

Engineering + Environmental Est. 1982

# Monitoring Well Installation and Groundwater Monitoring Report

3740 Shelton Springs Road Shelton, Washington

Prepared for: Mason County Transportation Cooperative Attn: Sandi Thompson 700 South First Street Shelton, Washington 98584

October 2014 Project No. 41271.002

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#### 1.0 INTRODUCTION

PBS Engineering and Environmental Inc. (PBS) completed the installation of additional monitoring wells and collection of groundwater samples at the Mason County Transportation Cooperative facility located at 3740 Shelton Springs Road in Shelton, Washington (site or subject property). The work was completed at the request of Sandi Thompson with Mason County Transportation Cooperative. This investigation was conducted to further characterize groundwater quality in conjunction with ongoing monitoring of the 1994 underground storage tank (UST) release at the project site.

The additional monitoring wells were installed as requested by Ecology in their letter dated May 26, 2010 and for comparison to Washington State Department of Ecology (Ecology) cleanup regulations (Chapter 173-340 WAC). The property is currently enrolled in Ecology's Voluntary Cleanup Program (VCP) and has been assigned VCP#: SW0579.

#### 1.1 Site Description and Usage

The subject property is the site of Mason County Transportation Cooperative, located at 3740 Shelton Springs Road, Shelton, Washington 98584-9105 in Mason County (Township 20 North, Range 4, Section 12). The triangular-shaped land is identified as Parcel Number 420124160000.

The site building includes bus maintenance bays, wash bays and personal offices. A fueling area is located on the south side of the building and includes a pump island and associated USTs. Buses are parked around the building to the north and west.

#### 1.2 Site Ownership

The property is currently owned by Mason County Transportation.

#### 2.0 BACKGROUND

The property was purchased as a vacant lot by the school district in 1984. Shortly after purchase, the school bus maintenance building and fueling facility were built. In 1994, the USTs were upgraded to conform to EPA standards. During the upgrade, a leaking pipe and contaminated soil were encountered during excavation. Mason County then initiated remedial actions to fulfill Ecology's Model Toxics Control Act (MTCA) requirements to obtain a determination of "no further action" (NFA) for the site.

Mason County removed approximately 600 cubic yards of soil from the excavation and aerated the soil material on-site in 1995. New double-walled fiberglass tanks were installed. Some impacted soils were left in place due to inaccessibility due to site structures. Two groundwater monitoring wells were installed adjacent to the UST system.

As required by Ecology, in June 2007, a total of five borings were drilled with two of the borings completed as groundwater monitoring wells. Subsurface soil samples were collected from the borings, just above the saturated groundwater zone. Analytical results indicated no detections of gasoline-range hydrocarbons in the six soil samples; only one location had any hydrocarbon detection (a heavy oil-range at low concentrations). All subsurface soil concentrations of petroleum hydrocarbons and/or constituents were below the applicable MTCA Method A or Method B levels.

In addition, all four existing on-site monitoring wells developed and sampled. Analytical results indicated no impacts to groundwater from petroleum hydrocarbon related constituents above the



laboratory MRLs. Based on the dataset, PBS recommended no further environmental investigation was necessary and that Ecology should issue a determination of NFA. However, Ecology requested additional site characterization data, which was communicated in their May 22, 2009 letter to Mason County.

The October 2009 environmental media monitoring event was then performed specifically to address Ecology's May 22, 2009 request for additional site soils and groundwater data. Soil and groundwater samples from across the site were analyzed for gasoline-range hydrocarbons. Sample analysis indicated no contaminants of concern were above the laboratory method reporting limit (MRL).

Based on the October 2009 additional soil and groundwater data, PBS recommended that Mason County submit this report to Ecology and request NFA determination for the site. However, the placement of additional monitoring wells and quarterly groundwater sampling was requested by Ecology in a letter dated May 26, 2010 in order to further characterize groundwater quality.

#### 3.0 REGIONAL GEOLOGY AND HYDROGEOLOGY

According to the Geologic Map of Washington – Southwest Quadrant (Washington Division of Geology and Earth Resources, 1987), 1:250,000 scale, the site is underlain by Quaternary aged undifferentiated outwash deposits such as recessional and pro glacial stratified sand and gravel.

Site topography is a gentle slope to the south. The nearest surface water body is Shelton Creek, approximately 0.25 miles to the east which flows to the south. The first occurrence of unconfined groundwater at the site has been observed at a depth of approximately 12 feet below ground surface (bgs).

Based on the previous water level data from the subject site, the groundwater flow has consistently been from the north to the south-southwest direction. Groundwater depths below ground surface (bgs) have ranged from an average of 10.57 feet bgs to 14.42 feet bgs between the sampling periods. This indicates that groundwater depth in the wells have fluctuated approximately 3.8 feet based on the seasonal sampling period. The variation in depth to groundwater has not affected the general groundwater flow direction to the southwest. The groundwater gradient has ranged from 0.003 to 0.004 feet/feet. The gradient is calculated by dividing the highest and lowest recorded water levels by the distance between those respective monitoring well (MW-3 and MW-4) locations.

Area domestic water supply wells are generally 60 to 100 feet deep, according to the recorded well logs on the Ecology web site. Most are screened within the Vashon advance or recessional outwash deposits. Based on the boring logs, most of the supply wells appear to be screened in the advance outwash, below the low permeability till material. The nearest municipal water well appears to be a City supply well, located to the east/southeast approximately 0.3 miles. The total depth of the well is 708 feet bgs and the shallowest screened interval in this well is 205 to 278 feet bgs as listed in a City of Shelton Water System Plan, dated 1985.

## 4.0 DRILLING INVESTIGATION

Prior to beginning the drilling investigation, PBS filed a public utility notification request. On September 4, 2014, PBS supervised a private utility locates company (Applied Professional Services, Inc. of North Bend, Washington) while they conducted borehole clearance for subsurface obstructions and utilities. The advancement of boreholes was conducted the same day, with the assistance of Holocene Drilling of Puyallup, WA. A site-specific health and safety plan (HASP) was prepared and reviewed with all field personnel and subcontractors prior to beginning work.



#### 4.1 Soil Borings

The investigation consisted of the advancement of two soil borings which were completed as groundwater monitoring wells (MW5 and MW6). MW5 was advanced downgradient of the fueling station adjoining the drainage swale to characterize groundwater flow at the site. MW6 was advanced one foot west of previously installed MW1 which has been historically reported as dry and unable to be sampled. Borings were advanced using a hollow stem drill rig to approximately 20 and 25 feet bgs. Well construction details are presented in Attachment I - Well Construction Logs.

A typical subsurface profile encountered on site is presented in the table below:

Classification	Description	Approximate Depth Range (feet bgs)
Native soil	Loose, orange/brown gravelly sand, fine to medium grained	0 to 25
Groundwater	Groundwater	13 to 15

During the advancement of the borings, soil was screened for volatiles using a hand-held photoionization detector (PID). PID readings were also taken from select soil intervals by partially filling a sealable plastic bag and taking headspace readings within the bag. Soils from the borings were logged continuously, noting grain size, color, odor, and moisture. Boring logs describing the subsurface lithology, including sample depths and PID readings, are presented in Appendix I Soil Boring and Well Construction Logs.

Two soil samples from each boring were collected in laboratory-supplied containers, placed on ice in a cooler and transported to Fremont Analytical Laboratory in Seattle, Washington, with chain-of-custody documentation. Analyses were conducted under normal turnaround time including the following contaminants of concern.

- Gasoline range Total Petroleum Hydrocarbons (TPH) by method NWTPH-Gx
- Diesel range Total Petroleum Hydrocarbons (TPH) by method NWTPH-Dx
- Benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA Method 8260
- Polycyclic aromatic hydrocarbons (PAHs) (EPA Method 8270-SIM)

Sampling equipment was decontaminated between borings using a detergent wash and tap water rinse. PBS personnel wore new disposable nitrile gloves when collecting samples. Upon completion of sampling, temporary boreholes were backfilled and sealed with bentonite to six inches below grade, and the surface restored to match the surrounding area.

#### 5.0 GROUNDWATER MONITORING EVENT

The September 2014 Groundwater Monitoring Event (GME) was conducted on September 11, and included the sampling of five on site groundwater monitoring wells (MW2 through MW6). Well locations are presented in Figure 2 - Site Plan. Monitoring well information is summarized in the following Table 1:



Monitoring Well Identification	Installation Date	Screened Interval (feet bgs)	Well Depth (feet bgs)
*MW1 (not used)	1995	5-14	14.42
MW2	1995	5 – 15	14.72
MW3	2007	10 – 20	18.91
MW4	2007	10 – 20	19.24
MW5	2014	10 - 25	23.47
MW6	2014	9.6 – 19.6	19.22

Table 1: Summary of Monitoring Well Construction

\* Observation well that has been historically reported as dry and unable to be sampled

Prior to sampling the wells were gauged using an interface probe. Static water levels (SWLs) ranged from 13.21 feet below top of casing (fbTOC) in MW6 to 15.315 fbTOC in MW5.

Groundwater purging and sampling was conducted using a peristaltic pump, employing low flow sampling methodology with pumping rates not exceeding 0.25 liters/minute and creating minimal drawdown in the well. Groundwater field parameters (conductivity, pH, temperature, dissolved oxygen and oxidation-reduction potential) were recorded during purging using a YSI Model 556MSP water-quality analyzer equipped with a flow-through cell.

Once groundwater parameters stabilized, which indicates groundwater is representative of the aquifer formation and is not well column water, a sample was collected. PBS personnel wore new disposable nitrile gloves when collecting samples. Detailed groundwater sampling information is presented in Attachment II - Groundwater Sampling Forms.

All samples were collected in laboratory-supplied containers, placed on ice in a cooler and transported Fremont Analytical Laboratory in Seattle, Washington, within specified holding times and under chain-of-custody documentation. Analyses were conducted under a 5-day turnaround time and included the following:

- Gasoline range Total Petroleum Hydrocarbons (TPH) by method NWTPH-Gx
- Diesel range TPHs by method NWTPH-Dx
- Benzene, toluene, ethylbenzene and xylenes by EPA method 8021
- Polycyclic Aromatic Hydrocarbons (PAHs) by EPA Method 8270D SIM

#### 5.1 Groundwater Elevation and Flow Direction

On September 30, 2014 PBS met with licensed surveyors from CSI Surveying, who provided surveying services to determine the elevations of the top of the well casing. A copy of the surveyor's report is included in Attachment III. Monitoring well top of casing elevation, depth to groundwater and groundwater elevations are presented in the following Table 2:



Monitoring Well Identification	Sample Date	Top of casing (TOC) elevation (feet)	Depth to water	Groundwater elevation (feet)
MW2	9/30/2014	236.20	13.48	222.72
MW3	9/30/2014	236.21	13.48	222.73
MW4	9/30/2014	236.35	13.78	222.57
MW5	9/30/2014	237.87	15.32	222.55
MW6	9/30/2014	235.92	13.21	222.71

#### Table 2: Summary of Groundwater Elevation Measurements

Groundwater flow direction was determined graphically on a scaled site plan, using the tabulated groundwater elevations. Groundwater flow direction was determined to be southeast.

The hydraulic gradient was calculated to be 0.0025 feet/feet.

#### 6.0 FINDINGS

#### 6.1 Soil Analytical Results

The following contaminants of concern were identified above the laboratory method reporting limit (MRL) but below the adopted regulatory cleanup levels.

- Toluene in sample MW6\_12.5-14.0 at 0.0555 mg/kg
- Ethylbenzene in sample MW6\_12.5-14.0 at 0.0664 mg/kg
- Xylene in samples MW5\_15-16.5 at 0.120 mg/kg and MW6\_12.5-14.0 at 0.150 mg/kg

Soil analytical results are presented in Table 3. A copy of laboratory report is included in Attachment IV.

#### 6.2 Groundwater Analytical Results

No analyzed contaminant concentrations in groundwater were reported above the laboratory MRL or the adopted regulatory cleanup levels.

Groundwater analytical results are presented in Table 4. A copy of laboratory report is included in Attachment IV.

#### 6.3 Quality Control Samples

Quality control (QC) sampling conducted during the investigation is described below:

#### **Blind Duplicate**

One blind duplicate sample was submitted to the laboratory for analysis without notification to the laboratory which sample was duplicated. The duplicate groundwater sample (DUP\_6.9.2014) from MW1 was analyzed for BTEX. Results from both samples were below the respective laboratory MRLs.

#### Trip Blank

A trip blank sample (TB01\_6.9.2014) was shipped with groundwater samples collected during the investigation and analyzed for BTEX. Trip blanks results were below the laboratory MRLs.

## 7.0 APPLICABLE REGULATIONS AND CLEANUP STANDARDS

Contaminated site assessment and cleanup is conducted under the Model Toxic Control Act (MTCA, Chapter 70.105D Revised Code of Washington [RCW]). Chapter 173-340 of the Washington Administrative Code (WAC) provides a workable process for MTCA to accomplish effective and expeditious cleanups in a manner that protects human health and the environment. The MTCA Cleanup Regulation includes a two-step process for establishing site cleanup requirements: 1) setting cleanup standards and 2) selecting remedies.

Site assessment and cleanup (if applicable) has been and will continue to be performed under MTCA. This section summarizes the cleanup standards established for this site.

#### 7.1 Soil and Groundwater Cleanup Standards

In accordance with MTCA, development of preliminary cleanup levels includes identifying potential exposure pathways for human and ecological impacts based on the planned land use. MTCA provides for three methods (Method A, B or C) for establishing cleanup standards. Method A (unrestricted land use) is typically used as the default cleanup levels. Method B and C are used when developing site-specific cleanup levels.

Considering the property seeks regulatory closure in the form of an unrestricted "no further action" (NFA), MTCA level A cleanup levels are the most appropriate, and are the adopted criteria for the site. Method A cleanup levels for soil and groundwater are presented in the Analytical Results Tables along with the contaminant concentrations.

#### 7.2 Point of Compliance

The point of compliance is the point or points where the established cleanup levels shall be attained, as defined in WAC 173-340-720 and 173-340-740.

- For soil, the point of compliance shall be established in the soils throughout the site from the ground surface to 15 feet bgs. This represents a reasonable estimate of the depth of soil that could be excavated and distributed at the soil surface as a result of site development activities.
- For groundwater, the standard point of compliance shall be established throughout the site from the uppermost level of the saturated zone extending vertically to the lowest most depth which could potentially be affected by the site (173-340-720(8) WAC).

#### 8.0 CONCLUSIONS AND RECOMMENDATIONS

A summary of the pertinent findings of the Groundwater Well Installation and Groundwater Monitoring Event - September 2014 are presented below:

• Low level contaminants of concern were identified in the soil collected from the MW-5 and MW-6 boring installation. The gasoline detected constituents above the laboratory method reporting limit (MRL) but below the adopted regulatory cleanup



levels. The low levels detected in soil near the water table depth at these boring locations, indicate that gasoline compounds dissolved in the groundwater have migrated to these locations.

- There were no detected levels of contaminant concentrations in the five groundwater samples collected from the monitoring wells above the MRL.
- PBS recommends that the result of this groundwater sampling be submitted to the Washington Department of Ecology.
- PBS recommends that the next quarter-annual groundwater sampling event be schedule for December 2014. The regulatory objective is to complete four consecutive groundwater sampling events to document the groundwater quality and meet the MTCA requirements.

#### 9.0 LIMITATIONS

PBS has prepared this report for use by Mason County Transportation Cooperative. This report is for the exclusive use of the client and is not to be relied upon by other parties. It is not to be photographed, photocopied, or similarly reproduced, in total or in part, without the expressed written consent of the client and PBS.

This study was limited to the tests, locations, and depths as indicated to determine the absence or presence of certain contaminants. The site as a whole may have other contamination that was not characterized by this study. The findings and conclusions of this report are not scientific certainties but, rather, are probabilities based on professional judgment concerning the significance of the data gathered during the course of this investigation. PBS is not able to represent that the site or adjoining land contain no hazardous waste, oil or other latent conditions beyond that detected or observed by PBS.

PBS Engineering and Environmental Inc.

November 13, 2014

Megan Nogeire Project Scientist

November 13, 2014 Tom Meray, LG Date

Senior Geologist

Was nsed Geo THOMAS J. MERGY



FIGURES







TABLES

#### TABLE 3 SOIL ANALYTICAL RESULTS

SITE: Mason County Department of Transportation

#### PROJECT NO: 41271.002

	Result mg/kg												
			TPHs			BTEX ar	d VOCs			PAHs			
	Gx	Dx	Heavy Oil	Benzene	Toluene	Ethyl Benzene	Xylene	B(a)P	Naph	Carcinogenic PAHs			
Adopted Criteria	100	2,000	2,000	0.03	7	6	9	0.1	5	0.1**			
Location/ Depth	Description	Gx	Dx	Heavy Oil	Benzene	Toluene	Ethyl Benzene	Xylene	B(a)P	Naph	Carcinogenic PAHs		
Soil Sampling: Se	eptember 26, 2013												
MW5_7.5-9.0	silty Sand	<5.17	<18.7	<46.9	<0.0207	<0.0207	<0.310	0.0864	-	-	-		
MW5_15-16.5	silty Sand	ND	<18.1	<45.2	<0.0289	<0.0289	<0.0433	0.12	<52.4	<52.4	<0.1		
MW6_10-11.5	silty Sand	<5.37	<18.8	<47.0	<0.0215	<0.0215	<0.0322	<0.0215	-	-	-		
MW6_12.5-14.0	silty Sand	<8.42	<20.6	<51.4	<0.0337	0.0555	0.0664	0.150	<53.8	<53.8	<0.1		

BOLD indicates above MTCA Method A Cleanup Levels for Soil

mg/kg - milligrams of contaminant per kilogram of dry weight soil

< 0.1 - not detected above laboratory method reporting limit

(-) - not analyzed

PAH - polycyclic aromatic hydrocarbons

B(a)P - benzo(a)pyrene

Naph - naphthalene

\*\* Value for carcinogenic PAHs by toxicity equivalency methodology in WAC 173-340-708(8) and table 708.2

#### **TABLE 4 GROUNDWATER ANALYTICAL RESULTS**

SITE: Mason County Department of Transportation

PROJECT NO: 41271.002

	Result ug/L (parts per billion)												
		TPHs			١	/OCs by EPA	method 8260	)1		PAHs			
	Gx	Dx	Heavy Oil	Benzene	Toluene	Ethyl Benzene	Xylene	B(a)P	Naph	Carcinogenic PAHs			
Adopted Criteria	MTCA Method A Cleanup Levels for Groundwater	800	500	500	5	1,000	700	1,000	0.1	160	0.1**		
Location/ Depth	Description	Gx	Dx	Heavy Oil	Benzene	Toluene	Ethyl Benzene	Xylene	B(a)P	Naph	Carcinogenic PAHs		
Groundwater San	npling: September 26, 2013												
MW2	Groundwater	<50.0	<50.0	<100	<1.00	<1.00	<1.00	<1.00	<0.100	<0.100	<0.100		
MW3	Groundwater	<50.0	<50.0	<100	<1.00	<1.00	<1.00	<1.00	<0.100	<0.100	<0.100		
MW4	Groundwater	<50.0	<50.0	<100	<1.00	<1.00	<1.00	<1.00	<0.100	<0.100	<0.100		
MW5	Groundwater	<50.0	<50.0	<100	<1.00	<1.00	<1.00	<1.00	<0.100	<0.100	<0.100		
MW6	Groundwater	<50.0	<50.0	<100	<1.00	<1.00	<1.00	<1.00	<0.100	<0.100	<0.100		

