customer. CHECK# RS-F042UPR (07/12) SIGNATURE \_

Roosevelt Landfill TICKET # 329053 SITE 3A 240887 500 Roosevelt Grade Rd WEIGHMASTER Roosevelt Wa. 99356 Gail H. USTOMER 010385 DATE/TIME IN 03-02-2015 12:35 pm **DATE/TIME OUT** 03-2-2015 1:01 pm Rhine Demolition LLC VEHICLE 1124-112th St. E. Tacoma, WA 98445 REFERENCE INVOICE TB-12157 BILL OF LADING 02/27/2015 BNSF231136 0 SCALE IN GROSS WEIGHT 103,500 NET TONS 28.87 SCALE OUT TARE WEIGHT 45,760 NET WEIGHT 57,740 INBOUND QTY. UNIT DESCRIPTION RATE EXTENSION TAX TOTAL TRACKING QTY 28.00 YD 28.87 TN Contaminated Debris Seattle 1.00 CONTAINER/CHASIS RENTAL **NET AMOUNT** TENDERED The undersigned individual signing this document on behalf of Customer acknowledges that he or she has read and understands the terms and conditions CHANGE on the reverse side and that he or she has the authority to sign this document on behalf of the customer. CHECK# RS-F042UPR (07/12) SIGNATURE\_

Toosevelt Landfill TICKET # 329055 SITE 3A **CELL** 240890 500 Roosevelt Grade Rd WEIGHMASTER Gail H. Roosevelt Wa, 99356 USTOMER 010385 DATE/TIME IN 03-02-2015 12:24 pm **DATE/TIME OUT** 03-2-2015 1:02 pm Rhine Demolition LLC CONTAINER RBSU200402 1124-112th St. E. Tacoma, WA 98445 REFERENCE INVOICE TB-12157 BILL OF LADING BNSF231136 02/27/2015 0 SCALE IN GROSS WEIGHT 89,700 NET TONS 21.72 SCALE OUT TARE WEIGHT 46,260 NET WEIGHT 43,440 INBOUND QTY. UNIT DESCRIPTION RATE **EXTENSION** TAX TOTAL TRACKING QTY 28.00 YD 21.72 TN Contaminated Debris Seattle 1.00 CONTAINER/CHASIS RENTAL **NET AMOUNT TENDERED** The undersigned individual signing this document on behalf of Customer acknowledges that he or she has read and understands the terms and conditions CHANGE on the reverse side and that he or she has the authority to sign this document on behalf of the customer. CHECK# RS-F042UPR (07/12) SIGNATURE\_

Roosevelt Landfill SITE TICKET # CELL 3A 329056 241035 500 Roosevelt Grade Rd WEIGHMASTER Roosevelt Wa, 99356 USTOMER Gail H. DATE/TIME IN DATE/TIME OUT 010385 03-02-2015 12:23 pm 03-2-2015 1:03 pm Rhine Demolition LLC VEHICLE 0332 CONTAINER TOLU460811 1124-112th St. E. REFERENCE Tacoma, WA 98445 INVOICE TB-12157 BILL OF LADING BNSF231136 02/27/2015 SCALE IN GROSS WEIGHT 108,200 NET TONS 30.41 SCALE OUT TARE WEIGHT 47,380 NET WEIGHT 60,820 INBOUND QTY. UNIT DESCRIPTION RATE **EXTENSION** TAX TOTAL 28.00 YD TRACKING QTY 30.41 TNContaminated Debris Seattle 1.00 CONTAINER/CHASIS RENTAL **NET AMOUNT TENDERED** The undersigned individual signing this document on behalf of Customer acknowledges that he or she has read and understands the terms and conditions CHANGE on the reverse side and that he or she has the authority to sign this document on behalf of the customer. CHECK#

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RS-F042UPR (07/12)

Roosevelt Landfill TICKET # 329058 CELL 240891 500 Roosevelt Grade Rd WEIGHMASTER Gail H. Roosevelt Wa. 99356 USTOMER 010385 DATE/TIME IN 03-02-2015 12:48 pm **DATE/TIME OUT** 03-2-2015 1:11 pm Rhine Demolition LLC RBS0200385 1124-112th St. E. Tacoma, WA 98445 REFERENCE INVOICE TB-12157 BILL OF LADING BNSF231056 02/27/2015 0 SCALE IN GROSS WEIGHT 93,540 NET TONS 23.57 SCALE OUT TARE WEIGHT 46,400 NET WEIGHT 47,140 INBOUND QTY. UNIT DESCRIPTION RATE **EXTENSION** TAX TOTAL 28.00 YD TRACKING QTY 23.57 Contaminated Debris TN Seattle 1.00 CONTAINER/CHASIS RENTAL **NET AMOUNT** TENDERED The undersigned individual signing this document on behalf of Customer acknowledges that he or she has read and understands the terms and conditions CHANGE on the reverse side and that he or she has the authority to sign this document on behalf of the customer. CHECK# RS-F042UPR (07/12) SIGNATURE.

