APPROVED
By Olivia Yu at 12:40 pm, Aug 23, 2018

July 26, 2018

NMOCD approves of the vertical delineation completed for 1RP-5083. Proposed remediation denied. Remove at least 1 ft. of impacted soil. Confirmation bottom and sidewall samples required.

Ms. Christina Hernandez/Ms. Olivia Yu
New Mexico Oil Conservation Division – District 1
1625 N. French Drive
Hobbs, NM 88240

RE: Release Remediation Work Plan
West Lovington Tank Battery
Lea County, New Mexico
NMOCD Case Number – 1RP-5083

Ms. Hernandez/Ms. Yu:

WSP USA, Inc. (WSP) was engaged by Percussion Petroleum, LLC (Percussion) to perform post spill soil assessment and prepare a remediation workplan at the West Lovington facility in Lea County, New Mexico (Figure 1). WSP's preliminary soil assessment results and proposed remediation activities consist of the following:

Incident Description

On May 21, 2018 approximately 80 barrels of oil was released from the West Lovington Tank Battery as a result of the tanks overfilling. Approximately 50 barrels was recovered via vacuum truck. The incident was reported to Ms. Olivia Yu at the Hobbs District 1 office of the New Mexico Oil Conservation Division (NMOCD) at 11:00 AM Mountain Standard Time on June 1, 2018.

Action Taken

Percussion's initial response included utilizing a vacuum truck to remove free fluids. On June 4, 2018 WSP staff collected soil samples from the impacted area to preliminarily delineate the vertical and horizontal extent of the spill. Soil samples were collected utilizing a decontaminated hand auger and gloved hands. Soil was placed in clean jars supplied by the laboratory, placed in a cooler on ice and shipped to ALS Laboratory in Houston, Texas for analysis for total petroleum hydrocarbons (TPH) Gasoline Range Organics (GRO), TPH Diesel Range Organics (DRO), TPH Oil Range Organics (ORO), benzene, toluene, ethylbenzene, and total xylenes (BTEX) and chlorides. Based on the site ranking criteria and corresponding action levels, WSP identified elevated levels of

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TPH in the upper 1 foot of three sample locations. No other analytes were identified above the NMOCD cleanup levels. The analytical results have been summarized in the attached Table 1 and the attached Figure 2 identifies the sample locations.

Background Information

The West Lovington facility is located 10 miles northwest of Hobbs, New Mexico. The legal location description for the site is Section 20, Township 17S, Range 37E in Lea County, New Mexico. The attached Figure 1 depicts the facility's location.

According to the United States Department of Agricultural, Natural Resource Conservation Service, Web Soil Survey, the soil in the vicinity of the facility is Kimbrough-Lea complex, 0 to 3 percent slopes. Kimbrough-Lea soils are described as loams with cemented material at approximately 10 inches in depth. The New Mexico State Engineer's office identified the nearest water well, with groundwater depth information available, to be located in Section 20, Township 17S, Range 37E, 2,200 feet to the east of the West Lovington facility. The depth to groundwater was identified at 80 feet below ground surface (bgs). The referenced groundwater data has been included in the appendix.

WSP utilized the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Spills, Leaks and Releases (1993) in preparing this work plan. Based on the site inspection the impacts would be classified as Unsaturated Contaminated Soils. Following the ranking criteria in the Guide, WSP identified the facility with a depth to ground water of 60 feet, well head protection area greater than 1,000 feet from a water source and greater than 200 feet from a private domestic water source, and greater than 1,000 feet to a surface body of water. The total score for the facility is 10, the correlating action levels for this ranking score are 10 parts per million (ppm) for benzene, 50 ppm for benzene, toluene, ethylbenzene, and total xylenes, and 1,000 ppm for TPH-GRO/DRO/ORO. A chloride level of 600 ppm was used as an action level.