BOLD indicates above MTCA Method A Cleanup Levels for Groundwater

TPH - total petroleum hydrocarbons

Gx - gasoline range hydrocarbons

Dx - diesel range hydrocarbons

ug/L - micrograms per litre

<50 - less than the laboratory method reporting limit

Ρ

B(a)P - benzo(a)pyrene

Naph - naphthalene

\*\* Value for carcinogenic PAHs by toxicity equivalency methodology in WAC 173-340-708(8) and table 708.2

APPENDIX I Soil Boring and Well Construction Logs

	1310 Main St. Vancouver, WA 98660	MASON (	COUNT SHE	TY TRA	ANSPOI , WA	RTAT	ION	
gineering vironmer	Phone: (360) 690-4331 Fax: (360) 696-9064 ental	РВ	S PRO 00	JECT N 7167.00	UMBER )0	t:		
EPTH EET	인 H 0 MATERIAL DESCRIPTIO A 0 A O A O A O A O A O A O A O A O A O	N	GROUND- WATER	HEADSPACE VAPOR (PPM)	SAMPLE NUMBER	SAMPLE	DRIVE/ RECOVERY	WELL INSTALLATION Start Card/Tag ID# R65249/APF863
0 - -	ASPHALT Loose, light brown, medium to co SAND with some silt and gravels; gravels are fine and subrounded	arse dry,		11.0			X	Expandable locking cap Hydrated bentonite chips (3/8")
- 5	Loose, light brown, fine SAND wit coarse sand, gravels and silts are subrounded Loose, light brown, medium to co gravelly SAND with some silt, dry and sands range from subangula rounded	h some fine and — arse , gravels r to		6.5 25.0.				Riser pipe: 1-inch, PVC Schedule 80 Ambient air is approximately 7 ppm
- 10 — -	Becomes slightly damp	-  -		11.0 17.0	- - -			10/20 Silica Sand & Native
- 15 —	Loose, light brown, fine to coarse GRAVELS with well graded sand damp Loose, brown, silty fine SAND will fine gravels and medium to coars wet	s and silts, - - 	ATD V	20.0	V19 · TB4-13-15			Screen: 0.010" Slots, 1-inch PVC Schedule 80
20	Final depth 20.0 feet below grour	nd surface			E-MM	· · · · · · · · · · · · · · · · · · ·		
25 —		- 					1997 - S.	
30 —		- 	-					- -
35 -								
40 - ORING RILLEI	G METHOD:Direct Push LOGGED B ED BY:ESN Northwest COMPLETE	Y:C. Johnson ED:6/27/07	NOTE PID no	<u>S</u> . ot functio	l ning on E	Borings	 ТВ-2, Т	 B-3, and TB-5

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And and a second

		1310 Main St. Vancouver, WA 98660	MASON C	OUNT SHE	FY TRA	NSPOF WA	RTAT	ION	
	<b>5</b> 1 + 1 təl	Phone: (360) 690-4331 Fax: (360) 696-9064	PB	S PRO 00	JECT N 7167.00	UMBER 10	:		BORING TE-5/IMW-4
XEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION AND COMMENTS	N	GROUND- WATER	HEADSPACE VAPOR (PPM)	SAMPLE NUMBER	SAMPLE	DRIVE/ RECOVERY	WELL INSTALLATION Start Card/Tag ID# R65249/APF864
0 - - - - - - - - - - - - - - - - -		ASPHALT with loose, brown, fine sand and trace gravels, dry Loose, brown, fine to coarse grave with trace silts and cobbles 2" plug of organic - smelling san with trace coarse sand; dry, low Loose, brown, fine SAND with trace medium to coarse gravel and trace dry Loose, brown, sandy GRAVEL wit silt; dry Loose, brown, fine SAND with sor sand, fine gravel and trace silt; mo Medium dense, brown, sandy fine with some silt; damp Loose, brown, sandy fine GRAVE some silts; wet Final depth 20.0 feet below groun	to coarse elly SAND dy SILT plasticity / e cobbles; h some GRAVEL L with ND with			MW-4-19 TB-5-12-14			Expandable locking cap   Hydrated bentonite chips (3/8")   Riser Pipe: 1-inch PVC Schedule   80   10/20 Silica Sand & Native   Screen: 0.010" Slots, 1-inch PVC Schedule 80   Schedule 80

ł



## Key To Test Pit and Boring Log Symbols

#### SAMPLING DESCRIPTIONS





		517 Eastlake Avenue East Suite100	MASON COUNTY 3740 SHELTON SHELTON,	' TRAN N SPRII WASH	SPOR <sup>®</sup> NGS R	TATION OAD	N	BORING MW-6	
PB Engineerir Environme	S F Intal	Seattle, Washington 98102 Phone: 206.233.9639 Fax: 866.727.0140	PBS PROJI 412	ECT NU 71.002	MBER:	BORING MW-6 LOCATION: (See Site Plan)			
DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIF	ντιον	GROUND- WATER	DID (MPM)	SAMPLE NUMBER	% RECOVERY/ SAMPLE/ BLOWS	COMMENTS	
0.0		ASPHALT 2 inches thick	/	_				Flush-mount monument with 3 feet of concrete backfill	
2.0				-  -					
4.0								PVC Pipe	
- - 6.0 -		Loose, orange-brown, gravelly me SAND; damp, gravel is subrounde (.5 inch to 2 inches), no odor	edium to coarse ed to subangular	- - -	0.0		40 0-7-7	-Bentonite	
8.0 — -					0.2		20 5-4-3	——————————————————————————————————————	
-  		Loose, blackish-brown, fine to me no odor grades to moist	edium SAND; wet,	- -	0.0	MW-6 0-11.5	20 2-1-1		
12.0		gravel increasing in size (.5 to 3	5.5 inches); wet	_  _ Final _ √	0.1	-6 14	15		
- 14.0— -				- <u>*</u> -	0.1	MW 12.5-	30 6-9-	PVC Screen	
- 16.0 — - -	10000000000000000000000000000000000000	Loose, brown, sandy GRAVEL; w small to large (up to 3 inches) and subangular, no odor	vet, gravel is very I subrounded to	- -	0.0		5-5-10		
18.0 — - -	000000000000000000000000000000000000000			 	0.0		60 -10-14		
20.0 —		Final depth 20.0 feet bgs; monitor	ring well installed	_			2		
- 22.0 — -				- - -					
24.0-									
- 26.0—									
28.0			- - -						
30.0 — BORING DRILLED BORING	METH BY: H BIT DI	OD: Hollow-Stem Auger LOGGED olocene Drilling Inc. COMPLE AMETER:	BY: M. Nogeire TED: 9/04/14		<u> </u>		<u> </u>		

BORING LOG-ENV HSA 41271.002 MW5-6\_102014-DRAFT.GPJ DATATMPL.GDT PRINT DATE: 10/21/14:RSD

APPENDIX II Groundwater Sampling Forms

		PBS Engine	ering and Er	vironmental	Project No:	41271.	002				
					Location:	Mason	County Tr	ansp	ortation		
PB	S	GROUN	DWATER SA FORM	MPLING		3740 S	helton Spr	rings	Road		
					Date:	9/11/20	)14				
Field Pers	onnel:	M. Nogeire			Monitoring	Well ID:			M	W2	
				Initial DTW	(feet bgs):			13	.48		
Weather C	onditions:	Sunny, warm		Screen Inte	erval(feet b	gs):		Unk	nown		
Time:		1209			Well depth	(feet bgs):			14	.72	
Sampling	method	Low	flow - peristaltic	pump	Depth of pu	ump inlet (1	feet bgs):		1	4	
Purge Rat	e (L/m)		1L/3m		Sample ID				M	W2	
GW volum	e purged (L)		5L		QC sample	(s)			N	/A	
				Purge Rate (	L/m)						
Elapsed Time (min)	Volume purged (liters	) DTW (feet)	Temperature (C)	Specific Conductivity (ms/cm)	Dissolved Oxygen (mg/L)	рН	ORP (m	V)	Turbity*	Observations	
5	1	13.48	14.3	0.111	0.90	6.05	113.2		N/A	N/A	
8	2	13.49	14.2	0.106	6.02	6.01	110.3		N/A	N/A	
11	3	13.49	14.3	0.102	1.59	5.99	117.9		N/A	N/A	
14	4	13.49	14.5	0.100	1.57	5.97	119.8		N/A	N/A	
17	5	13.49	14.5	0.100	1.57	5.96	121.1		N/A	N/A	
* 1	<u> </u>	<u> </u>									
" only need	ed when analy	yzing for metals	- stabalized or	less than or equ	ai to 10 NIU						
	FIELD OBSER	WATIONS / NOTES (I	.e. well nead conditi	on, groundwater colo	r, sediment load,	recovery, shee	n, odor, equip	ornent fi	unctionality)		

Well head in good condition. Groundwater is clear, good recovery, no odor.

	=	PBS Engine	eering and Er	nvironmental	Project No:	41271.	002			
					Location:	Mason	County Tr	ansporta	ation	
PB	S	GROUN	DWATER SA	AMPLING		3740 S	helton Spr	ings Ro	ad	
					Date:	9/11/20	)14			
Field Pers	onnel:	M. Nogeire			Monitoring	Well ID:			Μ	W3
					Initial DTW	(feet bgs):			13	3.48
Weather C	onditions:	Sunny, warm			Screen Inte	erval(feet b	gs):		Unk	nown
Time:		1330			Well depth	(feet bgs):			18	3.91
Sampling	method	Low	flow - peristaltic	pump	Depth of pu	ump inlet (i	ieet bgs):			15
Purge Rate	e (L/m)		1L/5m		Sample ID				М	W3
GW volum	e purged (L)		5.5L		QC sample	(s)			Ν	J/A
				Purge Rate (	L/m)					
Elapsed Time (min)	Volume purged (liters	) DTW (feet)	Temperature (C)	Specific Conductivity (ms/cm)	Dissolved Oxygen (mg/L)	рН	ORP (m	V) Tu	rbity*	Observations
5	1	13.51	13.7	0.098	6.60	6.13	153.6	١	N/A	N/A
11	2.5	13.50	13.5	0.097	4.57	6.06	161.8	١	N/A	N/A
15	3.5	13.50	13.2	0.097	4.51	6.01	166.2	١	N/A	N/A
20	4.5	13.50	13.2	0.097	4.49	6.01	169.5	١	N/A	N/A
25	5.5	13.50	13.1	0.097	4.51	6.01	170.5	١	N/A	N/A
										l
* only need	led when analy	zing for metals	- stabalized or	less than or equ	al to 10 NTU					
	FIELD OBSER	VATIONS / NOTES (i	.e. well head conditi	on, groundwater colo	r, sediment load,	recovery, shee	n, odor, equip	ment funct	tionality	

Well head is missing both screws. Groundwater is clear, good recovery, no sediment, no odor.

		PBS Engine	ering and Er	nvironmental	Project No:	41271.	002			
					Location:	Mason	County Tr	ansportation		
PB	S	GROUN	DWATER SA FORM	AMPLING		3740 Shelton Springs Road				
					Date:	9/11/20	)14			
Field Pers	onnel:	M. Nogeire			Monitoring	Well ID:		Ν	IW4	
					Initial DTW	(feet bgs):		1	3.78	
Weather C	onditions:	Sunny, warm			Screen Inte	erval(feet b	gs):	Un	known	
Time:		1049			Well depth	(feet bgs):		1	8.91	
Sampling	method	Low	flow - peristaltic	; pump	Depth of pu	ump inlet (1	ieet bgs):		10	
Purge Rate	e (L/m)		1L/3-5m		Sample ID			Ν	IW4	
GW volum	e purged (L)		4L		QC sample	(s)		DUP	_9.11.14	
				Purge Rate (	L/m)					
Elapsed Time (min)	Volume purged (liters	) DTW (feet)	Temperature (C)	Specific Conductivity (ms/cm)	Dissolved Oxygen (mg/L)	рН	ORP (m	V) Turbity*	Observations	
5	1	13.78	12.7	0.098	4.64	5.97	167.4	N/A	N/A	
10	2	13.78	12.7	0.097	4.68	5.94	174.6	N/A	N/A	
13	3	13.78	12.7	0.097	4.72	5.93	175.0	N/A	N/A	
16	4	13.78	12.7	0.097	4.71	5.92	174.9	N/A	N/A	
* only need	led when anal	zing for metals	- stabalized or	less than or equ	al to 10 NTU		·			
	FIELD OBSER	RVATIONS / NOTES (i	.e. well head conditi	on, groundwater colo	r, sediment load,	recovery, shee	n, odor, equip	ment functionalit	/)	

Well head is missing one screw. Groundwater is clear, good recovery, no sediment, no odor.

PBS		PBS Engineering and Environmental GROUNDWATER SAMPLING FORM			Project No:	41271.	002			
					Location:	Mason	County Tra	nsportation		
						3740 Shelton Springs Road				
			Date:	Date: 9/11/2014						
Field Pers	onnel:	M. Nogeire	Monitoring	Well ID:		MW5				
			Initial DTW	(feet bgs)	:	15.315				
Weather C	onditions:	Sunny, warm			Screen Inte	erval(feet b	gs):	10 to 25		
Time:		959			Well depth	(feet bgs):		23	3.47	
Sampling	method	Low	flow - peristaltic	pump	Depth of pu	ump inlet (	feet bgs):		17	
Purge Rate	e (L/m)	1L/3-5m			Sample ID			MW5		
GW volum	e purged (L)		5L		QC sample	(s)	) N/A			
				Purge Rate (	L/m)					
Elapsed Time (min)	Volume purged (liters	) DTW (feet)	Temperature (C)	Specific Conductivity (ms/cm)	Dissolved Oxygen (mg/L)	рН	ORP (mV	) Turbity*	Observations	
5	1	15.32	13.5	0.097	6.46	5.64	178.4	N/A	N/A	
10	2	15.32	13.2	0.096	6.32	5.87	175.1	N/A	N/A	
13	3	15.32	13.3	0.096	6.07	5.93	172.9	N/A	N/A	
16	4	15.32	13.2	0.097	6.04	5.93	174.6	N/A	N/A	
19	5	15.32	13.2	0.097	6.02	5.95	175.9	N/A	N/A	
		-								
* only need	led when anal	zing for metals	- stabalized or	less than or equ	al to 10 NTU					
	FIELD OBSEF	VATIONS / NOTES (i	.e. well head conditi	on, groundwater colo	r, sediment load,	recovery, shee	n, odor, equipm	ent functionality	)	

Well head in good condition. Groundwater is clear, good recover, no sediment, no odor.

PBS		PBS Engineering and Environmental GROUNDWATER SAMPLING FORM			Project No:	41271.	002			
					Location:	Mason	County Tra	ransportation		
						3740 Shelton Springs Road				
	<b>Date:</b> 9/11/2014			)14						
Field Pers	onnel:	M. Nogeire	Monitoring	Well ID:		MW6				
					Initial DTW	(feet bgs)		13.21		
Weather C	onditions:	Sunny, warm			Screen Inte	erval(feet b	gs):	10 to 20		
Time:		1130			Well depth	(feet bgs):		19	9.22	
Sampling	method	Low f	flow - peristaltic	pump	Depth of pu	ump inlet (	feet bgs):		15	
Purge Rate	e (L/m)		1L/3m		Sample ID			MW6		
GW volum	e purged (L)		5L		QC sample	(s)	N/A			
				Purge Rate (	L/m)					
Elapsed Time (min)	Volume purged (liters	) DTW (feet)	Temperature (C)	Specific Conductivity (ms/cm)	Dissolved Oxygen (mg/L)	рН	ORP (mV	) Turbity*	Observations	
5	1	13.21	12.8	0.110	5.10	6.12	181.2	N/A	N/A	
8	2	13.21	12.8	0.110	5.06	6.11	181.8	N/A	N/A	
11	3	13.21	12.8	0.109	5.06	6.11	181.8	N/A	N/A	
14	4	13.21	12.9	0.108	5.08	6.10	182.4	N/A	N/A	
17	5	13.21	12.8	0.108	5.08	6.10	182.1	N/A	N/A	
								-		
		<u> </u>								
* only need	led when analy	zing for metals	- stabalized or	less than or equ	al to 10 NTU					
	FIELD OBSER	VATIONS / NOTES (i	.e. well head conditi	on, groundwater colo	r, sediment load,	recovery, shee	n, odor, equipm	ent functionality	)	

Well head in good condition. Groundwater is clear, good recovery, no sediment, no odor.

# **APPENDIX III**

Well Surveyor's Report



TO: - PBS Engineering,

ATTN: - Megan Nogeire

RE; - Shelton Bus Barn (PBS Project 41271.002)

ENC: - Well Site Survey Data

Site Data collected November 5, 2014

GPS observation (Lat/Long) and ground ties (vertical relationship)

ON-SITE BENCH MARK (PK nail in pavement) Based on NAVD '88

TBM-North: LAT- 47°14'13.5471" LONG- 123°07'14.7205" ELEV- 236.25'

TBM-South: LAT- 47°14'12.9378" LONG- 123°07'12.3603" ELEV-236.28'

MONITOR WELL	LATITUDE	LONGITUDE	CASING ELEV.	PIPE ELEV.
MW-2	N47°14'13.2500"	W123°07'13.8725"	236.66'	236.20'
MW-3	N47°14'13.6161"	W123°07'13.6771"	236.50'	236.21'
MW-4	N47°14'13.0110"	W123°07'13.2413"	236.75'	236.35'
MW-5	N47°14'12.2753"	W123°07'13.4236"	238.18'	237.87'
MW-6	N47°14'13.0765"	W123°07'14.4826"	236.15'	235.92'

David S. Proctor, PLS

# **APPENDIX IV**

Laboratory Reports and Chain-of-Custody Documentation



3600 Fremont Ave. N. Seattle, WA 98103 T: (206) 352-3790 F: (206) 352-7178 info@fremontanalytical.com

**PBS Engineering & Environmental** Megan Nogeire 2517 Eastlake Ave, E #100 Seattle, WA 98102

#### RE: Mason County Transportation Lab ID: 1409045

September 11, 2014

#### **Attention Megan Nogeire:**

Fremont Analytical, Inc. received 4 sample(s) on 9/4/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext. Gasoline by NWTPH-Gx Polyaromatic Hydrocarbons by EPA Method 8270 (SIM) Sample Moisture (Percent Moisture) Volatile Organic Compounds by EPA Method 8260

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Chelsea Ward Project Manager

CC: Tom Mergy



CLIENT: Project: Lab Order:	PBS Engineering & Environmental Mason County Transportation 1409045	work Order Sample Sumi			
Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received		
1409045-001	MW6-10-11.5	09/04/2014 9:41 AM	09/04/2014 4:30 PM		
1409045-002	MW6-12.5-14.0	09/04/2014 9:44 AM	09/04/2014 4:30 PM		
1409045-003	MW5-7.5-9.0	09/04/2014 11:27 AM	09/04/2014 4:30 PM		
1409045-004	MW5-15-16.5	09/04/2014 11:38 AM	09/04/2014 4:30 PM		