Roosevelt Landfill TICKET # 329415 SITE 3A CELL 240894 500 Roosevelt Grade Rd WEIGHMASTER Roosevelt Wa, 99356 Janice F. USTOMER DATE/TIME IN DATE/TIME OUT 010385 03-07-2015 6:42 am 03-7-2015 7:05 am Rhine Demolition LLC VEHICLE CONTAINER 1124-112th St. E. 6181 RBSU200368 Tacoma, WA 98445 REFERENCE INVOICE TB-12157 BINSOF 2-ADING 78 03/05/2015 SCALE IN GROSS WEIGHT 92,300 NET TONS 23.08 SCALE OUT TARE WEIGHT 46,140 NET WEIGHT 46,160 INBOUND QTY. UNIT DESCRIPTION RATE EXTENSION TAX TOTAL 28.00 TRACKING QTY YD 23.08 TN Contaminated Debris Seattle 1.00 CONTAINER/CHASIS RENTAL **NET AMOUNT TENDERED** The undersigned individual signing this document on behalf of Customer acknowledges that he or she has read and understands the terms and conditions CHANGE on the reverse side and that he or she has the authority to sign this document on behalf of the customer. CHECK# RS-F042UPR (07/12) SIGNATURE \_

00 Roosevelt Grade Rd oosevelt Wa, 99356		SITE TICI	KET #330047	251	1001	
TOMER 010385 Rhine Demolition LLC 1124-112th St. E.		Gail H.  DATE/TIME IN 03-16-2  VEHICLE 3450	•		TIME OUT 16-2015 CAINER U425933	7:56 am
Tacoma, WA 98445 TB-12157		BASF 2401	<b>VG</b> 13	03/13/201		VOICE
SCALE IN GROSS WEIGHT SCALE OUT TARE WEIGHT	111,380 48,540	NET TONS NET WEIGHT	31.42 62,840		INBOUND	
28.00 YD TRACKING QTY  31.42 TN Contaminated Debris CONTAINER/CHASIS RENTAL	Seattle		RATE	EXTENSION	TAX	TOTAL

Toosevelt Landfill TICKET #330083 SITE CEL 1000 500 Roosevelt Grade Rd WEIGHMASTER Ball H. Roosevelt Wa, 99356 USTOMER 010385 PASE\_TIME\_12015 BAJE/118E-02015 2:04 pm 2:23 pm Rhine Demolition LLC VEHICLE FONTO 458 607 1124-112th St. E. Tacoma, WA 98445 REFERENCE INVOICE TB-12157 BNSF230038 03/13/2015 0 SCALE IN GROSS WEIGHT 108,080 NET TONS 30.04 SCALE OUT TARE WEIGHT 48,000 NET WEIGHT 60,080 INBOUND QTY. UNIT DESCRIPTION RATE **EXTENSION** TAX TOTAL 28.00 YD TRACKING QTY 30.04 TN Contaminated Debris Seattle 1.00 CONTAINER/CHASIS RENTAL **NET AMOUNT** TENDERED The undersigned individual signing this document on behalf of Customer acknowledges that he or she has read and understands the terms and conditions CHANGE on the reverse side and that he or she has the authority to sign this document on behalf of the customer. CHECK# RS-F042UPR (07/12) SIGNATURE

Roosevelt Landfill TICKET #30084 **24**1941 500 Roosevelt Grade Rd Roosevelt Wa, 99356 WEIGHMASTER Gail H. **JSTOMER** 010385 DATE/TIME IN 03-16-2015 03-16-2015 2:02 pm 2:24 pm Rhine Demolition LLC 1124-112th St. E. Tacoma, WA 98445 REFERENCE INVOICE TB-12157 BINSOF 2 ACONG 18 03/13/2015 GROSS WEIGHT SCALE IN 102,960 NET TONS 27.91 SCALE OUT TARE WEIGHT 47,140 55,820 NET WEIGHT INBOUND 28.00 UNIT DESCRIPTION RATE EXTENSION TAX TOTAL TRACKING OTY YD 27.91 TN Contaminated Debris Seattle 1.00 CONTAINER/CHASIS RENTAL **NET AMOUNT TENDERED** The undersigned individual signing this document on behalf of Customer acknowledges that he or she has read and understands the terms and conditions CHANGE on the reverse side and that he or she has the authority to sign this document on behalf of the customer. CHECK# RS-F042UPR (07/12) SIGNATURE \_