Summary and Conclusion

According to the New Mexico State Engineer's Database groundwater is located between 50 and 100 feet bgs. Preliminary soil sampling results documented TPH impacts extending to approximately 1 feet bgs. Based on the depth to groundwater and contamination levels detected in the soil, it is unlikely that the impacts will pose a threat to groundwater resources after the proposed remedial actions are complete. In response to the NMOCD's request for a work plan to be submitted, the following remedial activities are proposed:

Proposed Remedial Actions

- Spray application of a 3 percent solution of Micro-Blaze to the impacted area;
- Tilling the solution into the soil;
- Per the 1993 Sampling Guidelines, Section III B. Percussion proposes to determine the final soil contaminant concentrations after remediation. Figure 3 shows the proposed post-remediation sample points;
- A final report documenting all field activities and lab reports from the confirmation sampling will be provided to the NMOCD Artesia Office demonstrating that all remedial requirements have been achieved.

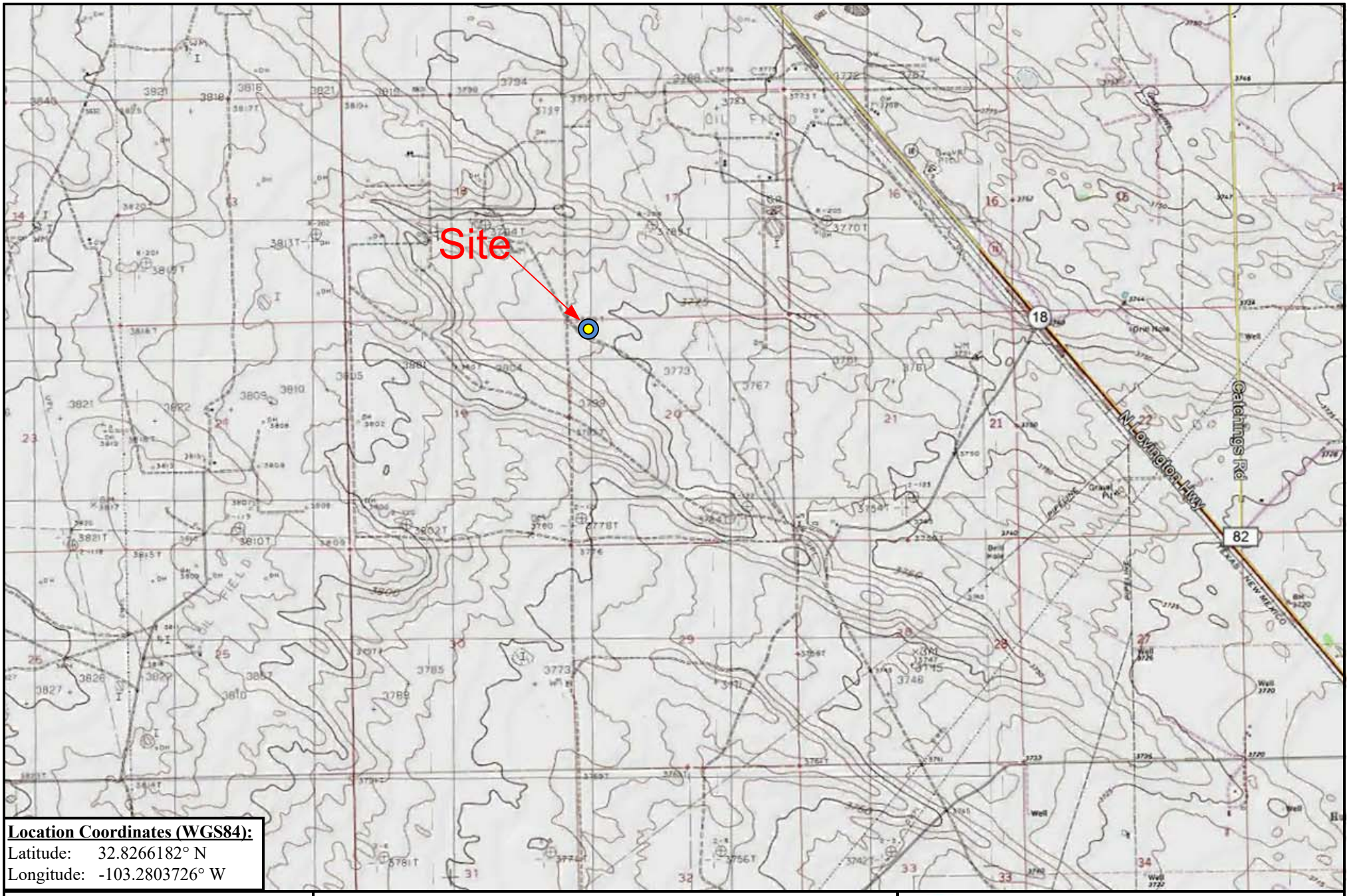
If you have any questions or require additional information concerning the proposed plan of action please contact Matthew Boyle at (214) 561-7424 or (817) 713-0262.