**Case Narrative** 

WO#: **1409045** Date: **9/11/2014** 

CLIENT:PBS Engineering & EnvironmentalProject:Mason County Transportation

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

#### II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

#### **III. ANALYSES AND EXCEPTIONS:**

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



# **Analytical Report**

WO#: **1409045** Date Reported: **9/11/2014** 

Client: PBS Engineering & Environ	mental			Collection	Dat	<b>e:</b> 9/4/2014 9:41:00 AM
Project: Mason County Transportation	on					
Lab ID: 1409045-001				Matrix: Sc	oil	
Client Sample ID: MW6-10-11.5					••	
Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-D	x/Dx Ext.			Batch	n ID:	8636 Analyst: EC
Diesel (Fuel Oil)	ND	18.8		ma/Ka-dry	1	9/6/2014 7:19:00 AM
Heavy Oil	ND	47.0		mg/Kg-dry	1	9/6/2014 7:19:00 AM
Surr: 2-Fluorobiphenyl	104	50-150		%REC	1	9/6/2014 7:19:00 AM
Surr: o-Terphenyl	97.8	50-150		%REC	1	9/6/2014 7:19:00 AM
Gasoline by NWTPH-Gx				Batch	n ID:	8639 Analyst: BC
Gasoline	ND	5.37		mg/Kg-dry	1	9/6/2014 9:32:00 PM
Surr: 4-Bromofluorobenzene	93.1	65-135		%REC	1	9/6/2014 9:32:00 PM
Surr: Toluene-d8	101	65-135		%REC	1	9/6/2014 9:32:00 PM
Volatile Organic Compounds by E	PA Method	8260		Batch	n ID:	8639 Analyst: BC
Benzene	ND	0.0215		mg/Kg-dry	1	9/6/2014 9:32:00 PM
Toluene	0.0344	0.0215		mg/Kg-dry	1	9/6/2014 9:32:00 PM
Ethylbenzene	0.0416	0.0322		mg/Kg-dry	1	9/6/2014 9:32:00 PM
m,p-Xylene	0.0899	0.0215		mg/Kg-dry	1	9/6/2014 9:32:00 PM
o-Xylene	ND	0.0215		mg/Kg-dry	1	9/6/2014 9:32:00 PM
Surr: Dibromofluoromethane	93.7	63.7-129		%REC	1	9/6/2014 9:32:00 PM
Surr: Toluene-d8	103	61.4-128		%REC	1	9/6/2014 9:32:00 PM
Surr: 1-Bromo-4-fluorobenzene	95.1	63.1-141		%REC	1	9/6/2014 9:32:00 PM
Sample Moisture (Percent Moistur	<u>e)</u>			Batch	n ID:	R16605 Analyst: TK
Percent Moisture	8.04			wt%	1	9/5/2014 3:39:31 PM

Qualifiers:	В	Analyte detected in the associated Method Blank	D	Dilution was required
	Е	Value above quantitation range	Н	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



# **Analytical Report**

WO#: **1409045** Date Reported: **9/11/2014** 

Client: PBS Engineering & Env	Collection Date: 9/4/2014 9:44:00 AM					
Project: Mason County Transpo	rtation					
<b>I ab ID</b> : 1409045-002				Matrix: Sc	vil	
	0				/11	
	.U					
Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTP	H-Dx/Dx Ext.			Batch	n ID: 8636	Analyst: EC
Diesel (Fuel Oil)	ND	20.6		mg/Kg-dry	1	9/6/2014 7:49:00 AM
Heavy Oil	ND	51.4		mg/Kg-dry	1	9/6/2014 7:49:00 AM
Surr: 2-Fluorobiphenyl	104	50-150		%REC	1	9/6/2014 7:49:00 AM
Surr: o-Terphenyl	97.2	50-150		%REC	1	9/6/2014 7:49:00 AM
Polyaromatic Hydrocarbons by	y EPA Method 8	<u>270 (SIM)</u>		Batch	n ID: 8637	Analyst: MD
Pentachlorophenol	ND	21.5		ua/Ka-drv	1	9/5/2014 10:18:00 PM
Naphthalene	ND	53.8		ua/Ka-drv	1	9/5/2014 10:18:00 PM
2-Methylnaphthalene	ND	53.8		ua/Ka-drv	1	9/5/2014 10:18:00 PM
1-Methylnaphthalene	ND	53.8		ua/Ka-drv	1	9/5/2014 10:18:00 PM
Acenaphthylene	ND	53.8		ua/Ka-drv	1	9/5/2014 10:18:00 PM
Acenaphthene	ND	53.8		ua/Ka-drv	1	9/5/2014 10:18:00 PM
Fluorene	ND	53.8		ua/Ka-drv	1	9/5/2014 10:18:00 PM
Phenanthrene	ND	53.8		ua/Ka-drv	1	9/5/2014 10:18:00 PM
Anthracene	ND	53.8		ua/Ka-drv	1	9/5/2014 10:18:00 PM
Fluoranthene	ND	53.8		ua/Ka-drv	1	9/5/2014 10:18:00 PM
Pyrene	ND	53.8		ua/Ka-drv	1	9/5/2014 10·18·00 PM
Benz(a)anthracene	ND	53.8		ua/Ka-drv	1	9/5/2014 10:18:00 PM
Chrysene	ND	53.8		ua/Ka-drv	1	9/5/2014 10:18:00 PM
Benzo(b)fluoranthene	ND	53.8		ua/Ka-drv	1	9/5/2014 10:18:00 PM
Benzo(k)fluoranthene	ND	53.8		ua/Ka-dry	1	9/5/2014 10·18·00 PM
Benzo(a)pyrene	ND	53.8		ua/Ka-drv	1	9/5/2014 10:18:00 PM
Indeno(1,2,3-cd)pyrene	ND	53.8		ua/Ka-drv	1	9/5/2014 10:18:00 PM
Dibenz(a, h)anthracene	ND	53.8		ua/Ka-dry	1	9/5/2014 10:18:00 PM
Benzo(a h i)pervlene	ND	53.8		ua/Ka-dry	1	9/5/2014 10:18:00 PM
Surr: 2-Eluorobiphenyl	79.2	42 7-132		%RFC	1	9/5/2014 10:18:00 PM
Surr: Terphenyl-d14 (surr)	86.3	48.8-157		%REC	1	9/5/2014 10:18:00 PM
Gasoline by NWTPH-Gx				Batch	n ID: 8639	Analyst: BC
Gasoline	ND	8 42		ma/Ka-drv	1	9/6/2014 10·02·00 PM
Surr: 4-Bromofluorobenzene	93.3	65-135		%RFC	1	9/6/2014 10:02:00 PM
Surr: Toluene-d8	102	65-135		%REC	1	9/6/2014 10:02:00 PM

Qualifiers: B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

RL Reporting Limit

D Dilution was required

H Holding times for preparation or analysis exceeded

ND Not detected at the Reporting Limit

S Spike recovery outside accepted recovery limits


WO#: **1409045** Date Reported: **9/11/2014** 

Client: PBS Engineering & Env		Collection Date: 9/4/2014 9:44:00 AM										
Project: Mason County Transpor	tation											
Lab ID: 1409045-002				Matrix: Soil								
Client Sample ID: MW6-12.5-14.0	D											
Analyses	Result	RL	Qual	Units DF		Dat	Date Analyzed					
Volatile Organic Compounds b	y EPA Method	<u>8260</u>		Batch	ו ID: 8	8639	Analyst: BC					
Benzene	ND	0.0337		mg/Kg-dry	1	9/6/20	014 10:02:00 PM					
Toluene	0.0555	0.0337		mg/Kg-dry	1	9/6/20	014 10:02:00 PM					
Ethylbenzene	0.0664	0.0505		mg/Kg-dry	1	9/6/20	014 10:02:00 PM					
m,p-Xylene	0.150	0.0337		mg/Kg-dry	1	9/6/20	014 10:02:00 PM					
o-Xylene	ND	0.0337		mg/Kg-dry	1	9/6/20	014 10:02:00 PM					
Surr: Dibromofluoromethane	89.3	63.7-129		%REC	1	9/6/20	014 10:02:00 PM					
Surr: Toluene-d8	94.0	61.4-128		%REC	1	9/6/20	014 10:02:00 PM					
Surr: 1-Bromo-4-fluorobenzene	95.2	63.1-141		%REC	1	9/6/20	014 10:02:00 PM					
Sample Moisture (Percent Mois	<u>sture)</u>			Batch	ו ID: I	R16605	Analyst: TK					
Percent Moisture	7.98			wt%	1	9/5/20	014 3:39:31 PM					

Qualifiers:	В

Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

RL Reporting Limit

- D Dilution was required
- H Holding times for preparation or analysis exceeded
- ND Not detected at the Reporting Limit



WO#: **1409045** Date Reported: **9/11/2014** 

Client: PBS Engineering & Enviror	nmental			Collection	Dat	e: 9/4/2014 11:27:00 AM
Lab ID: 1409045-003	on			Matrix: So	il	
Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-	)x/Dx Ext.			Batch	ID:	8636 Analyst: EC
Diesel (Fuel Oil)	ND	18 7		ma/Ka-dry	1	9/6/2014 8·18·00 AM
Heavy Oil	ND	46.9		mg/Kg-dry	1	9/6/2014 8:18:00 AM
Surr: 2-Eluorobiphenyl	109	50-150		%REC	1	9/6/2014 8:18:00 AM
Surr: o-Terphenyl	103	50-150		%REC	1	9/6/2014 8:18:00 AM
Gasoline by NWTPH-Gx				Batch	ID:	8639 Analyst: BC
Gasoline	ND	5.17		mg/Kg-dry	1	9/6/2014 11:01:00 PM
Surr: 4-Bromofluorobenzene	93.3	65-135		%REC	1	9/6/2014 11:01:00 PM
Surr: Toluene-d8	102	65-135		%REC	1	9/6/2014 11:01:00 PM
Volatile Organic Compounds by E	PA Method	8260		Batch	ID:	8639 Analyst: BC
Benzene	ND	0.0207		mg/Kg-dry	1	9/6/2014 11:01:00 PM
Toluene	ND	0.0207		mg/Kg-dry	1	9/6/2014 11:01:00 PM
Ethylbenzene	ND	0.0310		mg/Kg-dry	1	9/6/2014 11:01:00 PM
m,p-Xylene	0.0864	0.0207		mg/Kg-dry	1	9/6/2014 11:01:00 PM
o-Xylene	ND	0.0207		mg/Kg-dry	1	9/6/2014 11:01:00 PM
Surr: Dibromofluoromethane	93.9	63.7-129		%REC	1	9/6/2014 11:01:00 PM
Surr: Toluene-d8	102	61.4-128		%REC	1	9/6/2014 11:01:00 PM
Surr: 1-Bromo-4-fluorobenzene	95.2	63.1-141		%REC	1	9/6/2014 11:01:00 PM
Sample Moisture (Percent Moistur	re)			Batch	ID:	R16605 Analyst: TK
Percent Moisture	3.87			wt%	1	9/5/2014 3:39:31 PM

Qualifiers:	В	Analyte detected in the associated Method Blank	D	Dilution was required
	Е	Value above quantitation range	н	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



WO#: **1409045** Date Reported: **9/11/2014** 

Client: PBS Engineering & Envi	ironmental		Collection Date: 9/4/2014 11:38:00 AM							
Project: Mason County Transport	tation									
Lab ID: 1409045 004				Matrix: Ca	.:.					
				Matrix. 50	)					
Client Sample ID: MW5-15-16.5										
Analyses	Result	RL	Qual	Units	DF	Date Analyzed				
Diesel and Heavy Oil by NWTPI	<u> I-Dx/Dx Ext.</u>			Batch	n ID: 8636	Analyst: EC				
Diesel (Fuel Oil)	ND	18.1		mg/Kg-dry	1	9/6/2014 8:48:00 AM				
Heavy Oil	ND	45.2		mg/Kg-dry	1	9/6/2014 8:48:00 AM				
Surr: 2-Fluorobiphenyl	104	50-150		%REC	1	9/6/2014 8:48:00 AM				
Surr: o-Terphenyl	96.6	50-150		%REC	1	9/6/2014 8:48:00 AM				
Polyaromatic Hydrocarbons by	EPA Method 8	270 (SIM)		Batch	n ID: 8637	Analyst: MD				
Pentachlorophenol	ND	21.0		ua/Ka-drv	1	9/5/2014 10:41:00 PM				
Naphthalene	ND	52.4		ua/Ka-dry	1	9/5/2014 10:41:00 PM				
2-Methylnaphthalene	ND	52.4		ua/Ka-dry	1	9/5/2014 10:41:00 PM				
1-Methylnaphthalene	ND	52.4		ua/Ka-dry	1	9/5/2014 10:41:00 PM				
Acenaphthylene	ND	52.4		ua/Ka-dry	1	9/5/2014 10:41:00 PM				
Acenaphthene	ND	52.4		ua/Ka-dry	1	9/5/2014 10:41:00 PM				
Fluorene	ND	52.4		ua/Ka-dry	1	9/5/2014 10:41:00 PM				
Phenanthrene	ND	52.4		ua/Ka-drv	1	9/5/2014 10:41:00 PM				
Anthracene	ND	52.4		ua/Ka-drv	1	9/5/2014 10:41:00 PM				
Fluoranthene	ND	52.4		ua/Ka-drv	1	9/5/2014 10:41:00 PM				
Pyrene	ND	52.4		ua/Ka-drv	1	9/5/2014 10:41:00 PM				
Benz(a)anthracene	ND	52.4		ua/Ka-dry	1	9/5/2014 10:41:00 PM				
Chrysene	ND	52.4		ua/Ka-dry	1	9/5/2014 10:41:00 PM				
Benzo(b)fluoranthene	ND	52.4		ua/Ka-drv	1	9/5/2014 10:41:00 PM				
Benzo(k)fluoranthene	ND	52.4		ua/Ka-dry	1	9/5/2014 10:41:00 PM				
Benzo(a)pyrene	ND	52.4		ua/Ka-dry	1	9/5/2014 10:41:00 PM				
Indeno(1,2,3-cd)pyrene	ND	52.4		ua/Ka-drv	1	9/5/2014 10:41:00 PM				
Dibenz(a, b)anthracene	ND	52.4		ua/Ka-drv	1	9/5/2014 10:41:00 PM				
Benzo(a h i)pervlene	ND	52.4		ua/Ka-drv	1	9/5/2014 10:41:00 PM				
Surr: 2-Fluorobiphenyl	84.8	42 7-132		%RFC	1	9/5/2014 10:41:00 PM				
Surr: Terphenyl-d14 (surr)	89.2	48.8-157		%REC	1	9/5/2014 10:41:00 PM				
Gasoline by NWTPH-Gx				Batch	n ID: 8639	Analyst: BC				
Gasoline	ND	7.22		ma/Ka-drv	1	9/6/2014 11:30:00 PM				
Surr: 4-Bromofluorobenzene	92.8	65-135		%REC	1	9/6/2014 11:30:00 PM				
Surr: Toluene-d8	102	65-135		%REC	1	9/6/2014 11:30:00 PM				

Qualifiers: B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

RL Reporting Limit

D Dilution was required

H Holding times for preparation or analysis exceeded

ND Not detected at the Reporting Limit



WO#: **1409045** Date Reported: **9/11/2014** 

Client: PBS Engineering & Envi	Collection Date: 9/4/2014 11:38:00 AM											
Project: Mason County Transport	ation											
Lab ID: 1409045-004				Matrix: Soil								
Client Sample ID: MW5-15-16.5												
Analyses	Result	RL	Qual	Units	DF	Da	te Analyzed					
Volatile Organic Compounds by	v EPA Method	<u>8260</u>		Batch	ו ID:	8639	Analyst: BC					
Benzene	ND	0.0289		mg/Kg-dry	1	9/6/2	014 11:30:00 PM					
Toluene	ND	0.0289		mg/Kg-dry	1	9/6/2	014 11:30:00 PM					
Ethylbenzene	ND	0.0433		mg/Kg-dry	1	9/6/2	014 11:30:00 PM					
m,p-Xylene	0.120	0.0289		mg/Kg-dry	1	9/6/2	014 11:30:00 PM					
o-Xylene	ND	0.0289		mg/Kg-dry	1	9/6/2	014 11:30:00 PM					
Surr: Dibromofluoromethane	88.7	63.7-129		%REC	1	9/6/2	014 11:30:00 PM					
Surr: Toluene-d8	94.9	61.4-128		%REC	1	9/6/2	014 11:30:00 PM					
Surr: 1-Bromo-4-fluorobenzene	94.7	63.1-141		%REC	1	9/6/2	014 11:30:00 PM					
Sample Moisture (Percent Moist	ture)			Batch	ו ID:	R16605	Analyst: TK					
Percent Moisture	9.10			wt%	1	9/5/2	014 3:39:31 PM					

Qualifiers:	В	

Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

RL Reporting Limit

- D Dilution was required
- H Holding times for preparation or analysis exceeded
- ND Not detected at the Reporting Limit

Work Order: CLIENT: Project:	1409045 PBS Engine Mason Cou	eering & En nty Transpo	vironmenta	I					Diesel a	QC S and Heavy (	SUMMAI Oil by NW1	RY REP ГРН-Dx/D	PORT ox Ext.
Sample ID: 14090	50-006ADUP	SampType	DUP			Units: mg/	/Kg-dry	Prep Da	te: 9/5/201	4	RunNo: 160	615	
Client ID: BATCI	н	Batch ID:	8636					Analysis Da	te: 9/6/201	4	SeqNo: 334	4138	
Analyte		I	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)			ND	18.8						0		30	
Heavy Oil			ND	46.9						0		30	
Surr: 2-Fluorobip	ohenyl		20.1		18.76		107	50	150		0		
Surr: o-Terpheny	/I		18.7		18.76		99.8	50	150		0		
Sample ID: MB-86	36	SampType	MBLK			Units: mg	/Kg	Prep Da	te: 9/5/201	4	RunNo: 16(	615	
Client ID: MBLK	S	Batch ID:	8636					Analysis Da	te: 9/6/201	4	SeqNo: 334	4150	
Analyte		I	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)			ND	20.0									
Heavy Oil			ND	50.0									
Surr: 2-Fluorobip	bhenyl		20.0		20.00		100	50	150				
Surr: o-Terpheny	/I		18.6		20.00		93.0	50	150				
Sample ID: LCS-8	636	SampType	LCS			Units: mg	/Kg	Prep Da	te: 9/5/201	4	RunNo: 16(	615	
Client ID: LCSS		Batch ID:	8636					Analysis Da	te: 9/6/201	4	SeqNo: 334	4152	
Analyte		I	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)			525	20.0	500.0	0	105	65	135				
Surr: 2-Fluorobip	bhenyl		22.4		20.00		112	50	150				
Surr: o-Terpheny	/I		20.5		20.00		102	50	150				



Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

D Dilution was required

- J Analyte detected below quantitation limits
- RL Reporting Limit

- E Value above quantitation range
- ND Not detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits



CLIENT: PBS Engineering & Environmental

## **QC SUMMARY REPORT**

### Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Project: Mason Cou	unty Transportation				P0	lyaromat	ic Hydrocarbons b	y EPA wethod 827	U (SIN)		
Sample ID: LCS-8637	SampType: LCS			Units: µg/Kg		Prep Da	te: 9/5/2014	RunNo: 16644			
Client ID: LCSS	Batch ID: 8637					Analysis Da	te: 9/5/2014	SeqNo: 334614			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual		
Naphthalene	701	50.0	1,000	0	70.1	61.6	125				
2-Methylnaphthalene	754	50.0	1,000	0	75.4	58.2	129				
1-Methylnaphthalene	775	50.0	1,000	0	77.5	56.4	132				
Acenaphthylene	705	50.0	1,000	0	70.5	52.2	133				
Acenaphthene	754	50.0	1,000	0	75.4	54	131				
Fluorene	747	50.0	1,000	0	74.7	53.4	131				
Phenanthrene	729	50.0	1,000	0	72.9	55.6	128				
Anthracene	710	50.0	1,000	0	71.0	51	132				
Fluoranthene	707	50.0	1,000	0	70.7	48.4	134				
Pyrene	709	50.0	1,000	0	70.9	48.6	135				
Benz(a)anthracene	646	50.0	1,000	0	64.6	41.9	136				
Chrysene	738	50.0	1,000	0	73.8	51.4	135				
Benzo(b)fluoranthene	835	50.0	1,000	0	83.5	39.7	137				
Benzo(k)fluoranthene	615	50.0	1,000	0	61.5	45.7	138				
Benzo(a)pyrene	635	50.0	1,000	0	63.5	45.3	135				
Indeno(1,2,3-cd)pyrene	721	50.0	1,000	0	72.1	45.4	137				
Dibenz(a,h)anthracene	742	50.0	1,000	0	74.2	45.8	134				
Benzo(g,h,i)pervlene	737	50.0	1,000	0	73.7	45	134				
Surr: 2-Fluorobiphenyl	821		1,000		82.1	42.7	132				
Surr: Terphenyl-d14 (surr)	906		1,000		90.6	48.8	157				
Sample ID: 1409040-006AMS	SampType: <b>MS</b>			Units: µg/Kg-	dry	Prep Da	te: 9/5/2014	RunNo: <b>16644</b>			
Client ID: BATCH	Batch ID: 8637					Analysis Da	te: 9/6/2014	SeqNo: 334623			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual		
Naphthalene	728	57.4	1,147	0	63.5	42.9	138				
2-Methylnaphthalene	836	57.4	1,147	0	72.9	42.8	151				
1-Methylnaphthalene	847	57.4	1,147	0	73.9	41.6	148				
Qualifiers: B Analyte detected in		D Dilution wa	as required			E Value above quantitation	range				
H Holding times for p	preparation or analysis exceeded		J Analyte detected below quantitation limits				ND Not detected at the Reporting Limit				
R RPD outside accept	oted recovery limits		RL Reporting	Limit			S Spike recovery outside ac	cepted recovery limits			



### CLIENT: PBS Engineering & Environmental

## QC SUMMARY REPORT

Project: Mason County Transportation

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: 1409040-006AMS	SampType: <b>MS</b>			Units: µg/Kg-c	lry	Prep Dat	e: 9/5/2014	RunNo: 16644
Client ID: BATCH	Batch ID: 8637					Analysis Dat	e: 9/6/2014	SeqNo: 334623
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit Qual
Acenaphthylene	847	57.4	1,147	0	73.8	32.6	160	
Acenaphthene	880	57.4	1,147	0	76.7	46.3	142	
Fluorene	917	57.4	1,147	0	80.0	43.4	153	
Phenanthrene	852	57.4	1,147	0	74.3	45.5	140	
Anthracene	837	57.4	1,147	0	73.0	32.6	160	
Fluoranthene	892	57.4	1,147	0	77.7	44.6	161	
Pyrene	883	57.4	1,147	0	77.0	48.3	158	
Benz(a)anthracene	888	57.4	1,147	0	77.4	57.5	169	
Chrysene	832	57.4	1,147	0	72.5	45.2	146	
Benzo(b)fluoranthene	1,010	57.4	1,147	0	87.8	42.2	168	
Benzo(k)fluoranthene	831	57.4	1,147	0	72.4	48	161	
Benzo(a)pyrene	868	57.4	1,147	0	75.6	34.4	179	
Indeno(1,2,3-cd)pyrene	1,050	57.4	1,147	0	91.3	41.1	165	
Dibenz(a,h)anthracene	1,010	57.4	1,147	0	88.4	38.1	166	
Benzo(g,h,i)perylene	956	57.4	1,147	0	83.3	45.6	157	
Surr: 2-Fluorobiphenyl	975		1,147		85.0	42.7	132	
Surr: Terphenyl-d14 (surr)	1,110		1,147		97.1	48.8	157	

Sample ID: 14	0904	0-005ADUP SampType	e: DUP				Unit	s: µg/Kg-c	iry	Prep Dat	te: 9/1	5/2014	1	RunNo: 166	544	
Client ID: BA	атсн	Batch ID:	8637							Analysis Dat	te: 9/0	6/2014	1	SeqNo: 334	1625	
Analyte			Result	RL	SPK	value	SPK Re	<sup>r</sup> Val	%REC	LowLimit	HighL	_imit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene			ND	59.3									0		30	
2-Methylnaphth	nalen	9	ND	59.3									0		30	
1-Methylnaphth	nalen	9	ND	59.3									0		30	
Acenaphthylen	е		ND	59.3									0		30	
Acenaphthene			ND	59.3									0		30	
Fluorene			ND	59.3									0		30	
Qualifiers:	В	Analyte detected in the associated Me	thod Blank		DE	Dilution wa	as required				E	Value	above quantitation rai	nge		
	н	Holding times for preparation or analy	sis exceeded		J A	\nalyte de	stected below	quantitation lin	nits		ND	Not de	stected at the Reportir	ng Limit		
	R	RPD outside accepted recovery limits			RL F	Reporting	Limit				S	Spike	recovery outside acce	pted recovery limit	s	



Project:

#### CLIENT: PBS Engineering & Environmental

Mason County Transportation

## **QC SUMMARY REPORT**

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: 1409040-005ADUP	SampType: <b>DUP</b>			Units: µg/k	(g-dry	Prep Da	te: 9/5/201	4	RunNo: 16	644	
Client ID: BATCH	Batch ID: 8637					Analysis Da	te: 9/6/201	4	SeqNo: 334	1625	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenanthrene	ND	59.3						0		30	
Anthracene	ND	59.3						0		30	
Fluoranthene	ND	59.3						0		30	
Pyrene	ND	59.3						0		30	
Benz(a)anthracene	ND	59.3						0		30	
Chrysene	ND	59.3						0		30	
Benzo(b)fluoranthene	ND	59.3						0		30	
Benzo(k)fluoranthene	ND	59.3						0		30	
Benzo(a)pyrene	ND	59.3						0		30	
Indeno(1,2,3-cd)pyrene	ND	59.3						0		30	
Dibenz(a,h)anthracene	ND	59.3						0		30	
Benzo(g,h,i)perylene	ND	59.3						0		30	
Surr: 2-Fluorobiphenyl	400		1,186		33.7	42.7	132		0		S
Surr: Terphenyl-d14 (surr)	594		1,186		50.1	48.8	157		0		

NOTES:

S - Outlying surrogate recovery observed. The parent sample recoveries were within range. The method is in control as indicated by the LCS.

Sample ID: N	/B-86	SampType: MBLK				Units: µg/Kg		Prep Da	te: 9/	/5/201	4	RunNo: 16	644			
Client ID:	/IBLK	S Batch ID: 8637					Analysis Date: 9/5/2014				4	SeqNo: 334627				
Analyte		Result	RL	SP	K value	SPK Ref Val	%REC	LowLimit	High	Limit	RPD Ref Val	%RPD	RPDLimit	Qual		
Naphthalene		ND	50.0													
2-Methylnaph	thale	ne ND	50.0													
1-Methylnaph	thale	ne ND	50.0													
Acenaphthyle	ne	ND	50.0													
Acenaphthene	е	ND	50.0													
Fluorene		ND	50.0													
Phenanthrene	Э	ND	50.0													
Anthracene		ND	50.0													
Qualifiers:	В	Analyte detected in the associated Method Blank		D	Dilution wa	s required			Е	Value	e above quantitation ran	ge				
	н	Holding times for preparation or analysis exceeded		J	Analyte def	ected below quantitation lin	nits		ND	Not d	etected at the Reporting	g Limit				
	R	RPD outside accepted recovery limits		RL	Reporting I	_imit			S	Spike	recovery outside accer	oted recovery limi	ts			

R RPD outside accepted recovery limits

	100015											
CLIENT: Project: M	BS Engineering & Env ason County Transpo	vironmenta rtation	l			SUMMAI y EPA Met	ARY REPORI lethod 8270 (SIM)					
Sample ID: MB-8637	SampType:	MBLK			Units: µg/Kg		Prep Da	ite: 9/5/201	RunNo: 16			
Client ID: MBLKS	Batch ID:	8637					Analysis Da	te: 9/5/201	4	SeqNo: 334	4627	
Analyte	F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoranthene		ND	50.0									
Pyrene		ND	50.0									
Benz(a)anthracene		ND	50.0									
Chrysene		ND	50.0									
Benzo(b)fluoranthene		ND	50.0									
Benzo(k)fluoranthene		ND	50.0									
Benzo(a)pyrene		ND	50.0									
Indeno(1,2,3-cd)pyrene	9	ND	50.0									
Dibenz(a,h)anthracene		ND	50.0									
Benzo(g,h,i)perylene		ND	50.0									
Surr: 2-Fluorobiphen	yl	808		1,000		80.8	42.7	132				
Surr: Terphenyl-d14	(surr)	896		1,000		89.6	48.8	157				

Qualifiers: B Analyte detected in the associated Method Blank

Fremont

Analytical

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

D Dilution was required

- J Analyte detected below quantitation limits
- RL Reporting Limit

E Value above quantitation range

- ND Not detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Work Order: 1409045 QC SUMMARY REPORT CLIENT: **PBS Engineering & Environmental Gasoline by NWTPH-Gx Project:** Mason County Transportation Sample ID: 1409045-002BDUP SampType: DUP Units: mg/Kg-dry Prep Date: 9/5/2014 RunNo: 16629 Client ID: MW6-12.5-14.0 Batch ID: 8639 Analysis Date: 9/6/2014 SeqNo: 334414 Result SPK value SPK Ref Val LowLimit HighLimit RPD Ref Val %RPD RPDLimit Analyte RL %REC Qual Gasoline ND 8.42 0 30 Surr: Toluene-d8 4.28 4.210 102 65 135 0 Surr: 4-Bromofluorobenzene 3.92 4.210 93.2 65 135 0 SampType: LCS Sample ID: LCS-8639 Units: mg/Kg Prep Date: 9/5/2014 RunNo: 16629 Client ID: LCSS Batch ID: Analysis Date: 9/6/2014 8639 SeqNo: 334419 RL SPK value SPK Ref Val LowLimit HighLimit RPD Ref Val Result %REC %RPD RPDLimit Qual Analyte Gasoline 28.4 5.00 25.00 0 65 135 114 Surr: Toluene-d8 2.51 2.500 100 65 135 Surr: 4-Bromofluorobenzene 2.51 2.500 100 65 135 Sample ID: MB-8639 SampType: MBLK Units: mg/Kg Prep Date: 9/5/2014 RunNo: 16629 Client ID: MBLKS Batch ID: 8639 Analysis Date: 9/6/2014 SeqNo: 334420 SPK value SPK Ref Val LowLimit HighLimit RPD Ref Val %RPD RPDLimit Analyte Result RL %REC Qual Gasoline ND 5.00 Surr: Toluene-d8 2.55 2.500 102 65 135 Surr: 4-Bromofluorobenzene 2.33 2.500 93.2 65 135

B Analyte detected in the associated Method Blank

Fremont

Analvtical

- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

- D Dilution was required
- J Analyte detected below quantitation limits
- RL Reporting Limit

- E Value above quantitation range
- ND Not detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits



Project:

#### CLIENT: PBS Engineering & Environmental

### **QC SUMMARY REPORT**

### Volatile Organic Compounds by EPA Method 8260

Project: Mason Cour	nty Transportation									as by EPA wethod 8260				
Sample ID: 1409040-002BMS	SampType: <b>MS</b>			Units: mg	/Kg-dry	Prep Da	te: 9/5/201	4	RunNo: 166	21				
Client ID: BATCH	Batch ID: 8639					Analysis Dat	te: 9/6/201	4	SeqNo: 334	268				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual			
Benzene	1.51	0.0285	1.424	0.01418	105	63.5	133							
Toluene	1.56	0.0285	1.424	0.03309	107	63.4	132							
Ethylbenzene	1.56	0.0427	1.424	0.09631	103	54.5	134							
m,p-Xylene	3.17	0.0285	2.847	0.2183	104	53.1	132							
o-Xylene	1.53	0.0285	1.424	0.04665	104	53.3	139							
Surr: Dibromofluoromethane	3.54		3.559		99.4	63.7	129							
Surr: Toluene-d8	3.90		3.559		110	61.4	128							
Surr: 1-Bromo-4-fluorobenzene	3.65		3.559		103	63.1	141							

Sample ID: 1409045-002BDUP	SampType: <b>DUP</b>			Units: mg/Kg-	dry	Prep Da	te: 9/5/201	4	RunNo: 166	621	
Client ID: MW6-12.5-14.0	Batch ID: 8639					Analysis Da	te: 9/6/201	4	SeqNo: 334	281	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.0337						0		30	
Toluene	0.0557	0.0337						0.05548	0.439	30	
Ethylbenzene	0.0660	0.0505						0.06639	0.649	30	
m,p-Xylene	0.147	0.0337						0.1502	1.94	30	
o-Xylene	ND	0.0337						0		30	
Surr: Dibromofluoromethane	3.94		4.210		93.7	63.7	129		0		
Surr: Toluene-d8	4.37		4.210		104	61.4	128		0		
Surr: 1-Bromo-4-fluorobenzene	4.01		4.210		95.3	63.1	141		0		
Sample ID: LCS-8639	SampType: LCS			Units: mg/Kg		Prep Da	te: 9/5/201	4	RunNo: 166	21	
Client ID: LCSS	Batch ID: 8639					Analysis Da	te: 9/6/201	4	SeqNo: 334	286	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.02	0.0200	1.000	0	102	74.6	124				
Toluene	0.854	0.0200	1.000	0	85.4	67.3	138				
Qualifiers: B Analyte detected in the	ne associated Method Blank		D Dilution wa	as required			E Value	e above quantitation ra	ange		
H Holding times for pre	paration or analysis exceeded		J Analyte de	tected below quantitation lin	nits		ND Not d	etected at the Report	ing Limit		

R RPD outside accepted recovery limits

RL Reporting Limit

Fremont
[Analytical]

Work Order: 1409045	Vork Order:	1409045	
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#### CLIENT: PBS Engineering & Environmental

## **QC SUMMARY REPORT**

### Volatile Organic Compounds by EPA Method 8260

Project: Mason Cour	nty Transportation					volatile	Organi	c Compou	nas by EP	A method	1 0200
Sample ID: LCS-8639	SampType: LCS			Units: mg/Kg		Prep Dat	e: 9/5/201	4	RunNo: 166	621	
Client ID: LCSS	Batch ID: 8639					Analysis Dat	e: 9/6/201	4	SeqNo: 334	1286	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	0.967	0.0300	1.000	0	96.7	74	129				
m,p-Xylene	1.98	0.0200	2.000	0	99.2	79.8	128				
o-Xylene	0.964	0.0200	1.000	0	96.4	72.7	124				
Surr: Dibromofluoromethane	2.42		2.500		96.7	63.7	129				
Surr: Toluene-d8	2.26		2.500		90.3	61.4	128				
Surr: 1-Bromo-4-fluorobenzene	2.65		2.500		106	63.1	141				
Sample ID: MB-8639	SampType: MBLK			Units: mg/Kg		Prep Dat	e: 9/5/201	4	RunNo: 166	621	
Client ID: MBLKS	Batch ID: 8639					Analysis Dat	e: 9/6/201	4	SeqNo: 334	1338	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Danmana	ND	0.0000									

						0
Benzene	ND	0.0200				
Toluene	ND	0.0200				
Ethylbenzene	ND	0.0300				
m,p-Xylene	ND	0.0200				
o-Xylene	ND	0.0200				
Surr: Dibromofluoromethane	2.66		2.500	107	63.7	129
Surr: Toluene-d8	2.30		2.500	92.0	61.4	128
Surr: 1-Bromo-4-fluorobenzene	2.39		2.500	95.6	63.1	141

В

- Analyte detected in the associated Method Blank
- н Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

- D Dilution was required
- Analyte detected below quantitation limits J
- RL Reporting Limit

- Е Value above quantitation range
- ND Not detected at the Reporting Limit
- s Spike recovery outside accepted recovery limits



## Sample Log-In Check List

С	lient Name:	PBS	Work O	rder Number:	140904	5
L	ogged by:	Erica Silva	Date Re	ceived:	9/4/2014	4 4:30:00 PM
Cha	ain of Cust	ody				
1.	Is Chain of Cu	ustody complete?	Yes	$\checkmark$	No 🗌	Not Present
2.	How was the	sample delivered?	Clier	<u>nt</u>		
Loc	ı In					
3.	Coolers are p	resent?	Yes	$\checkmark$	No 🗌	
0.						
4.	Shipping cont	ainer/cooler in good condition?	Yes	$\checkmark$	No 🗌	
5.	Custody seals	s intact on shipping container/cooler?	Yes		No 🗌	Not Required 🗹
6.	Was an attem	npt made to cool the samples?	Yes		No 🗌	
7.	Were all coole	ers received at a temperature of >0°C to 10.0°C	Yes		No 🗌	
8.	Sample(s) in	proper container(s)?	Yes		No 🗌	
9.	Sufficient san	nple volume for indicated test(s)?	Yes	$\checkmark$	No 🗌	
10	Are samples	properly preserved?	Yes	$\checkmark$	No 🗌	
11	Was preserva	tive added to bottles?	Yes		No 🔽	NA 🗌
12	Is the headsp	ace in the VOA vials?	Yes		No 🗌	NA 🗹
13	Did all sample	es containers arrive in good condition(unbroken)?	Yes	$\checkmark$	No 🗌	
14	Does paperwo	ork match bottle labels?	Yes	$\checkmark$	No 🗌	
15	Are matrices	correctly identified on Chain of Custody?	Yes		No 🗌	
16	Is it clear wha	t analyses were requested?	Yes		No 🗌	
17	Were all holdi	ing times able to be met?	Yes	$\checkmark$	No 🗌	
Sne	cial Handl	ing (if applicable)				
18	Was client no	tified of all discrepancies with this order?	Yes		No 🗌	NA 🗹
	Person I	Notified: Date:				
	By Who	m: Via:	eMa	il 🗌 Phone	e 🗌 Fax	In Person
	Regardi	ng:				
	Client In	structions:				
19	Additional ren	narks:				

### Item Information

Item #	Temp °C	Condition
Cooler	3.3	Good
Sample	0.0	Good

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Relinguished Date/Time x	* MICINY 914114 163	Sample Disposal: Return to Client - Disposal b	***Anions (Circle): Nitrate Nitrite Chloride Sulfate	** Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutan	10	9	00	7	6	5	1 MWS-15-165914 11385	1275-9.0 914 1127 S	2 MW 6- 12.5-14.0944944 S	1 MWG-10-11.5 914 941 S	Sample Name Sample Time (1	*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Produc	Reports TO (PM): M. NOGE ICE TOM MERCIA	City, State, Zip Sch 10 100 102 Te	client: PPS	3600 Fremont Ave N. Tel: 206-352-3790 Seattle, WA 98103 Fax: 206-352-7178	Analytical	Fremont
vecceived / Date/Time	x my file 1/4/14	Y LBb (A too may be assessed if namples are retained after 30 days.)	Bromide D-Phosphate Fluoride Nitrate+Nitrite	rts TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe							NC X X	oir X X	X X X	Value X	Sample Star 2 (2) (2) (2) (2) (2) (2) (2) (2) (2) (	rt, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water,	Email:	1:206233 9639 Collected by MCAC	Project Name: Masor	Date: 914114 Page:	Laboratory P	
TAT -> SameDay^ NextDay^ 2 Day 3 Day (TD Please coordinate with the lab in advance	lle:30		Special Remarks:	e Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Ti U V Zn											535 545 555 555 555 555 555 555 555 555	r, GW = Ground Water, WW = Waste Water	Project No: 41271,000	than spangs ka, sherton, wA	n County Transportation	of:	Project No (internal): 1409045	Chain of Custody Record



3600 Fremont Ave. N. Seattle, WA 98103 T: (206) 352-3790 F: (206) 352-7178 info@fremontanalytical.com

**PBS Engineering & Environmental** Megan Nogeire 2517 Eastlake Ave, E #100 Seattle, WA 98102

### RE: Mason County Trans. Lab ID: 1409133

September 19, 2014

### **Attention Megan Nogeire:**

Fremont Analytical, Inc. received 7 sample(s) on 9/12/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext. Gasoline by NWTPH-Gx Polyaromatic Hydrocarbons by EPA Method 8270 (SIM) Volatile Organic Compounds by EPA Method 8260

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Chelsea Ward Project Manager



CLIENT: Project: Lab Order:	PBS Engineering & Environmental Mason County Trans. 1409133	Work Order Sample Summary							
Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received						
1409133-001	MW2	09/11/2014 12:25 PM	09/12/2014 1:30 PM						
1409133-002	MW3	09/11/2014 1:50 PM	09/12/2014 1:30 PM						
1409133-003	MW4	09/11/2014 11:15 AM	09/12/2014 1:30 PM						
1409133-004	MW5	09/11/2014 10:25 AM	09/12/2014 1:30 PM						
1409133-005	MW6	09/11/2014 11:55 AM	09/12/2014 1:30 PM						
1409133-006	DUP_9.11.14	09/11/2014 12:00 AM	09/12/2014 1:30 PM						
1409133-007	TB01 (trip blank)	09/11/2014 12:00 AM	09/12/2014 1:30 PM						



**Case Narrative** 

WO#: **1409133** Date: **9/19/2014** 

CLIENT:PBS Engineering & EnvironmentalProject:Mason County Trans.