<del>Posevelt Landfill</del> 000 Roosevelt Grade Rd Roosevelt Wa, 99356		SITE A WEIGHM	TICKET #30085	24	0958	
STOMER 010385		Gail	H.	DAT	E/TIME OUT	
Rhine Demolition LLC 1124-112th St. E.		VEHICLE 8648			=16-2015 T4420670	2:54 pm
Tacoma, WA 98445		REFERE				VOICE
TB-12157		BINIST 2	2.801NG71	03/13/201	5	1
MANUAL IN GROSS WEIGHT SCALE OUT TARE WEIGHT	113,400 46,340	NET TONS NET WEIGHT	33.53 67,060		INBOUND	
33.53 TN Contaminated Debris	ESCRIPTION		RATE	EXTENSION	TAX	TOTAL
33.53 TN Contaminated Debris	Seattle		1		1	l .
1.00 CONTAINER/CHASIS RENTA	L					
	Of Customer acknowledges	that he or she has read of the customer.	and understands the t	erms and conditions		NET AMOUNT TENDERED CHANGE



### **APPENDIX J**

Site Assessment Checklist

DEPARTMENT OF ECOLOGY State of Washington

### SITE CHECK/SITE ASSESSMENT CHECKLIST

UST ID #:	
County:	

FOR UNDERGROUND STORAGE TANKS

This checklist certifies that site check or site assessment activities were performed in accordance with Chapter 173-360 WAC. Instructions are found on the last page.

I. UST FACILITY	II. OWNER/OPERATOR INFORMATION
Facility Compliance Tag #: $\nu/A$	Owner/Operator Name: Dan Jenhins
UST ID #: N/A	Business Name: NCD Georgetown, LLC
Site Name: New Core Development LLC	Address: 11112 Rainier Ave S.
Site Address: 5400 Airport Way S.	City: Seattle State: WA Zip: 98178
City: Scattle, WA	Phone: 206-679-8568
Phone:	Email: dan @ Newcore development. com
III. CERTIFIED	SITE ASSESSOR
Service Provider Name: Wathan Moxley	Company Name: Amec Foster Wheeler
Cell Phone: Email: Nathan. Moxley @ amec fu. com	Address: 600 University St., Suite 600
Certification #: 819 8685 Exp. Date: 3/15/15	City: Seattle State: WA Zip: 98/01
IV. TANK IN	IFORMATION
TANK ID TANK CAPACITY	LAST SUBSTANCE STORED  DATE SITE CHECK OR ASSESSMENT CONDUCTED
N/A ~ 500 gal.	unhnown 3/11/2015
V. REASON FOR CONDUCTING SITE	CHECK/SITE ASSESSMENT (check one)
Release investigation following permanent UST system	closure (i.e. tank removal or closure-in-place).
☐ Release investigation following a failed tank and/or line	e tightness test.
☐ Release investigation following discovery of contamina	ted soil and/or groundwater.
Release investigation directed by Ecology to determine	if the UST system is the source of offsite impacts.
UST system is undergoing a "change-in-service", which gasoline) to storing a non-regulated substance (e.g. wa	· · · · · · · · · · · · · · · · · · ·
☐ Directed by Ecology for UST system permanently closed	d or abandoned before 12/22/1988.
☐ Other (describe):	

	VI. CHECKLIST	
	The site assessor must check each of the following items and include it in the report.  Sections referenced below can be found in the Ecology publication  Guidance for Site Checks and Site Assessments for Underground Storage Tanks.	
4		YES NO
1.	The location of the UST site is shown on a vicinity map.	X D
2.	A brief summary of information obtained during the site inspection is provided (Section 3.2)	
3.	A summary of UST system data is provided (Section 3.1)	
4.	The soils characteristics at the UST site are described. (Section 5.2)	X 0
5.	Is there any apparent groundwater in the tank excavation?	口区
6.	A brief description of the surrounding land use is provided. (Section 3.1)	X 0
7.	The name and address of the laboratory used to perform analyses is provided. The methods used to collect and analyze the samples, including the number and types of samples collected, are also documented in the report. The data from the laboratory is appended to the report.	M o
8.	The following items are provided in one or more sketches:	
	Location and ID number for all field samples collected	X 0
	• If applicable, groundwater samples are distinguished from soil samples w/A	
	Location of samples collected from stockpiled excavated soil  NA	
	Tank and piping locations and limits of excavation pit	X o
	Adjacent structures and streets	凶口
	Approximate locations of any on-site and nearby utilities      W/A	
9.	If sampling procedures are different from those specified in the guidance, has justification for using these alternative sampling procedures been provided? (Section 3.4)	
10.	A table is provided showing laboratory results for each sample collected including; sample ID number, constituents analyzed for and corresponding concentration, analytical method, and detection limit for that method. Any sample exceeding MTCA Method A cleanup standards are highlighted or bolded.	
11.	Any factors that may have compromised the quality of the data or validity of the results are described.	
12.	The results of this site check/site assessment indicate that a confirmed release of a regulated substance has occurred. The requirements for reporting confirmed releases can be found in WAC 173-360-372.	
	VII. REQUIRED SIGNATURES	
	Signature acknowledges the Site Check or Site Assessment complies with UST regulations WAC 173-360-360 through	395.
	Nathan Moxley Matte May 3/1	1/-
Prin	t or Type Name Signature of Certified Site Assessor Date	7/3