Sincerely,

WSP USA, Inc.

Matthew Boyle
Sr. Environmental Scientist

Charles D. Harlan, P.G.
Director, Business Development – Water & Environment
TX/Mountain Region



Location Coordinates (WGS84):
Latitude: 32.8266182° N
Longitude: -103.2803726° W

Percussion Petroleum
West Lovington 20 #1
Lea County, New Mexico

Legend:

- Site Location

(Source): Google Earth

N

(Not to Scale)

wsp

Site Location Map

WSP Project#: 31401117.008	7/25/2018	Figure 1

Location Coordinates (WGS84):
Latitude: 32.8266182° N
Longitude: -103.2803726° W

Percussion Petroleum
West Lovington 20 #1
Lea County, New Mexico

Legend:

Impacted Area

Sample Location

N

(Not to Scale)

wsp

Sample Location Map

WSP Project#: 31401117.008	7/25/2018	Figure 2

Location Coordinates (WGS84):
Latitude: 32.8266182° N
Longitude: -103.2803726° W

Percussion Petroleum
West Lovington 20 #1
Lea County, New Mexico

Legend:

Impacted Area

Sample Location

N

(Not to Scale)

Proposed Post Remediation Sample Location Map

WSP Project#: 31401117.008	7/25/2018	Figure 3

Table 1
Summary of Soil Sample Analytical Results

Sample ID	Sample Depth	Sample Date	Parameter								
			Chloride mg/kg	TPH-GRO	TPH-DRO	TPH-ORO	Total TPH mg/kg	Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Total Xylene mg/kg
CAS Number			16887-00-6	PHC612	PHCG1028	PHCG2835	PHC635	71-43-2	108-88-3	100-41-4	1330-20-7
NMOCD			600	1,000				10			
								50			
S-1	1'	6/4/2018	22.3	7,900	7,100	9,800	**24,800**	3.7	**76**	**57**	**210**
S-1	2'	6/4/2018	38.6	1.8	150	160	312	u	0.032	0.012	0.1
S-1	3'	6/4/2018	49.1	u	u	7	7	u	u	u	u
S-1	4'	6/4/2018	50	0.055	u	6.7	6.755	u	u	u	u
S-2	1'	6/4/2018	25	9,100	9,800	9,000	**27,900**	**13**	**82**	47	**240**
S-2	2'	6/4/2018	11.60	3.8	9.9	19	32.7	0.047	0.19	0.13	0.34
S-2	3'	6/4/2018	6.53	0.22	u	7.2	7.42	u	u	u	u
S-2	4'	6/4/2018	166	0.12	3.1	7.4	10.62	u	u	u	u
S-3	1'	6/4/2018	7.82	2,000	6,300	7,600	**15,900**	1.3	16	6.9	37
S-3	2'	6/4/2018	35	0.46	8.6	15	24.06	u	u	u	0.018
S-3	3'	6/4/2018	98.7	u	10	36	46	u	u	u	u
S-3	4'	6/4/2018	11.3	u	u	11	11	u	u	u	u

U - Not Detected - less than Standard Detection Limit
"Action Levels" represents the NMOCD Action Levels which the BLM utilizes
Bold numbers exhibit concentrations above the RRC PCL.