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

### **III. ANALYSES AND EXCEPTIONS:**

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



WO#: **1409133** Date Reported: **9/19/2014** 

Project:         Mason County Trans.           Lab ID:         1409133-001         Matrix:         Grundwater           Chine Sample ID:         MWZ         Result         RL         Qual         Units         DF         Date Analyzed           Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.         Batch ID:         8720         Analyse:         C           Diesel (Fuel Oil)         ND         50.0         µg/L         1         9/16/2014 2:00:00 PM           Heavy Oil         ND         100         µg/L         1         9/16/2014 2:00:00 PM           Sur:         C-Terphenyl         66.9         50-150         %REC         1         9/16/2014 2:00:00 PM           Sur:         C-Terphenyl         66.9         50-150         %REC         1         9/16/2014 2:00:00 PM           Applithalene         ND         0.100         µg/L         1         9/16/2014 2:00:00 PM           Applithalene         ND         0.100         µg/L         1         9/16/2014 2:00:00 PM           Applithalene         ND         0.100         µg/L         1         9/19/2014           Acenapithylene         ND         0.100         µg/L         1         9/19/2014           Acenapithylene         ND<	Client: PBS Engineering & Environmental			Collection Date: 9/11/2014 12:25:00 PM			
Lab ID:         14/99133-001         Matrix:         Groundwater           Client Sample ID:         MW2         Analyses         Result         RL         Qual         Units         DF         Date Analyzed           Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.         Batch ID:         8720         Analyst: EC           Diesel (Fuel Oil)         ND         50.0         µg/L         1         9/16/2014 2:00:00 PM           Sur: 2-Fluorobiphenyl         66.9         50-150         %REC         1         9/16/2014 2:00:00 PM           Sur: 0-Terphenyl         72.2         50-150         %REC         1         9/16/2014 2:00:00 PM           Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)         Batch ID: 8758         Analyst: DB           Naphthalene         ND         0.100         µg/L         1         9/19/2014           2-Methylnaphthalene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0.100         µg/L         1         9/19/2014           Pre	Project: Mason County Trans.						
Name         Number of the second	Lab ID: 1409133-001				Matrix: G	roundwate	<u>è</u> r
Analyses         Result         RL         Qual         Units         DF         Date Analyzed           Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.         Batch ID: 8720         Analyst: EC           Diesel (Fuel Oil)         ND         50.0         µg/L         1         9/16/2014 2:00:00 PM           Heavy Oil         ND         100         µg/L         1         9/16/2014 2:00:00 PM           Sur: 2-Fluorobiphenyl         66.9         50-150         %REC         1         9/16/2014 2:00:00 PM           Sur: 2-Fluorobiphenyl         72.2         50-150         %REC         1         9/16/2014 2:00:00 PM           Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)         Batch ID: 8758         Analyst: DB           Naphthalene         ND         0.100         µg/L         1         9/19/2014           2-Methylnaphthalene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         N	Client Sample ID: MW2				•		
Naryses         Result         R.E.         Outs         Diese (and Heavy Oil by NWTPH-Dx/Dx Ext.           Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.         Batch ID: 8720         Analyst: EC           Diesel (Fuel Oil)         ND         50.0         µg/L         1         9/16/2014 2:00:00 PM           Batcy Diesel (Fuel Oil)         ND         50.0         µg/L         1         9/16/2014 2:00:00 PM           Surr: 2-Fluorobiphenyl         66.9         50-150         %REC         1         9/16/2014 2:00:00 PM           Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)         Batch ID: 8758         Analyst: DB           Naphthalene         ND         0.100         µg/L         1         9/19/2014           2-Methylnaphthalene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0	Analysos	Posult	DI	Qual	Unite	DE	Dato Analyzod
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.         Batch ID: 8720         Analyst: EC           Diesel (Fuel Oil)         ND         50.0         µg/L         1         9/16/2014 2:00:00 PM           Heavy Oil         ND         100         µg/L         1         9/16/2014 2:00:00 PM           Sur: c-Terphenyl         72.2         50-150         %REC         1         9/16/2014 2:00:00 PM           Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)         Batch ID: 8758         Analyst: DB           Naphthalene         ND         0.100         µg/L         1         9/19/2014           2-Methylnaphthalene         ND         0.100         µg/L         1         9/19/2014           1-Methylnaphthalene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0.100         µg/L         1         9/19/2014           Phenanthrene         ND         0.100         µg/L	Analyses	Result		Quai	Onits	Ы	Date Analyzeu
Diesel (Fuel Cli)         ND         50.0         µg/L         1         9/16/2014 2:00:00 PM           Heavy Oil         ND         100         µg/L         1         9/16/2014 2:00:00 PM           Surr: 2-Fluorobiphenyl         66.9         50-150         %REC         1         9/16/2014 2:00:00 PM           Surr: o-Terphenyl         72.2         50-150         %REC         1         9/16/2014 2:00:00 PM           Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)         Batch ID: 8758         Analyst: DB           Naphthalene         ND         0.100         µg/L         1         9/19/2014           2-Methylnaphthalene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0.100         µg/L         1         9/19/2014           Fluorene         ND         0.100         µg/L         1         9/19/2014           Phenanthrene         ND         0.100         µg/L         1         9/19/2014           Fluoren         ND         0.100         µg/L         1         9/19/2014           Phenanthrene         ND	Diesel and Heavy Oil by NWTP	H-Dx/Dx Ext.			Bato	ch ID: 8720	Analyst: EC
Heavy Oil         ND         100         μg/L         1         9/16/2014 2:00:00 PM           Surr: 2-Fluorobiphenyl         66.9         50-150         %REC         1         9/16/2014 2:00:00 PM           Surr: 0-Terphenyl         72.2         50-150         %REC         1         9/16/2014 2:00:00 PM           Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)         Batch ID: 8758         Analyst: DB           Naphthalene         ND         0.100         μg/L         1         9/19/2014           2-Methylnaphthalene         ND         0.100         μg/L         1         9/19/2014           Acenaphthylene         ND         0.100         μg/L         1         9/19/2014           Acenaphthylene         ND         0.100         μg/L         1         9/19/2014           Acenaphthene         ND         0.100         μg/L         1         9/19/2014           Acenaphthene         ND         0.100         μg/L         1         9/19/2014           Anthracene         ND         0.100         μg/L         1         9/19/2014           Prene         ND         0.100         μg/L         1         9/19/2014           Benzo(a)pianthracene         ND         0.100<	Diesel (Fuel Oil)	ND	50.0		μg/L	1	9/16/2014 2:00:00 PM
Sur: 2-Fluorobiphenyl         66.9         50-150         %REC         1         9/16/2014 2:00:00 PM           Sur: o. Terphenyl         72.2         50-150         %REC         1         9/16/2014 2:00:00 PM           Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)         Batch ID: 8758         Analyst: DB           Naphthalene         ND         0.100         µg/L         1         9/19/2014           2-Methylnaphthalene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0.100         µg/L         1         9/19/2014           Acenaphthene         ND         0.100         µg/L         1         9/19/2014           Picorene         ND         0.100         µg/L         1         9/19/2014           Phenanthrene         ND         0.100         µg/L         1         9/19/2014           Pyrene         ND         0.100         µg/L         1         9/19/2014           Benzo(k)/fuoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(k)/fuoranthene         ND         0.100 </td <td>Heavy Oil</td> <td>ND</td> <td>100</td> <td></td> <td>µg/L</td> <td>1</td> <td>9/16/2014 2:00:00 PM</td>	Heavy Oil	ND	100		µg/L	1	9/16/2014 2:00:00 PM
Sur: o-Terphenyl         72.2         50-150         %REC         1         9/16/2014 2:00:00 PM           Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)         Batch ID: 8758         Analyst: DB           Naphthalene         ND         0.100         µg/L         1         9/19/2014           2-Methylnaphthalene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0.100         µg/L         1         9/19/2014           Acenaphthene         ND         0.100         µg/L         1         9/19/2014           Fluorene         ND         0.100         µg/L         1         9/19/2014           Priorene         ND         0.100         µg/L         1         9/19/2014           Batch Ibere         ND         0.100         µg/L         1         9/19/2014           Berzo(b)fluoranthene         ND         0.100         µg/L	Surr: 2-Fluorobiphenyl	66.9	50-150		%REC	1	9/16/2014 2:00:00 PM
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)         Bath ID: 8758         Analyst: DB           Naphthalene         ND         0.100         µg/L         1         9/19/2014           1-Methylnaphthalene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0.100         µg/L         1         9/19/2014           Acenaphthene         ND         0.100         µg/L         1         9/19/2014           Fluorene         ND         0.100         µg/L         1         9/19/2014           Phenanthrene         ND         0.100         µg/L         1         9/19/2014           Pyrene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(k)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Indeno(1,2,3-cd)pyrene         ND         0.100         µg/L	Surr: o-Terphenyl	72.2	50-150		%REC	1	9/16/2014 2:00:00 PM
Naphthalene         ND         0.100         µg/L         1         9/19/2014           2-Methylnaphthalene         ND         0.100         µg/L         1         9/19/2014           1-Methylnaphthalene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0.100         µg/L         1         9/19/2014           Acenaphthene         ND         0.100         µg/L         1         9/19/2014           Fluorene         ND         0.100         µg/L         1         9/19/2014           Phenanthrene         ND         0.100         µg/L         1         9/19/2014           Anthracene         ND         0.100         µg/L         1         9/19/2014           Fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benz(a)anthracene         ND         0.100         µg/L         1         9/19/2014           Chrysene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Indenci(1,2,3-cd)pyrene         ND         0.100         µ	Polyaromatic Hydrocarbons by	y EPA Method 8	270 (SIM)		Bato	h ID: 8758	Analyst: DB
American         ND         0.100         µg/L         1         9/19/2014           1-Methylnaphthalene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0.100         µg/L         1         9/19/2014           Acenaphthene         ND         0.100         µg/L         1         9/19/2014           Fluorene         ND         0.100         µg/L         1         9/19/2014           Phenanthrene         ND         0.100         µg/L         1         9/19/2014           Anthracene         ND         0.100         µg/L         1         9/19/2014           Fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benza(a)anthracene         ND         0.100         µg/L         1         9/19/2014           Benza(k)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benza(k)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benza(k)fluoranthene         ND         0.100 <td< td=""><td>Naphthalene</td><td>ND</td><td>0 100</td><td></td><td>ua/l</td><td>1</td><td>9/19/2014</td></td<>	Naphthalene	ND	0 100		ua/l	1	9/19/2014
1-Methylnaphthalene         ND         0.100         µg/L         1         9/19/2014           Acenaphthylene         ND         0.100         µg/L         1         9/19/2014           Acenaphthene         ND         0.100         µg/L         1         9/19/2014           Fluorene         ND         0.100         µg/L         1         9/19/2014           Phenanthrene         ND         0.100         µg/L         1         9/19/2014           Anthracene         ND         0.100         µg/L         1         9/19/2014           Fluoranthene         ND         0.100         µg/L         1         9/19/2014           Pyrene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(a)pyrene         ND         0.100         µg/L         1         9/19/2014           Indenci(1,2,3-cd)pyrene         ND         0.100	2-Methylnaphthalene	ND	0.100		ua/L	1	9/19/2014
Accenaphthylene         ND         0.100         µg/L         1         9/19/2014           Accenaphthylene         ND         0.100         µg/L         1         9/19/2014           Fluorene         ND         0.100         µg/L         1         9/19/2014           Phenanthrene         ND         0.100         µg/L         1         9/19/2014           Anthracene         ND         0.100         µg/L         1         9/19/2014           Fluoranthene         ND         0.100         µg/L         1         9/19/2014           Pyrene         ND         0.100         µg/L         1         9/19/2014           Benz(a)anthracene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(a)pyrene         ND         0.100         µg/L         1         9/19/2014           Indeno(1,2,3-cd)pyrene         ND         0.100         µg/L         1         9/19/2014           Dibenz(a,h)anthracene         ND         0.100	1-Methylnaphthalene	ND	0.100		ua/L	1	9/19/2014
Accenaphthene         ND         0.100         µg/L         1         9/19/2014           Fluorene         ND         0.100         µg/L         1         9/19/2014           Phenanthrene         ND         0.100         µg/L         1         9/19/2014           Anthracene         ND         0.100         µg/L         1         9/19/2014           Anthracene         ND         0.100         µg/L         1         9/19/2014           Fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benz(a)anthracene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(a)pyrene         ND         0.100         µg/L         1         9/19/2014           Indeno(1,2,3-cd)pyrene         ND         0.100         µg/L         1         9/19/2014           Diberz(a, h)anthracene         ND         0.100         µg/L         1         9/19/2014           Surr: 2-Fluorobiphenyl         85.4         23.9-	Acenaphthylene	ND	0.100		ua/L	1	9/19/2014
Fluorene         ND         0.100         µg/L         1         9/19/2014           Phenanthrene         ND         0.100         µg/L         1         9/19/2014           Anthracene         ND         0.100         µg/L         1         9/19/2014           Fluoranthene         ND         0.100         µg/L         1         9/19/2014           Pyrene         ND         0.100         µg/L         1         9/19/2014           Benza(a)anthracene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(k)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(a)pyrene         ND         0.100         µg/L         1         9/19/2014           Benzo(k)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(a)pyrene         ND         0.100         µg/L         1         9/19/2014           Sur: 2-Fituorobiphenyl         85.4         23.9-122 <td>Acenaphthene</td> <td>ND</td> <td>0.100</td> <td></td> <td>µg/L</td> <td>1</td> <td>9/19/2014</td>	Acenaphthene	ND	0.100		µg/L	1	9/19/2014
Phenanthrene         ND         0.100         µg/L         1         9/19/2014           Anthracene         ND         0.100         µg/L         1         9/19/2014           Fluoranthene         ND         0.100         µg/L         1         9/19/2014           Pyrene         ND         0.100         µg/L         1         9/19/2014           Benz(a)anthracene         ND         0.100         µg/L         1         9/19/2014           Chrysene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(a)pyrene         ND         0.100         µg/L         1         9/19/2014           Benzo(a)pyrene         ND         0.100         µg/L         1         9/19/2014           Indeno(1,2,3-cd)pyrene         ND         0.100         µg/L         1         9/19/2014           Dibenz(a,h)anthracene         ND         0.100         µg/L         1         9/19/2014           Surr: 2-Fluorobiphenyl         85.4         23.9-122         %REC         1         9/19/2014           Surr: Terphenyl-d14         107         33.4-1	Fluorene	ND	0.100		µg/L	1	9/19/2014
Anthracene         ND         0.100         µg/L         1         9/19/2014           Fluoranthene         ND         0.100         µg/L         1         9/19/2014           Pyrene         ND         0.100         µg/L         1         9/19/2014           Benz(a)anthracene         ND         0.100         µg/L         1         9/19/2014           Chrysene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(k)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(a)pyrene         ND         0.100         µg/L         1         9/19/2014           Indeno(1,2,3-cd)pyrene         ND         0.100         µg/L         1         9/19/2014           Indeno(1,2,3-cd)pyrene         ND         0.100         µg/L         1         9/19/2014           Benzo(g,h,i)perylene         ND         0.100         µg/L         1         9/19/2014           Surr: 2-Fluorobiphenyl         85.4         23.9-122         %REC         1         9/19/2014           Surr: Terphenyl-d14         107	Phenanthrene	ND	0.100		µg/L	1	9/19/2014
Fluoranthene         ND         0.100         µg/L         1         9/19/2014           Pyrene         ND         0.100         µg/L         1         9/19/2014           Benz(a)anthracene         ND         0.100         µg/L         1         9/19/2014           Chrysene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(k)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(a)pyrene         ND         0.100         µg/L         1         9/19/2014           Indeno(1,2,3-cd)pyrene         ND         0.100         µg/L         1         9/19/2014           Dibenz(a,h)anthracene         ND         0.100         µg/L         1         9/19/2014           Surr: 2-Fluorobiphenyl         85.4         23.9-122         %REC         1         9/19/2014           Surr: Terphenyl-d14         107         3.3.4-135         %REC         1         9/19/2014           Gasoline         ND         50.0         µg/L         1         9/16/2014         10.35:00 PM           Surr: 4-Bromofluorob	Anthracene	ND	0.100		µg/L	1	9/19/2014
Pyrene         ND         0.100         µg/L         1         9/19/2014           Benz(a)anthracene         ND         0.100         µg/L         1         9/19/2014           Chrysene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(k)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(a)pyrene         ND         0.100         µg/L         1         9/19/2014           Benzo(a)pyrene         ND         0.100         µg/L         1         9/19/2014           Indeno(1,2,3-cd)pyrene         ND         0.100         µg/L         1         9/19/2014           Dibenz(a,h)anthracene         ND         0.100         µg/L         1         9/19/2014           Surr: 2-Fluorobiphenyl         85.4         23.9-122         %REC         1         9/19/2014           Surr: Terphenyl-d14         107         33.4-135         %REC         1         9/19/2014           Gasoline         ND         50.0         µg/L         1         9/16/2014 10:35:00 PM           Surr: 4-Bromofluorobenzene	Fluoranthene	ND	0.100		µg/L	1	9/19/2014
Benz(a)anthracene         ND         0.100         µg/L         1         9/19/2014           Chrysene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(k)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(a)pyrene         ND         0.100         µg/L         1         9/19/2014           Indeno(1,2,3-cd)pyrene         ND         0.100         µg/L         1         9/19/2014           Dibenz(a,h)anthracene         ND         0.100         µg/L         1         9/19/2014           Benzo(g,h,i)perylene         ND         0.100         µg/L         1         9/19/2014           Surr: 2-Fluorobiphenyl         85.4         23.9-122         %REC         1         9/19/2014           Surr: Terphenyl-d14         107         33.4-135         %REC         1         9/19/2014           Gasoline         ND         50.0         µg/L         1         9/16/2014 10:35:00 PM           Surr: 4-Bromofluorobenzene         104         65-135         %REC         1         9/16/2014 10:35:00 PM	Pyrene	ND	0.100		µg/L	1	9/19/2014
Chrysene         ND         0.100         µg/L         1         9/19/2014           Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(k)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(a)pyrene         ND         0.100         µg/L         1         9/19/2014           Indeno(1,2,3-cd)pyrene         ND         0.100         µg/L         1         9/19/2014           Dibenz(a,h)anthracene         ND         0.100         µg/L         1         9/19/2014           Benzo(g,h,i)perylene         ND         0.100         µg/L         1         9/19/2014           Surr: 2-Fluorobiphenyl         85.4         23.9-122         %REC         1         9/19/2014           Surr: Terphenyl-d14         107         33.4-135         %REC         1         9/19/2014           Gasoline         ND         50.0         µg/L         1         9/16/2014         10:35:00 PM           Surr: 4-Bromofluorobenzene         104         65-135         %REC         1         9/16/2014         10:35:00 PM           Surr: Toluene-d8         98.4         65-135         %REC         1         9/16/2	Benz(a)anthracene	ND	0.100		µg/L	1	9/19/2014
Benzo(b)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(k)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(a)pyrene         ND         0.100         µg/L         1         9/19/2014           Indeno(1,2,3-cd)pyrene         ND         0.100         µg/L         1         9/19/2014           Dibenz(a,h)anthracene         ND         0.100         µg/L         1         9/19/2014           Benzo(g,h,i)perylene         ND         0.100         µg/L         1         9/19/2014           Surr: 2-Fluorobiphenyl         85.4         23.9-122         %REC         1         9/19/2014           Surr: Terphenyl-d14         107         33.4-135         %REC         1         9/19/2014           Gasoline         ND         50.0         µg/L         1         9/16/2014         10:35:00 PM           Surr: 4-Bromofluorobenzene         104         65-135         %REC         1         9/16/2014         10:35:00 PM           Surr: Toluene-d8         98.4         65-135         %REC         1         9/16/2014         10:35:00 PM	Chrysene	ND	0.100		µg/L	1	9/19/2014
Benzo(k)fluoranthene         ND         0.100         µg/L         1         9/19/2014           Benzo(a)pyrene         ND         0.100         µg/L         1         9/19/2014           Indeno(1,2,3-cd)pyrene         ND         0.100         µg/L         1         9/19/2014           Dibenz(a,h)anthracene         ND         0.100         µg/L         1         9/19/2014           Benzo(g,h,i)perylene         ND         0.100         µg/L         1         9/19/2014           Surr: 2-Fluorobiphenyl         85.4         23.9-122         %REC         1         9/19/2014           Surr: 7erphenyl-d14         107         33.4-135         %REC         1         9/19/2014           Gasoline         ND         50.0         µg/L         1         9/19/2014           Gasoline         ND         50.0         µg/L         1         9/19/2014           Surr: 4-Bromofluorobenzene         104         65-135         %REC         1         9/16/2014         10:35:00 PM           Surr: Toluene-d8         98.4         65-135         %REC         1         9/16/2014         10:35:00 PM	Benzo(b)fluoranthene	ND	0.100		µg/L	1	9/19/2014
Benzo(a)pyrene       ND       0.100       µg/L       1       9/19/2014         Indeno(1,2,3-cd)pyrene       ND       0.100       µg/L       1       9/19/2014         Dibenz(a,h)anthracene       ND       0.100       µg/L       1       9/19/2014         Benzo(g,h,i)perylene       ND       0.100       µg/L       1       9/19/2014         Surr: 2-Fluorobiphenyl       85.4       23.9-122       %REC       1       9/19/2014         Surr: Terphenyl-d14       107       33.4-135       %REC       1       9/19/2014         Gasoline       ND       50.0       µg/L       1       9/16/2014       10:35:00 PM         Surr: 4-Bromofluorobenzene       104       65-135       %REC       1       9/16/2014       10:35:00 PM         Surr: Toluene-d8       98.4       65-135       %REC       1       9/16/2014       10:35:00 PM	Benzo(k)fluoranthene	ND	0.100		µg/L	1	9/19/2014
Indeno(1,2,3-cd)pyrene       ND       0.100       µg/L       1       9/19/2014         Dibenz(a,h)anthracene       ND       0.100       µg/L       1       9/19/2014         Benzo(g,h,i)perylene       ND       0.100       µg/L       1       9/19/2014         Surr: 2-Fluorobiphenyl       85.4       23.9-122       %REC       1       9/19/2014         Surr: Terphenyl-d14       107       33.4-135       %REC       1       9/19/2014         Gasoline       NWTPH-Gx       Batch ID: R16806       Analyst: BC         Gasoline       ND       50.0       µg/L       1       9/16/2014 10:35:00 PM         Surr: 4-Bromofluorobenzene       104       65-135       %REC       1       9/16/2014 10:35:00 PM         Surr: Toluene-d8       98.4       65-135       %REC       1       9/16/2014 10:35:00 PM	Benzo(a)pyrene	ND	0.100		µg/L	1	9/19/2014
Dibenz(a,h)anthracene         ND         0.100         µg/L         1         9/19/2014           Benzo(g,h,i)perylene         ND         0.100         µg/L         1         9/19/2014           Surr: 2-Fluorobiphenyl         85.4         23.9-122         %REC         1         9/19/2014           Surr: Terphenyl-d14         107         33.4-135         %REC         1         9/19/2014           Gasoline by NWTPH-Gx         Batch ID: R16806         Analyst: BC           Gasoline         ND         50.0         µg/L         1         9/16/2014 10:35:00 PM           Surr: 4-Bromofluorobenzene         104         65-135         %REC         1         9/16/2014 10:35:00 PM           Surr: Toluene-d8         98.4         65-135         %REC         1         9/16/2014 10:35:00 PM	Indeno(1,2,3-cd)pyrene	ND	0.100		µg/L	1	9/19/2014
Benzo(g,h,i)perylene       ND       0.100       µg/L       1       9/19/2014         Surr: 2-Fluorobiphenyl       85.4       23.9-122       %REC       1       9/19/2014         Surr: Terphenyl-d14       107       33.4-135       %REC       1       9/19/2014         Gasoline by NWTPH-Gx       ND       50.0       µg/L       1       9/16/2014 10:35:00 PM         Gasoline       ND       50.0       µg/L       1       9/16/2014 10:35:00 PM         Surr: 4-Bromofluorobenzene       104       65-135       %REC       1       9/16/2014 10:35:00 PM         Surr: Toluene-d8       98.4       65-135       %REC       1       9/16/2014 10:35:00 PM	Dibenz(a,h)anthracene	ND	0.100		µg/L	1	9/19/2014
Surr: 2-Fluorobiphenyl       85.4       23.9-122       %REC       1       9/19/2014         Surr: Terphenyl-d14       107       33.4-135       %REC       1       9/19/2014         Gasoline by NWTPH-Gx       Batch ID: R16806       Analyst: BC         Gasoline       ND       50.0       µg/L       1       9/16/2014 10:35:00 PM         Surr: 4-Bromofluorobenzene       104       65-135       %REC       1       9/16/2014 10:35:00 PM         Surr: Toluene-d8       98.4       65-135       %REC       1       9/16/2014 10:35:00 PM	Benzo(g,h,i)perylene	ND	0.100		µg/L	1	9/19/2014
Surr: Terphenyl-d14       107       33.4-135       %REC       1       9/19/2014         Gasoline by NWTPH-Gx       Batch ID: R16806       Analyst: BC         Gasoline       ND       50.0       µg/L       1       9/16/2014 10:35:00 PM         Surr: 4-Bromofluorobenzene       104       65-135       %REC       1       9/16/2014 10:35:00 PM         Surr: Toluene-d8       98.4       65-135       %REC       1       9/16/2014 10:35:00 PM	Surr: 2-Fluorobiphenyl	85.4	23.9-122		%REC	1	9/19/2014
Gasoline by NWTPH-Gx         Batch ID: R16806         Analyst: BC           Gasoline         ND         50.0         µg/L         1         9/16/2014 10:35:00 PM           Surr: 4-Bromofluorobenzene         104         65-135         %REC         1         9/16/2014 10:35:00 PM           Surr: Toluene-d8         98.4         65-135         %REC         1         9/16/2014 10:35:00 PM	Surr: Terphenyl-d14	107	33.4-135		%REC	1	9/19/2014
GasolineND50.0μg/L19/16/2014 10:35:00 PMSurr: 4-Bromofluorobenzene10465-135%REC19/16/2014 10:35:00 PMSurr: Toluene-d898.465-135%REC19/16/2014 10:35:00 PM	Gasoline by NWTPH-Gx				Bato	ch ID: R168	06 Analyst: BC
Surr: 4-Bromofluorobenzene         104         65-135         %REC         1         9/16/2014 10:35:00 PM           Surr: Toluene-d8         98.4         65-135         %REC         1         9/16/2014 10:35:00 PM	Gasoline	ND	50.0		µg/L	1	9/16/2014 10:35:00 PM
Surr: Toluene-d8         98.4         65-135         %REC         1         9/16/2014 10:35:00 PM	Surr: 4-Bromofluorobenzene	104	65-135		%REC	1	9/16/2014 10:35:00 PM
	Surr: Toluene-d8	98.4	65-135		%REC	1	9/16/2014 10:35:00 PM

Qualifiers: B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

RL Reporting Limit

D Dilution was required

H Holding times for preparation or analysis exceeded

ND Not detected at the Reporting Limit



WO#: **1409133** Date Reported: **9/19/2014** 

Client: PBS Engineering & Envir	ronmental	Collection Date: 9/11/2014 12:25:00				9/11/2014 12:25:00 PM
Project: Mason County Trans.						
Lab ID: 1409133-001				Matrix: G	roundw	ater
Client Sample ID: MW2						
Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by	EPA Method	<u>8260</u>		Batc	h ID: R′	16798 Analyst: EM
Benzene	ND	1.00		µg/L	1	9/16/2014 10:35:00 PM
Toluene	ND	1.00		µg/L	1	9/16/2014 10:35:00 PM
Ethylbenzene	ND	1.00		µg/L	1	9/16/2014 10:35:00 PM
m,p-Xylene	ND	1.00		µg/L	1	9/16/2014 10:35:00 PM
o-Xylene	ND	1.00		µg/L	1	9/16/2014 10:35:00 PM
Surr: Dibromofluoromethane	100	61.7-130		%REC	1	9/16/2014 10:35:00 PM
Surr: Toluene-d8	97.0	40.1-139		%REC	1	9/16/2014 10:35:00 PM
Surr: 1-Bromo-4-fluorobenzene	102	68.2-127		%REC	1	9/16/2014 10:35:00 PM

Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

RL Reporting Limit

- D Dilution was required
- H Holding times for preparation or analysis exceeded
- ND Not detected at the Reporting Limit



WO#: **1409133** Date Reported: **9/19/2014** 

Client: PBS Engineering & Environmental			Collection Date: 9/11/2014 1:50:00 PM			
Project:         Mason County Trans.           Lab ID:         1409133-002				Matrix: G	roundwate	er
Client Sample ID: MW3 Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTP	<u>'H-Dx/Dx Ext.</u>			Bato	h ID: 8720	Analyst: EC
Diesel (Fuel Oil)	ND	50.0		μg/L	1	9/16/2014 2:31:00 PM
Heavy Oil	ND	100		µg/L	1	9/16/2014 2:31:00 PM
Surr: 2-Fluorobiphenyl	69.8	50-150		%REC	1	9/16/2014 2:31:00 PM
Surr: o-Terphenyl	74.7	50-150		%REC	1	9/16/2014 2:31:00 PM
Polyaromatic Hydrocarbons by	y EPA Method 8	270 (SIM)		Bato	h ID: 8758	Analyst: DB
Nanhthalene	ND	0 100		ua/l	1	9/19/2014 12·24·00 AM
2-Methylnaphthalene	ND	0 100		µg/=	1	9/19/2014 12:24:00 AM
1-Methylnaphthalene	ND	0 100		µg/=	1	9/19/2014 12:24:00 AM
Acenaphthylene	ND	0.100		ua/L	1	9/19/2014 12:24:00 AM
Acenaphthene	ND	0.100		ua/L	1	9/19/2014 12:24:00 AM
Fluorene	ND	0 100		µg/=	1	9/19/2014 12:24:00 AM
Phenanthrene	ND	0.100		ua/L	1	9/19/2014 12:24:00 AM
Anthracene	ND	0.100		ua/L	1	9/19/2014 12:24:00 AM
Fluoranthene	ND	0.100		ua/L	1	9/19/2014 12:24:00 AM
Pvrene	ND	0.100		ua/L	1	9/19/2014 12:24:00 AM
Benz(a)anthracene	ND	0.100		ua/L	1	9/19/2014 12:24:00 AM
Chrysene	ND	0.100		µg/L	1	9/19/2014 12:24:00 AM
Benzo(b)fluoranthene	ND	0.100		µg/L	1	9/19/2014 12:24:00 AM
Benzo(k)fluoranthene	ND	0.100		µg/L	1	9/19/2014 12:24:00 AM
Benzo(a)pyrene	ND	0.100		µg/L	1	9/19/2014 12:24:00 AM
Indeno(1,2,3-cd)pyrene	ND	0.100		µg/L	1	9/19/2014 12:24:00 AM
Dibenz(a,h)anthracene	ND	0.100		µg/L	1	9/19/2014 12:24:00 AM
Benzo(g,h,i)perylene	ND	0.100		µg/L	1	9/19/2014 12:24:00 AM
Surr: 2-Fluorobiphenyl	82.1	23.9-122		%REC	1	9/19/2014 12:24:00 AM
Surr: Terphenyl-d14	107	33.4-135		%REC	1	9/19/2014 12:24:00 AM
Gasoline by NWTPH-Gx				Bato	h ID: R168	06 Analyst: BC
Gasoline	ND	50.0		ua/l	1	9/16/2014 11:31:00 PM
Surr: 4-Bromofluorobenzene	102	65-135		%RFC	1	9/16/2014 11:31:00 PM
Surr: Toluene-d8	101	65-135		%REC	1	9/16/2014 11:31:00 PM

Qualifiers: B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

RL Reporting Limit

D Dilution was required

H Holding times for preparation or analysis exceeded

ND Not detected at the Reporting Limit



WO#: **1409133** Date Reported: **9/19/2014** 

Client: PBS Engineering & Envi	ronmental	Collection Date: 9/11/2014 1:50:00 F						
Project: Mason County Trans.								
Lab ID: 1409133-002	Matrix: Groundwater							
Client Sample ID: MW3								
Analyses	Result	RL	Qual	Units	DF	Date Analyzed		
Volatile Organic Compounds by	/ EPA Method	<u>8260</u>		Batc	h ID: R′	16798 Analyst: EM		
Benzene	ND	1.00		μg/L	1	9/16/2014 11:31:00 PM		
Toluene	ND	1.00		µg/L	1	9/16/2014 11:31:00 PM		
Ethylbenzene	ND	1.00		µg/L	1	9/16/2014 11:31:00 PM		
m,p-Xylene	ND	1.00		µg/L	1	9/16/2014 11:31:00 PM		
o-Xylene	ND	1.00		µg/L	1	9/16/2014 11:31:00 PM		
Surr: Dibromofluoromethane	101	61.7-130		%REC	1	9/16/2014 11:31:00 PM		
Surr: Toluene-d8	99.0	40.1-139		%REC	1	9/16/2014 11:31:00 PM		
Surr: 1-Bromo-4-fluorobenzene	101	68.2-127		%REC	1	9/16/2014 11:31:00 PM		

Qualifiers:

В

Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

- D Dilution was required
- H Holding times for preparation or analysis exceeded
- ND Not detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits



WO#: **1409133** Date Reported: **9/19/2014** 

Client: PBS Engineering & Environmental			Collection Date: 9/11/2014 11:15:00 AM			
Lab ID: 1409133-003				Matrix: G	roundwate	er
Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTP	H-Dx/Dx Ext.			Bato	h ID: 8720	Analyst: EC
Diesel (Fuel Oil)	ND	50.0		μg/L	1	9/16/2014 5:12:00 PM
Heavy Oil	ND	100		µg/L	1	9/16/2014 5:12:00 PM
Surr: 2-Fluorobiphenyl	62.9	50-150		%REC	1	9/16/2014 5:12:00 PM
Surr: o-Terphenyl	71.0	50-150		%REC	1	9/16/2014 5:12:00 PM
Polyaromatic Hydrocarbons by	y EPA Method 8	270 (SIM)		Bato	h ID: 8758	Analyst: DB
Naphthalene	ND	0.100		ua/L	1	9/19/2014 12:48:00 AM
2-Methylnaphthalene	ND	0.100		ua/L	1	9/19/2014 12:48:00 AM
1-Methylnaphthalene	ND	0.100		ua/L	1	9/19/2014 12:48:00 AM
Acenaphthylene	ND	0.100		ua/L	1	9/19/2014 12:48:00 AM
Acenaphthene	ND	0.100		µg/L	1	9/19/2014 12:48:00 AM
Fluorene	ND	0.100		µg/L	1	9/19/2014 12:48:00 AM
Phenanthrene	ND	0.100		µg/L	1	9/19/2014 12:48:00 AM
Anthracene	ND	0.100		µg/L	1	9/19/2014 12:48:00 AM
Fluoranthene	ND	0.100		µg/L	1	9/19/2014 12:48:00 AM
Pyrene	ND	0.100		µg/L	1	9/19/2014 12:48:00 AM
Benz(a)anthracene	ND	0.100		µg/L	1	9/19/2014 12:48:00 AM
Chrysene	ND	0.100		µg/L	1	9/19/2014 12:48:00 AM
Benzo(b)fluoranthene	ND	0.100		µg/L	1	9/19/2014 12:48:00 AM
Benzo(k)fluoranthene	ND	0.100		µg/L	1	9/19/2014 12:48:00 AM
Benzo(a)pyrene	ND	0.100		µg/L	1	9/19/2014 12:48:00 AM
Indeno(1,2,3-cd)pyrene	ND	0.100		µg/L	1	9/19/2014 12:48:00 AM
Dibenz(a,h)anthracene	ND	0.100		µg/L	1	9/19/2014 12:48:00 AM
Benzo(g,h,i)perylene	ND	0.100		µg/L	1	9/19/2014 12:48:00 AM
Surr: 2-Fluorobiphenyl	85.8	23.9-122		%REC	1	9/19/2014 12:48:00 AM
Surr: Terphenyl-d14	101	33.4-135		%REC	1	9/19/2014 12:48:00 AM
Gasoline by NWTPH-Gx				Bato	h ID: R168	06 Analyst: BC
Gasoline	ND	50.0		ua/l	1	9/16/2014 11:59:00 PM
Surr: 4-Bromofluorobenzene	104	65-135		%RFC	1	9/16/2014 11:59:00 PM
Surr: Toluene-d8	102	65-135		%REC	1	9/16/2014 11:59:00 PM

Qualifiers: B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

RL Reporting Limit

D Dilution was required

H Holding times for preparation or analysis exceeded

ND Not detected at the Reporting Limit



WO#: **1409133** Date Reported: **9/19/2014** 

Client: PBS Engineering & Envi	ronmental	ental <b>Collection Date:</b> 9/11/2014 11:15:0				4 11:15:00 AM		
Project: Mason County Trans.								
Lab ID: 1409133-003	Matrix: Groundwater							
Client Sample ID: MW4								
Analyses	Result	RL	Qual	Units	DF	Dat	e Analyzed	
Volatile Organic Compounds by	EPA Method	<u>8260</u>		Batc	h ID: R1	16798	Analyst: EM	
Benzene	ND	1.00		µg/L	1	9/16/2	014 11:59:00 PM	
Toluene	ND	1.00		µg/L	1	9/16/2	014 11:59:00 PM	
Ethylbenzene	ND	1.00		µg/L	1	9/16/2	014 11:59:00 PM	
m,p-Xylene	ND	1.00		µg/L	1	9/16/2	014 11:59:00 PM	
o-Xylene	ND	1.00		µg/L	1	9/16/2	014 11:59:00 PM	
Surr: Dibromofluoromethane	101	61.7-130		%REC	1	9/16/2	014 11:59:00 PM	
Surr: Toluene-d8	101	40.1-139		%REC	1	9/16/2	014 11:59:00 PM	
Surr: 1-Bromo-4-fluorobenzene	102	68.2-127		%REC	1	9/16/2	014 11:59:00 PM	

Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

RL Reporting Limit

- D Dilution was required
- H Holding times for preparation or analysis exceeded
- ND Not detected at the Reporting Limit



WO#: **1409133** Date Reported: **9/19/2014** 

Client: PBS Engineering & Environmental				Collection Date: 9/11/2014 10:25:00 AM			
Project: Mason County Trans.				Matrix: G	roundwate	ar	
Client Sample ID: MW/5					Tounuwate	51	
	Descrift		0	11	DE		
Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
Diesel and Heavy Oil by NWTP	H-Dx/Dx Ext.			Bato	h ID: 8720	Analyst: EC	
Diesel (Fuel Oil)	ND	50.0		µg/L	1	9/16/2014 4:11:00 PM	
Heavy Oil	ND	100		µg/L	1	9/16/2014 4:11:00 PM	
Surr: 2-Fluorobiphenyl	67.6	50-150		%REC	1	9/16/2014 4:11:00 PM	
Surr: o-Terphenyl	71.5	50-150		%REC	1	9/16/2014 4:11:00 PM	
Polyaromatic Hydrocarbons by	y EPA Method 8	270 (SIM)		Bato	h ID: 8758	Analyst: DB	
Naphthalene	ND	0.100		ua/L	1	9/19/2014 1:12:00 AM	
2-Methylnaphthalene	ND	0.100		ua/L	1	9/19/2014 1:12:00 AM	
1-Methylnaphthalene	ND	0.100		ua/L	1	9/19/2014 1:12:00 AM	
Acenaphthylene	ND	0.100		ua/L	1	9/19/2014 1:12:00 AM	
Acenaphthene	ND	0.100		µg/L	1	9/19/2014 1:12:00 AM	
Fluorene	ND	0.100		µg/L	1	9/19/2014 1:12:00 AM	
Phenanthrene	ND	0.100		µg/L	1	9/19/2014 1:12:00 AM	
Anthracene	ND	0.100		µg/L	1	9/19/2014 1:12:00 AM	
Fluoranthene	ND	0.100		µg/L	1	9/19/2014 1:12:00 AM	
Pyrene	ND	0.100		µg/L	1	9/19/2014 1:12:00 AM	
Benz(a)anthracene	ND	0.100		µg/L	1	9/19/2014 1:12:00 AM	
Chrysene	ND	0.100		µg/L	1	9/19/2014 1:12:00 AM	
Benzo(b)fluoranthene	ND	0.100		µg/L	1	9/19/2014 1:12:00 AM	
Benzo(k)fluoranthene	ND	0.100		µg/L	1	9/19/2014 1:12:00 AM	
Benzo(a)pyrene	ND	0.100		µg/L	1	9/19/2014 1:12:00 AM	
Indeno(1,2,3-cd)pyrene	ND	0.100		µg/L	1	9/19/2014 1:12:00 AM	
Dibenz(a,h)anthracene	ND	0.100		µg/L	1	9/19/2014 1:12:00 AM	
Benzo(g,h,i)perylene	ND	0.100		µg/L	1	9/19/2014 1:12:00 AM	
Surr: 2-Fluorobiphenyl	62.3	23.9-122		%REC	1	9/19/2014 1:12:00 AM	
Surr: Terphenyl-d14	90.1	33.4-135		%REC	1	9/19/2014 1:12:00 AM	
Gasoline by NWTPH-Gx				Bato	h ID: R168	06 Analyst: BC	
Gasoline	ND	50.0		µa/L	1	9/17/2014 12:27:00 AM	
Surr: 4-Bromofluorobenzene	102	65-135		%REC	1	9/17/2014 12:27:00 AM	
Surr: Toluene-d8	101	65-135		%REC	1	9/17/2014 12:27:00 AM	

Qualifiers: B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

RL Reporting Limit

- D Dilution was required
- H Holding times for preparation or analysis exceeded

ND Not detected at the Reporting Limit



WO#: **1409133** Date Reported: **9/19/2014** 

Client: PBS Engineering & Envi	ronmental	Collection Date: 9/11/2014 10:25:00 /						
Project: Mason County Trans.								
Lab ID: 1409133-004	Matrix: Groundwater							
Client Sample ID: MW5								
Analyses	Result	RL	Qual	Units	DF	Date Analyzed		
Volatile Organic Compounds by	EPA Method	<u>8260</u>		Bato	h ID: R′	16798 Analyst: EM		
Benzene	ND	1.00		µg/L	1	9/17/2014 12:27:00 AM		
Toluene	ND	1.00		µg/L	1	9/17/2014 12:27:00 AM		
Ethylbenzene	ND	1.00		µg/L	1	9/17/2014 12:27:00 AM		
m,p-Xylene	ND	1.00		µg/L	1	9/17/2014 12:27:00 AM		
o-Xylene	ND	1.00		µg/L	1	9/17/2014 12:27:00 AM		
Surr: Dibromofluoromethane	97.1	61.7-130		%REC	1	9/17/2014 12:27:00 AM		
Surr: Toluene-d8	98.0	40.1-139		%REC	1	9/17/2014 12:27:00 AM		
Surr: 1-Bromo-4-fluorobenzene	100	68.2-127		%REC	1	9/17/2014 12:27:00 AM		

Qualifiers:

В

Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

- D Dilution was required
- H Holding times for preparation or analysis exceeded
- ND Not detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits



WO#: **1409133** Date Reported: **9/19/2014** 

Client: PBS Engineering & Environmental				Collection Date: 9/11/2014 11:55:00 AM			
Project: Mason County Trans.				Matrix: C	roundwate	)r	
Client Sample ID: MW6					Tounuwald	51	
	<b>.</b>		<b>•</b> •		55		
Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
Diesel and Heavy Oil by NWTP	<u>H-Dx/Dx Ext.</u>			Batc	h ID: 8720	Analyst: EC	
Diesel (Fuel Oil)	ND	50.0		μg/L	1	9/16/2014 4:41:00 PM	
Heavy Oil	ND	100		µg/L	1	9/16/2014 4:41:00 PM	
Surr: 2-Fluorobiphenyl	63.3	50-150		%REC	1	9/16/2014 4:41:00 PM	
Surr: o-Terphenyl	67.8	50-150		%REC	1	9/16/2014 4:41:00 PM	
Polyaromatic Hydrocarbons by	/ EPA Method 8	<u>270 (SIM)</u>		Bato	h ID: 8758	Analyst: DB	
Naphthalene	ND	0 100		ua/l	1	9/19/2014 1:35:00 AM	
2-Methylnaphthalene	ND	0.100		ua/L	1	9/19/2014 1:35:00 AM	
1-Methylnaphthalene	ND	0.100		ua/L	1	9/19/2014 1:35:00 AM	
Acenaphthylene	ND	0.100		ua/L	1	9/19/2014 1:35:00 AM	
Acenaphthene	ND	0.100		µg/L	1	9/19/2014 1:35:00 AM	
Fluorene	ND	0.100		µg/L	1	9/19/2014 1:35:00 AM	
Phenanthrene	ND	0.100		µg/L	1	9/19/2014 1:35:00 AM	
Anthracene	ND	0.100		µg/L	1	9/19/2014 1:35:00 AM	
Fluoranthene	ND	0.100		µg/L	1	9/19/2014 1:35:00 AM	
Pyrene	ND	0.100		µg/L	1	9/19/2014 1:35:00 AM	
Benz(a)anthracene	ND	0.100		µg/L	1	9/19/2014 1:35:00 AM	
Chrysene	ND	0.100		µg/L	1	9/19/2014 1:35:00 AM	
Benzo(b)fluoranthene	ND	0.100		µg/L	1	9/19/2014 1:35:00 AM	
Benzo(k)fluoranthene	ND	0.100		µg/L	1	9/19/2014 1:35:00 AM	
Benzo(a)pyrene	ND	0.100		µg/L	1	9/19/2014 1:35:00 AM	
Indeno(1,2,3-cd)pyrene	ND	0.100		µg/L	1	9/19/2014 1:35:00 AM	
Dibenz(a,h)anthracene	ND	0.100		µg/L	1	9/19/2014 1:35:00 AM	
Benzo(g,h,i)perylene	ND	0.100		µg/L	1	9/19/2014 1:35:00 AM	
Surr: 2-Fluorobiphenyl	94.3	23.9-122		%REC	1	9/19/2014 1:35:00 AM	
Surr: Terphenyl-d14	112	33.4-135		%REC	1	9/19/2014 1:35:00 AM	
Gasoline by NWTPH-Gx				Bato	h ID: R168	06 Analyst: BC	
Gasoline	ND	50.0		ua/L	1	9/17/2014 12:55:00 AM	
Surr: 4-Bromofluorobenzene	101	65-135		%REC	1	9/17/2014 12:55:00 AM	
Surr: Toluene-d8	100	65-135		%REC	1	9/17/2014 12:55:00 AM	

Qualifiers: B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

RL Reporting Limit

D Dilution was required

H Holding times for preparation or analysis exceeded

ND Not detected at the Reporting Limit



WO#: **1409133** Date Reported: **9/19/2014** 

Client: PBS Engineering & Envir	ronmental	Collection Date: 9/11/2014 11:55:00				9/11/2014 11:55:00 AM
Project: Mason County Trans.						
Lab ID: 1409133-005				Matrix: G	roundw	ater
Client Sample ID: MW6						
Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by	EPA Method	<u>8260</u>		Batc	h ID: R1	16798 Analyst: EM
Benzene	ND	1.00		µg/L	1	9/17/2014 12:55:00 AM
Toluene	ND	1.00		µg/L	1	9/17/2014 12:55:00 AM
Ethylbenzene	ND	1.00		µg/L	1	9/17/2014 12:55:00 AM
m,p-Xylene	ND	1.00		µg/L	1	9/17/2014 12:55:00 AM
o-Xylene	ND	1.00		µg/L	1	9/17/2014 12:55:00 AM
Surr: Dibromofluoromethane	98.3	61.7-130		%REC	1	9/17/2014 12:55:00 AM
Surr: Toluene-d8	97.7	40.1-139		%REC	1	9/17/2014 12:55:00 AM
Surr: 1-Bromo-4-fluorobenzene	99.1	68.2-127		%REC	1	9/17/2014 12:55:00 AM

Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

- D Dilution was required
- H Holding times for preparation or analysis exceeded
- ND Not detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits



WO#: **1409133** Date Reported: **9/19/2014** 

Client: PBS Engineering & Envir	onmental		<b>Collection Date:</b> 9/11/2014					
Project: Mason County Trans.								
Lab ID: 1409133-006		Matrix: Groundwater						
Client Sample ID: DUP_9.11.14								
Analyses	Result	RL	Qual	Units	DF	Date Analyzed		
Volatile Organic Compounds by	EPA Method	<u>8260</u>		Batc	h ID: R′	16798 Analyst: EM		
Benzene	ND	1.00		µg/L	1	9/17/2014 1:23:00 AM		
Toluene	ND	1.00		µg/L	1	9/17/2014 1:23:00 AM		
Ethylbenzene	ND	1.00		µg/L	1	9/17/2014 1:23:00 AM		
m,p-Xylene	ND	1.00		µg/L	1	9/17/2014 1:23:00 AM		
o-Xylene	ND	1.00		µg/L	1	9/17/2014 1:23:00 AM		
Surr: Dibromofluoromethane	99.1	61.7-130		%REC	1	9/17/2014 1:23:00 AM		
Surr: Toluene-d8	101	40.1-139		%REC	1	9/17/2014 1:23:00 AM		
Surr: 1-Bromo-4-fluorobenzene	99.2	68.2-127		%REC	1	9/17/2014 1:23:00 AM		

Qualifiers:

В

Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

- D Dilution was required
- H Holding times for preparation or analysis exceeded
- ND Not detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits



WO#: **1409133** Date Reported: **9/19/2014** 

Client: PBS Engineering & Enviro	nmental	Collection Date: 9/11/2014				9/11/2014
Project: Mason County Trans.						
Lab ID: 1409133-007				Matrix: G	roundw	ater
Client Sample ID: TB01 (trip blank	)					
Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by I	EPA Method	<u>8260</u>		Batc	h ID: R	16798 Analyst: EM
Benzene	ND	1.00		μg/L	1	9/16/2014 10:07:00 PM
Toluene	ND	1.00		µg/L	1	9/16/2014 10:07:00 PM
Ethylbenzene	ND	1.00		µg/L	1	9/16/2014 10:07:00 PM
m,p-Xylene	ND	1.00		µg/L	1	9/16/2014 10:07:00 PM
o-Xylene	ND	1.00		µg/L	1	9/16/2014 10:07:00 PM
Surr: Dibromofluoromethane	97.5	61.7-130		%REC	1	9/16/2014 10:07:00 PM
Surr: Toluene-d8	98.2	40.1-139		%REC	1	9/16/2014 10:07:00 PM
Surr: 1-Bromo-4-fluorobenzene	100	68.2-127		%REC	1	9/16/2014 10:07:00 PM

Qualifiers:

В

Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

- D Dilution was required
- H Holding times for preparation or analysis exceeded
- ND Not detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits



**Project:** 

#### CLIENT: **PBS Engineering & Environmental** Mason County Trans.

## **QC SUMMARY REPORT**

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: 1409123-001ADUP	SampType: <b>DUP</b>			Units: µg/L		Prep Dat	te: 9/15/20	14	RunNo: 167	87	
Client ID: BATCH	Batch ID: 8720					Analysis Dat	e: 9/16/20	14	SeqNo: 337	392	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	50.0						0		30	
Diesel Range Organics (C12-C24)	761	50.0						710.6	6.88	30	
Heavy Oil	ND	100						0		30	
Surr: 2-Fluorobiphenyl	40.8		80.00		51.0	50	150		0		
Surr: o-Terphenyl NOTES:	47.4		80.00		59.3	50	150		0		

DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Sample ID: LCS-8720	SampType: LCS			Units: µg/L		Prep Da	te: 9/15/201	4	RunNo: 167	787	
Client ID: LCSW	Batch ID: 8720					Analysis Da	te: 9/16/201	4	SeqNo: 337	7395	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	928	50.0	1,000	0	92.8	65	135				
Surr: 2-Fluorobiphenyl	60.2		80.00		75.3	50	150				
Surr: o-Terphenyl	58.9		80.00		73.7	50	150				
Sample ID: MB-8720	SampType: MBLK			Units: µg/L		Prep Da	te: 9/15/201	4	RunNo: 167	787	
Sample ID: MB-8720 Client ID: MBLKW	SampType: MBLK Batch ID: 8720			Units: µg/L		Prep Da Analysis Da	te: 9/15/201 te: 9/16/201	4	RunNo: 167 SeqNo: 337	787 7396	
Sample ID: <b>MB-8720</b> Client ID: <b>MBLKW</b> Analyte	SampType: <b>MBLK</b> Batch ID: <b>8720</b> Result	RL	SPK value	Units: µg/L SPK Ref Val	%REC	Prep Da Analysis Da LowLimit	te: <b>9/15/201</b> te: <b>9/16/201</b> HighLimit	I <b>4</b> I <b>4</b> RPD Ref Val	RunNo: 167 SeqNo: 337 %RPD	7 <b>87</b> 7 <b>396</b> RPDLimit	Qual
Sample ID: MB-8720 Client ID: MBLKW Analyte Diesel (Fuel Oil)	SampType: <b>MBLK</b> Batch ID: <b>8720</b> Result ND	RL 50.0	SPK value	Units: µg/L SPK Ref Val	%REC	Prep Da Analysis Da LowLimit	te: 9/15/201 te: 9/16/201 HighLimit	4 4 RPD Ref Val	RunNo: <b>167</b> SeqNo: <b>337</b> %RPD	787 7396 RPDLimit	Qual
Sample ID: MB-8720 Client ID: MBLKW Analyte Diesel (Fuel Oil) Heavy Oil	SampType: MBLK Batch ID: 8720 Result ND ND	RL 50.0 100	SPK value	Units: <b>µg/L</b> SPK Ref Val	%REC	Prep Da Analysis Da LowLimit	te: 9/15/201 te: 9/16/201 HighLimit	4 4 RPD Ref Val	RunNo: 167 SeqNo: 337 %RPD	7 <b>87</b> 7 <b>396</b> RPDLimit	Qual
Sample ID: MB-8720 Client ID: MBLKW Analyte Diesel (Fuel Oil) Heavy Oil Surr: 2-Fluorobiphenyl	SampType: MBLK Batch ID: 8720 Result ND ND 51.7	RL 50.0 100	SPK value 80.00	Units: <b>µg/L</b> SPK Ref Val	%REC 64.6	Prep Da Analysis Da LowLimit 50	te: <b>9/15/201</b> te: <b>9/16/201</b> HighLimit 150	4 RPD Ref Val	RunNo: 167 SeqNo: 337 %RPD	7 <b>87</b> 7 <b>396</b> RPDLimit	Qual

В Qualifiers:

н

R

- Analyte detected in the associated Method Blank Holding times for preparation or analysis exceeded
- Dilution was required D
- Analyte detected below quantitation limits J
- RPD outside accepted recovery limits
- RL Reporting Limit

- Value above quantitation range Е
- ND Not detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits



Project:

#### CLIENT: PBS Engineering & Environmental Mason County Trans.

## **QC SUMMARY REPORT**

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: LCS-8758	SampType: LCS			Units: µg/L		Prep Dat	te: 9/17/20 <sup>-</sup>	14	RunNo: 168	63	
Client ID: LCSW	Batch ID: 8758					Analysis Dat	te: 9/18/20 <sup>.</sup>	14	SeqNo: 338	468	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	2.82	0.100	4.000	0	70.6	13.7	121				
2-Methylnaphthalene	3.44	0.100	4.000	0	86.1	35.4	110				
1-Methylnaphthalene	3.17	0.100	4.000	0	79.4	37.5	116				
Acenaphthylene	3.58	0.100	4.000	0	89.6	39.2	114				
Acenaphthene	3.51	0.100	4.000	0	87.8	37	113				
Fluorene	3.40	0.100	4.000	0	85.0	40.3	117				
Phenanthrene	3.28	0.100	4.000	0	82.0	35.1	118				
Anthracene	2.94	0.100	4.000	0	73.5	45.4	115				
Fluoranthene	3.08	0.100	4.000	0	76.9	49.7	126				
Pyrene	3.08	0.100	4.000	0	76.9	48.1	123				
Benz(a)anthracene	3.48	0.100	4.000	0	87.1	48.7	126				
Chrysene	2.54	0.100	4.000	0	63.5	45.1	114				
Benzo(b)fluoranthene	3.58	0.100	4.000	0	89.4	52.2	126				
Benzo(k)fluoranthene	3.55	0.100	4.000	0	88.9	45.5	121				
Benzo(a)pyrene	3.80	0.100	4.000	0	94.9	38.4	121				
Indeno(1,2,3-cd)pyrene	4.86	0.100	4.000	0	122	23.9	143				
Dibenz(a,h)anthracene	4.51	0.100	4.000	0	113	24.9	141				
Benzo(g,h,i)perylene	5.22	0.100	4.000	0	130	35.9	139				
Surr: 2-Fluorobiphenyl	1.86		2.000		92.8	23.9	122				
Surr: Terphenyl-d14	2.16		2.000		108	33.4	135				
Sample ID: LCSD-8758	SampType: LCSD			Units: µg/L		Prep Dat	te: 9/17/20 <sup>/</sup>	14	RunNo: 168	63	
Client ID: LCSW02	Batch ID: 8758					Analysis Dat	te: <b>9/18/20</b>	14	SeqNo: 338	469	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	2.53	0.100	4.000	0	63.3	13.7	121	2.823	10.8	30	
2-Methylnaphthalene	3.11	0.100	4.000	0	77.9	35.4	110	3.445	10.1	30	
1-Methylnaphthalene	2.80	0.100	4.000	0	70.0	37.5	116	3.175	12.5	30	
Qualifiers: B Analyte detected in	the associated Method Blank		D Dilution wa	s required			E Value	above quantitation ra	inge		
H Holding times for p	reparation or analysis exceeded		J Analyte det	ected below quantitation lir	nits		ND Not de	etected at the Reportion	ng Limit		
R RPD outside accep	ted recovery limits		RL Reporting L	imit			S Spike	recovery outside acce	epted recovery limit	s	