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	L 04356	1	3	2	20	17S	37E	661695	3632991*

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)
(NAD83 UTM in meters)

Driller License: **Driller Company:**
Driller Name:

Drill Start Date: **Drill Finish Date:** 05/15/1963 **Plug Date:**
Log File Date: **PCW Rcv Date:** **Source:**
Pump Type: **Pipe Discharge Size:** **Estimated Yield:**
Casing Size: 16.00 **Depth Well:** 100 feet **Depth Water:** 80 feet

***UTM location was derived from PLSS - see Help**

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

June 13, 2018

Matthew Boyle
WSP Parsons Brinckerhoff
15305 N. Dallas Parkway
Suite 300
Addison, TX 75001

Work Order: **HS18060287**

Laboratory Results for: **Percussion West Lovington**

Dear Matthew,

ALS Environmental received 12 sample(s) on Jun 06, 2018 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Bernadette Fini

Generated By: JUMOKE.LAWAL
Bernadette A. Fini
Project Manager

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
Work Order: HS18060287

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS18060287-01	S-1 1'	Soil		04-Jun-2018 06:45	06-Jun-2018 08:48	☐
HS18060287-02	S-1 2'	Soil		04-Jun-2018 06:50	06-Jun-2018 08:48	☐
HS18060287-03	S-1 3'	Soil		04-Jun-2018 06:55	06-Jun-2018 08:48	☐
HS18060287-04	S-1 4'	Soil		04-Jun-2018 07:00	06-Jun-2018 08:48	☐
HS18060287-05	S-2 1'	Soil		04-Jun-2018 07:10	06-Jun-2018 08:48	☐
HS18060287-06	S-2 2'	Soil		04-Jun-2018 07:15	06-Jun-2018 08:48	☐
HS18060287-07	S-2 3'	Soil		04-Jun-2018 07:20	06-Jun-2018 08:48	☐
HS18060287-08	S-2 4'	Soil		04-Jun-2018 07:25	06-Jun-2018 08:48	☐
HS18060287-09	S-3 1'	Soil		04-Jun-2018 07:35	06-Jun-2018 08:48	☐
HS18060287-10	S-3 2'	Soil		04-Jun-2018 07:40	06-Jun-2018 08:48	☐
HS18060287-11	S-3 3'	Soil		04-Jun-2018 07:45	06-Jun-2018 08:48	☐
HS18060287-12	S-3 4'	Soil		04-Jun-2018 07:50	06-Jun-2018 08:48	☐

Client: WSP Parsons Brinckerhoff **CASE NARRATIVE**
Project: Percussion West Lovington
Work Order: HS18060287

GC Semivolatiles by Method SW8015M

Batch ID: 129222

Sample ID: S-1 1' (HS18060287-01)

- Surrogate recoveries were outside of the control limits due to matrix interference.

Sample ID: S-2 1' (HS18060287-05)

- Surrogate recoveries were outside of the control limits due to matrix interference.

Sample ID: S-3 1' (HS18060287-09)

- Surrogate recoveries were outside of the control limits due to matrix interference.

Sample ID: S-1 2' (HS18060287-02MS)

- The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS may be due to sample matrix interference.

Sample ID: S-1 2' (HS18060287-02MSD)

- The recovery of the Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MSD may be due to sample matrix interference.

GC Volatile Organics by Method SW8015

Batch ID: R317908

Sample ID: S-3 1' (HS18060287-09)

- Surrogate recoveries were outside of the control limits due to matrix interference.

GC Volatiles by Method SW8015

Batch ID: R317908

Sample ID: S-1 1' (HS18060287-01)

- Surrogate recoveries were outside of the control limits due to matrix interference.

Sample ID: S-2 1' (HS18060287-05)

- Surrogate recoveries were outside of the control limits due to matrix interference.

Batch ID: R317671

Sample ID: S-1 2' (HS18060287-02MS)

- The matrix spike duplicate recovery was outside of the control limits. However, the matrix spike recovery and the RPD between the MS and MSD was in control. (Gasoline Range Organics)

GCMS Volatiles by Method SW8260

Batch ID: R317605,R317760

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Batch ID: R317684

Sample ID: S-1 1' (HS18060287-01)

Client: WSP Parsons Brinckerhoff **CASE NARRATIVE**
Project: Percussion West Lovington
Work Order: HS18060287

GCMS Volatiles by Method SW8260

Batch ID: R317684

• Surrogates failure for HS18060287-01 confirmed by reanalysis.

Sample ID: S-3 1' (HS18060287-09)

• Surrogates failure for HS18060287-09 confirmed by reanalysis.

Batch ID: R317681

Sample ID: S-3 2' (HS18060287-10)

• Surrogate failure for HS18060287-10 confirmed by reanalysis.

Batch ID: R317598

Sample ID: S-1 2' (HS18060287-02MS)

• MS/MSD failed QC limits for some compounds.

GCMS Volatiles by Method SW8260

Batch ID: R317684

Sample ID: S-2 1' (HS18060287-05)

• Surrogates failure for HS18060287-05 confirmed by reanalysis.

WetChemistry by Method E300

Batch ID: 129235

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
Sample ID: S-1 1'
Collection Date: 04-Jun-2018 06:45

ANALYTICAL REPORT
WorkOrder:HS18060287
Lab ID:HS18060287-01
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES BY SW8260C		**Method:SW8260**				Analyst: WLR
Benzene	**3.7**		**2.5**	**mg/Kg**	500	11-Jun-2018 17:39
Ethylbenzene	**57**		**2.5**	**mg/Kg**	500	11-Jun-2018 17:39
m,p-Xylene	**140**		**50**	**mg/Kg**	5000	12-Jun-2018 10:09
o-Xylene	**71**		**25**	**mg/Kg**	5000	12-Jun-2018 10:09
Toluene	**76**		**2.5**	**mg/Kg**	500	11-Jun-2018 17:39
Xylenes, Total	**210**		**25**	**mg/Kg**	5000	12-Jun-2018 10:09
Surr: 1,2-Dichloroethane-d4	*96.0*		*70-126*	*%REC*	*500*	*11-Jun-2018 17:39*
Surr: 1,2-Dichloroethane-d4	*105*		*70-126*	*%REC*	*5000*	*12-Jun-2018 10:09*
Surr: 4-Bromofluorobenzene	*143*	*S*	*70-130*	*%REC*	*500*	*11-Jun-2018 17:39*
Surr: 4-Bromofluorobenzene	*110*		*70-130*	*%REC*	*5000*	*12-Jun-2018 10:09*
Surr: Dibromofluoromethane	*101*		*70-130*	*%REC*	*500*	*11-Jun-2018 17:39*
Surr: Dibromofluoromethane	*97.4*		*70-130*	*%REC*	*5000*	*12-Jun-2018 10:09*
Surr: Toluene-d8	*103*		*70-130*	*%REC*	*500*	*11-Jun-2018 17:39*
Surr: Toluene-d8	*106*		*70-130*	*%REC*	*5000*	*12-Jun-2018 10:09*
GASOLINE RANGE ORGANICS BY SW8015C		**Method:SW8015**				Analyst: CL
Gasoline Range Organics	**7,900**		**21**	**mg/Kg**	500	13-Jun-2018 14:53
Surr: 4-Bromofluorobenzene	*203*	*S*	*70-123*	*%REC*	*500*	*13-Jun-2018 14:53*
TPH DRO/ORO BY SW8015C		**Method:SW8015M**		Prep:SW3541 / 08-Jun-2018		Analyst: AP
TPH (Diesel Range)	**7,100**		**1300**	**mg/Kg**	500	12-Jun-2018 20:54
TPH (Motor Oil Range)	**9,800**	n	**2500**	**mg/Kg**	500	12-Jun-2018 20:54
Surr: 2-Fluorobiphenyl	*2830*	*S*	*60-129*	*%REC*	*500*	*12-Jun-2018 20:54*
ANIONS BY E300.0		**Method:E300**		Prep:E300 / 08-Jun-2018		Analyst: KMU
Chloride	**22.3**		**4.99**	**mg/Kg**	1	11-Jun-2018 12:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
Sample ID: S-1 2'
Collection Date: 04-Jun-2018 06:50