#### PBS Engineering & Environmental CLIENT:

## **QC SUMMARY REPORT**

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Project: Mason Co	ounty Trans.				FU	nyaromati	c nyuro			100 0270	(3111)
Sample ID: LCSD-8758	SampType: LCSD			Units: µg/L		Prep Date	e: <b>9/17/20</b> 1	4	RunNo: 168	63	
Client ID: LCSW02	Batch ID: 8758					Analysis Date	e: 9/18/201	4	SeqNo: 338	469	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthylene	3.14	0.100	4.000	0	78.6	39.2	114	3.583	13.1	30	
Acenaphthene	3.14	0.100	4.000	0	78.5	37	113	3.514	11.2	30	
Fluorene	3.09	0.100	4.000	0	77.3	40.3	117	3.400	9.51	30	
Phenanthrene	2.92	0.100	4.000	0	73.1	35.1	118	3.278	11.5	30	
Anthracene	2.55	0.100	4.000	0	63.8	45.4	115	2.941	14.1	30	
Fluoranthene	2.72	0.100	4.000	0	68.0	49.7	126	3.077	12.3	30	
Pyrene	2.74	0.100	4.000	0	68.6	48.1	123	3.077	11.4	30	
Benz(a)anthracene	3.13	0.100	4.000	0	78.4	48.7	126	3.485	10.6	30	
Chrysene	2.28	0.100	4.000	0	56.9	45.1	114	2.540	10.9	30	
Benzo(b)fluoranthene	3.23	0.100	4.000	0	80.8	52.2	126	3.577	10.1	30	
Benzo(k)fluoranthene	3.16	0.100	4.000	0	79.0	45.5	121	3.554	11.7	30	
Benzo(a)pyrene	3.36	0.100	4.000	0	83.9	38.4	121	3.795	12.3	30	
Indeno(1,2,3-cd)pyrene	4.36	0.100	4.000	0	109	23.9	143	4.863	10.8	30	
Dibenz(a,h)anthracene	4.05	0.100	4.000	0	101	24.9	141	4.509	10.6	30	
Benzo(g,h,i)perylene	4.59	0.100	4.000	0	115	35.9	139	5.217	12.9	30	
Surr: 2-Fluorobiphenyl	1.73		2.000		86.6	23.9	122		0	0	
Surr: Terphenyl-d14	1.98		2.000		98.9	33.4	135		0	0	
Sample ID: MB-8758	SampType: MBLK			Units: µg/L		Prep Date	e: 9/17/201	4	RunNo: 168	63	
Client ID: MBLKW	Batch ID: 8758					Analysis Date	e: <b>9/18/20</b> 1	4	SeqNo: 338	470	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	0.100									
2-Methylnaphthalene	ND	0.100									
1-Methylnaphthalene	ND	0.100									
Acenaphthylene	ND	0.100									
Acenaphthene	ND	0.100									
Fluorene	ND	0.100									
Qualifiers: B Analyte detected	in the associated Method Blank		D Dilution wa	s required			E Value	above quantitation ra	nge		
H Holding times for	preparation or analysis exceeded		J Analyte det	ected below quantitation li	mits		ND Not de	tected at the Reporti	ng Limit		
R RPD outside acco	epted recovery limits		RL Reporting I	₋imit			S Spike	recovery outside acce	epted recovery limits	;	



Project:

#### CLIENT: PBS Engineering & Environmental Mason County Trans.

### **QC SUMMARY REPORT**

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: MB-8758	SampType: MBLK			Units: µg/L		Prep Dat	e: 9/17/20	14	RunNo: 168	63	
Client ID: MBLKW	Batch ID: 8758					Analysis Date	e: <b>9/18/20</b>	14	SeqNo: 338	470	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenanthrene	ND	0.100									
Anthracene	ND	0.100									
Fluoranthene	ND	0.100									
Pyrene	ND	0.100									
Benz(a)anthracene	ND	0.100									
Chrysene	ND	0.100									
Benzo(b)fluoranthene	ND	0.100									
Benzo(k)fluoranthene	ND	0.100									
Benzo(a)pyrene	ND	0.100									
Indeno(1,2,3-cd)pyrene	ND	0.100									
Dibenz(a,h)anthracene	ND	0.100									
Benzo(g,h,i)perylene	ND	0.100									
Surr: 2-Fluorobiphenyl	1.55		2.000		77.3	23.9	122				
Surr: Terphenyl-d14	1.87		2.000		93.6	33.4	135				

#### Analyte detected in the associated Method Blank Qualifiers: В

- н Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

- Dilution was required D
- Analyte detected below quantitation limits J
- RL Reporting Limit

- Value above quantitation range Е
- ND Not detected at the Reporting Limit
- s Spike recovery outside accepted recovery limits

Work Order: CLIENT: Project:	1409133 PBS Engine Mason Coun	ering & Env ity Trans.	rironmental							QC S	SUMMAI Gasoline	BY REP	PORT PH-Gx
Sample ID: 14091	33-001ADUP	SampType:	DUP			Units: µg/L		Prep Da	te: 9/16/20	14	RunNo: 168	806	
Client ID: MW2		Batch ID:	R16806					Analysis Da	te: 9/16/20	14	SeqNo: 337	650	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline			ND	50.0						0		30	
Surr: Toluene-d8	3		52.2		50.00		104	65	135		0	0	
Surr: 4-Bromoflu	orobenzene		51.5		50.00		103	65	135		0	0	
Sample ID: LCS-R	16806	SampType:	LCS			Units: µg/L		Prep Da	te: 9/16/20	14	RunNo: 168	306	
Client ID: LCSW		Batch ID:	R16806					Analysis Da	te: 9/16/20	14	SeqNo: 337	660	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline			567	50.0	500.0	0	113	65	135				
Surr: Toluene-d8	3		50.8		50.00		102	65	135				
Surr: 4-Bromoflu	orobenzene		51.2		50.00		103	65	135				
Sample ID: MB-R1	16806	SampType:	MBLK			Units: µg/L		Prep Da	te: 9/16/20	14	RunNo: 168	306	
Client ID: MBLK	w	Batch ID:	R16806					Analysis Da	te: 9/16/20	14	SeqNo: 337	661	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline			ND	50.0									
Surr: Toluene-d8	3		49.0		50.00		98.0	65	135				
Surr: 4-Bromoflu	orobenzene		51.3		50.00		103	65	135				

В Qualifiers:

- Analyte detected in the associated Method Blank
- н Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

Fremont

Analytical

- Dilution was required D
- J Analyte detected below quantitation limits
- Reporting Limit RL

- Е Value above quantitation range
- ND Not detected at the Reporting Limit
- s Spike recovery outside accepted recovery limits



### CLIENT: PBS Engineering & Environmental

### QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Project: Mason Cour	nty Trans.					roluti	oorgam	e eempeu			
Sample ID: LCS-R16798	SampType: LCS			Units: µg/L		Prep Da	te: 9/16/201	14	RunNo: 16	798	
Client ID: LCSW	Batch ID: R16798					Analysis Da	te: 9/16/201	14	SeqNo: 33	7512	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.6	1.00	20.00	0	103	73.1	126				
Toluene	20.0	1.00	20.00	0	99.8	61.3	145				
Ethylbenzene	20.6	1.00	20.00	0	103	72	130				
m,p-Xylene	41.0	1.00	40.00	0	103	73	131				
o-Xylene	20.2	1.00	20.00	0	101	72.1	131				
Surr: Dibromofluoromethane	51.7		50.00		103	61.7	130				
Surr: Toluene-d8	51.4		50.00		103	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	51.9		50.00		104	68.2	127				
Sample ID: MB-R16798	SampType: MBLK			Units: µg/L		Prep Da	ite: 9/16/201	14	RunNo: 16	798	
Client ID: MBLKW	Batch ID: R16798					Analysis Da	te: 9/16/201	14	SeqNo: 33	7513	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.00									
Toluene	ND	1.00									
Ethylbenzene	ND	1.00									
m,p-Xylene	ND	1.00									
o-Xylene	ND	1.00									
Surr: Dibromofluoromethane	50.7		50.00		101	61.7	130				
Surr: Toluene-d8	50.8		50.00		102	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	50.5		50.00		101	68.2	127				
Sample ID: 1409133-001ADUP	SampType: <b>DUP</b>			Units: µg/L		Prep Da	te: 9/16/201	14	RunNo: 16	798	
Client ID: MW2	Batch ID: R16798			-		Analysis Da	te: 9/16/201	14	SeqNo: 33	7620	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.00						0		30	
Toluene	ND	1.00						0		30	

Qualifiers: B Analyte detected in the associated Method Blank

R

H Holding times for preparation or analysis exceeded

RPD outside accepted recovery limits

RL Reporting Limit

D

J

Dilution was required

Analyte detected below quantitation limits

E Value above quantitation range

ND Not detected at the Reporting Limit



#### CLIENT: PBS Engineering & Environmental

## **QC SUMMARY REPORT**

### Volatile Organic Compounds by EPA Method 8260

Project: Mason Cour	nty Trans.						volatil	e Organ	ic Compou	nas by EP	A Method	1 0200
Sample ID: 1409133-001ADUP	SampType:	DUP			Units: µg/L		Prep Da	te: 9/16/20	14	RunNo: 167	798	
Client ID: MW2	Batch ID:	R16798					Analysis Da	te: 9/16/20	14	SeqNo: 337	7620	
Analyte	F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene		ND	1.00						0		30	
m,p-Xylene		ND	1.00						0		30	
o-Xylene		ND	1.00						0		30	
Surr: Dibromofluoromethane		50.4		50.00		101	61.7	130		0		
Surr: Toluene-d8		50.0		50.00		100	40.1	139		0		
Surr: 1-Bromo-4-fluorobenzene		50.6		50.00		101	68.2	127		0		
Sample ID: 1409155-005AMS	SampType:	MS			Units: µg/L		Prep Da	te: 9/16/20	14	RunNo: 167	798	
Client ID: BATCH	Batch ID:	R16798					Analysis Da	te: 9/16/20	14	SeqNo: 337	7635	
Client ID: BATCH Analyte	Batch ID:	R16798 Result	RL	SPK value	SPK Ref Val	%REC	Analysis Da LowLimit	te: <b>9/16/20</b> HighLimit	14 RPD Ref Val	SeqNo: 337 %RPD	7635 RPDLimit	Qual
Client ID: BATCH Analyte Benzene	Batch ID:	<b>R16798</b> Result 22.6	RL 1.00	SPK value 20.00	SPK Ref Val	%REC 113	Analysis Da LowLimit 65.4	te: <b>9/16/20</b> HighLimit 138	14 RPD Ref Val	SeqNo: 337 %RPD	7635 RPDLimit	Qual
Client ID: BATCH Analyte Benzene Toluene	Batch ID:	<b>R16798</b> Result 22.6 20.8	RL 1.00 1.00	SPK value 20.00 20.00	SPK Ref Val 0 0	%REC 113 104	Analysis Da LowLimit 65.4 64	te: <b>9/16/20</b> HighLimit 138 139	14 RPD Ref Val	SeqNo: 337 %RPD	7635 RPDLimit	Qual
Client ID: BATCH Analyte Benzene Toluene Ethylbenzene	Batch ID:	R16798 Result 22.6 20.8 22.3	RL 1.00 1.00 1.00	SPK value 20.00 20.00 20.00	SPK Ref Val 0 0 0	%REC 113 104 112	Analysis Da LowLimit 65.4 64 64.5	te: <b>9/16/20</b> HighLimit 138 139 136	14 RPD Ref Val	SeqNo: 337 %RPD	7635 RPDLimit	Qual
Client ID: BATCH Analyte Benzene Toluene Ethylbenzene m,p-Xylene	Batch ID:	R16798 Result 22.6 20.8 22.3 45.6	RL 1.00 1.00 1.00 1.00	SPK value 20.00 20.00 20.00 40.00	SPK Ref Val 0 0 0 0	%REC 113 104 112 114	Analysis Da LowLimit 65.4 64 64.5 63.3	te: <b>9/16/20</b> HighLimit 138 139 136 135	14 RPD Ref Val	SeqNo: <b>337</b> %RPD	7635 RPDLimit	Qual
Client ID: <b>BATCH</b> Analyte Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene	Batch ID:	R16798 Result 22.6 20.8 22.3 45.6 21.6	RL 1.00 1.00 1.00 1.00 1.00	SPK value 20.00 20.00 20.00 40.00 20.00	SPK Ref Val 0 0 0 0 0	%REC 113 104 112 114 108	Analysis Da LowLimit 65.4 64.5 63.3 65.4	te: 9/16/20 HighLimit 138 139 136 135 134	14 RPD Ref Val	SeqNo: <b>337</b> %RPD	RPDLimit	Qual
Client ID: <b>BATCH</b> Analyte Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene Surr: Dibromofluoromethane	Batch ID:	R16798 Result 22.6 20.8 22.3 45.6 21.6 54.6	RL 1.00 1.00 1.00 1.00 1.00	SPK value 20.00 20.00 20.00 40.00 20.00 50.00	SPK Ref Val 0 0 0 0 0	%REC 113 104 112 114 108 109	Analysis Da LowLimit 65.4 64.5 63.3 65.4 61.7	te: 9/16/20 HighLimit 138 139 136 135 134 130	14 RPD Ref Val	SeqNo: <b>337</b> %RPD	RPDLimit	Qual
Client ID: <b>BATCH</b> Analyte Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene Surr: Dibromofluoromethane Surr: Toluene-d8	Batch ID:	R16798 Result 22.6 20.8 22.3 45.6 21.6 54.6 50.9	RL 1.00 1.00 1.00 1.00 1.00	SPK value 20.00 20.00 40.00 20.00 50.00 50.00	SPK Ref Val 0 0 0 0 0	%REC 113 104 112 114 108 109 102	Analysis Da LowLimit 65.4 64.5 63.3 65.4 61.7 40.1	te: 9/16/20 HighLimit 138 139 136 135 134 130 139	14 RPD Ref Val	SeqNo: <b>337</b> %RPD	7635 RPDLimit	Qual

#### Qualifiers: В

- Analyte detected in the associated Method Blank
- н Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

- Dilution was required D
- Analyte detected below quantitation limits J
- RL Reporting Limit

- Value above quantitation range Е
- ND Not detected at the Reporting Limit
- s Spike recovery outside accepted recovery limits


## Sample Log-In Check List

С	lient Name:	PBS	Work O	der Num	nber: 1409133		
L	ogged by:	Erica Silva	Date Re	ceived:	9/12/2014	1:30:00 PM	
<u>Cha</u>	ain of Cust	ody					
1.	Is Chain of C	ustody complete?	Yes	✓	No 🗌	Not Present	
2.	How was the	sample delivered?	<u>Clier</u>	<u>t</u>			
Log	<u>ı In</u>						
3.	Coolers are p	resent?	Yes	✓	No 🗌	NA 🗌	
л	Shinning conf	ainer/cooler in good condition?	Ves				
4. 5	Custody seals	s intact on shinning container/cooler?	Yes			Not Required V	
5.	Cubicay Scale		100				
6.	Was an attem	npt made to cool the samples?	Yes		No 🗌		
7.	Were all coole	ers received at a temperature of >0°C to 10.0°C	Yes		No 🗌		
8.	Sample(s) in	proper container(s)?	Yes		No 🗌		
9.	Sufficient san	nple volume for indicated test(s)?	Yes	$\checkmark$	No 🗌		
10.	Are samples	properly preserved?	Yes	$\checkmark$	No 🗌		
11.	Was preserva	ative added to bottles?	Yes		No 🗹	NA 🗌	
12	Is the headsp	ace in the VOA vials?	Yes		No 🗹		
13.	Did all sample	es containers arrive in good condition(unbroken)?	Yes	$\checkmark$	No 🗌		
14.	Does paperwo	ork match bottle labels?	Yes		No 🗌		
15.	Are matrices	correctly identified on Chain of Custody?	Yes	$\checkmark$	No 🗌		
16	Is it clear wha	t analyses were requested?	Yes	$\checkmark$	No 🗌		
17.	Were all hold	ing times able to be met?	Yes		No 🗌		
Spe	cial Handl	ing (if applicable)					
18.	Was client no	tified of all discrepancies with this order?	Yes		No 🗌	NA 🗹	
	Person I	Notified:	Date:				
	By Who	m:	via: 🗌 eMa	il 🗌 P	hone 🗌 Fax [	In Person	
	Regardi	ng:					
	Client In	structions:					
19.	Additional ren	narks:					

## Item Information

Item #	Temp °C	Condition				
Cooler	3.7	Good				
Sample	2.2	Good				

Fax (206) 283-5044 Received by:	Ph. (206) 285-8282 Relinquished	Seattle, WA 98119-2029 Received by	Friedman & Bruya, Inc.	TBOI (trib blank) of	DUP-9.11.14 G	MWG 9	MW5 9	MWH 9	MW3 9	MW2 9	Sample ID Lab ID S	-	Phone #201, 233 9103 Fax #	Company (PS Address 2517 East	Send Report To TROTA M. N	
	Que	M	SIGNA	11 Int	11114	11/14	In lig 1	PILITI	mid	11114	Date ampled		A O	ake	Jage	
	AR.	C C	TURE		/	125	525	IIIS	350	225	Time sampled		8102	Alth	Fil.	\$
	A	N		\	GW	GW	65	6W	GW	6W	Sample Type		REMAR	N N	SAMPL	AMPLE C
	NTA 6	eacun	PR	-	3	51	7	5	5	S	# of containers		KS	INAMIE	ERS (signe	HAIN O
	200	7	INT N			X	X	×	×	X	TPH-Diesel			Sp.	ature	FC
	ha	S	VAM	X	X	$\times$	X	X	X	X	TPH-Gasoline BTEX by 8021B	11		A		UST
		Te	Ш	- F		-	-	/ .	/ /		VOCs by8260	11		L		OD
		R									SVOCs by 8270	ANA				
-		-1 -	H								HFS	LYS			1	
	H	BBS	CON			X	$\times$	$\times$	$\times$	$\times$	PAHS	ES REQUE		PO#		
			IPANY									STED	Disp Retu Will	D RUS Rush c		_
	9/12/14/13:3	212/14 133	DATE TIME								Notes		SAMPLE DISPOSAL pose after 30 days urn samples I call with instructions	sharges authorized by	URNAROUND TIME	409133