ANALYTICAL REPORT
WorkOrder:HS18060287
Lab ID:HS18060287-02
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES BY SW8260C		**Method:SW8260**				Analyst: WLR
Benzene	ND		0.0048	mg/Kg	1	07-Jun-2018 23:39
Ethylbenzene	**0.012**		**0.0048**	**mg/Kg**	1	07-Jun-2018 23:39
m,p-Xylene	**0.063**		**0.0097**	**mg/Kg**	1	07-Jun-2018 23:39
o-Xylene	**0.041**		**0.0048**	**mg/Kg**	1	07-Jun-2018 23:39
Toluene	**0.032**		**0.0048**	**mg/Kg**	1	07-Jun-2018 23:39
Xylenes, Total	**0.10**		**0.0048**	**mg/Kg**	1	07-Jun-2018 23:39
Surr: 1,2-Dichloroethane-d4	*89.8*		*70-126*	*%REC*	*1*	*07-Jun-2018 23:39*
Surr: 4-Bromofluorobenzene	*101*		*70-130*	*%REC*	*1*	*07-Jun-2018 23:39*
Surr: Dibromofluoromethane	*93.0*		*70-130*	*%REC*	*1*	*07-Jun-2018 23:39*
Surr: Toluene-d8	*100*		*70-130*	*%REC*	*1*	*07-Jun-2018 23:39*
GASOLINE RANGE ORGANICS BY SW8015C		**Method:SW8015**				Analyst: CL
Gasoline Range Organics	**1.8**		**0.050**	**mg/Kg**	1	08-Jun-2018 13:57
Surr: 4-Bromofluorobenzene	*92.7*		*70-123*	*%REC*	*1*	*08-Jun-2018 13:57*
TPH DRO/ORO BY SW8015C		**Method:SW8015M**		Prep:SW3541 / 08-Jun-2018		Analyst: AP
TPH (Diesel Range)	**150**		**8.5**	**mg/Kg**	5	12-Jun-2018 21:42
TPH (Motor Oil Range)	**160**	n	**17**	**mg/Kg**	5	12-Jun-2018 21:42
Surr: 2-Fluorobiphenyl	*115*		*60-129*	*%REC*	*5*	*12-Jun-2018 21:42*
ANIONS BY E300.0		**Method:E300**		Prep:E300 / 08-Jun-2018		Analyst: KMU
Chloride	**38.6**		**4.93**	**mg/Kg**	1	11-Jun-2018 12:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
Sample ID: S-1 3'
Collection Date: 04-Jun-2018 06:55

ANALYTICAL REPORT
WorkOrder:HS18060287
Lab ID:HS18060287-03
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES BY SW8260C		**Method:SW8260**				Analyst: WLR
Benzene	ND		0.0050	mg/Kg	1	08-Jun-2018 02:23
Ethylbenzene	ND		0.0050	mg/Kg	1	08-Jun-2018 02:23
m,p-Xylene	ND		0.010	mg/Kg	1	08-Jun-2018 02:23
o-Xylene	ND		0.0050	mg/Kg	1	08-Jun-2018 02:23
Toluene	ND		0.0050	mg/Kg	1	08-Jun-2018 02:23
Xylenes, Total	ND		0.0050	mg/Kg	1	08-Jun-2018 02:23
Surr: 1,2-Dichloroethane-d4	*93.2*		*70-126*	*%REC*	*1*	*08-Jun-2018 02:23*
Surr: 4-Bromofluorobenzene	*99.4*		*70-130*	*%REC*	*1*	*08-Jun-2018 02:23*
Surr: Dibromofluoromethane	*99.0*		*70-130*	*%REC*	*1*	*08-Jun-2018 02:23*
Surr: Toluene-d8	*103*		*70-130*	*%REC*	*1*	*08-Jun-2018 02:23*
GASOLINE RANGE ORGANICS BY SW8015C		**Method:SW8015**				Analyst: CL
Gasoline Range Organics	ND		0.050	mg/Kg	1	08-Jun-2018 13:41
Surr: 4-Bromofluorobenzene	*97.9*		*70-123*	*%REC*	*1*	*08-Jun-2018 13:41*
TPH DRO/ORO BY SW8015C		**Method:SW8015M**		Prep:SW3541 / 08-Jun-2018		Analyst: AP
TPH (Diesel Range)	ND		1.7	mg/Kg	1	13-Jun-2018 00:05
TPH (Motor Oil Range)	**7.0**	n	**3.4**	**mg/Kg**	1	13-Jun-2018 00:05
Surr: 2-Fluorobiphenyl	*63.6*		*60-129*	*%REC*	*1*	*13-Jun-2018 00:05*
ANIONS BY E300.0		**Method:E300**		Prep:E300 / 08-Jun-2018		Analyst: KMU
Chloride	**49.1**		**4.99**	**mg/Kg**	1	11-Jun-2018 13:20

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
Sample ID: S-1 4'
Collection Date: 04-Jun-2018 07:00

ANALYTICAL REPORT
WorkOrder:HS18060287
Lab ID:HS18060287-04
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES BY SW8260C		**Method:SW8260**				Analyst: WLR
Benzene	ND		0.0050	mg/Kg	1	08-Jun-2018 02:47
Ethylbenzene	ND		0.0050	mg/Kg	1	08-Jun-2018 02:47
m,p-Xylene	ND		0.010	mg/Kg	1	08-Jun-2018 02:47
o-Xylene	ND		0.0050	mg/Kg	1	08-Jun-2018 02:47
Toluene	ND		0.0050	mg/Kg	1	08-Jun-2018 02:47
Xylenes, Total	ND		0.0050	mg/Kg	1	08-Jun-2018 02:47
Surr: 1,2-Dichloroethane-d4	*94.2*		*70-126*	*%REC*	*1*	*08-Jun-2018 02:47*
Surr: 4-Bromofluorobenzene	*97.5*		*70-130*	*%REC*	*1*	*08-Jun-2018 02:47*
Surr: Dibromofluoromethane	*96.3*		*70-130*	*%REC*	*1*	*08-Jun-2018 02:47*
Surr: Toluene-d8	*101*		*70-130*	*%REC*	*1*	*08-Jun-2018 02:47*
GASOLINE RANGE ORGANICS BY SW8015C		**Method:SW8015**				Analyst: CL
Gasoline Range Organics	**0.055**		**0.050**	**mg/Kg**	1	08-Jun-2018 15:35
Surr: 4-Bromofluorobenzene	*106*		*70-123*	*%REC*	*1*	*08-Jun-2018 15:35*
TPH DRO/ORO BY SW8015C		**Method:SW8015M**		Prep:SW3541 / 08-Jun-2018		Analyst: AP
TPH (Diesel Range)	ND		1.7	mg/Kg	1	13-Jun-2018 01:17
TPH (Motor Oil Range)	**6.7**	n	**3.4**	**mg/Kg**	1	13-Jun-2018 01:17
Surr: 2-Fluorobiphenyl	*62.9*		*60-129*	*%REC*	*1*	*13-Jun-2018 01:17*
ANIONS BY E300.0		**Method:E300**		Prep:E300 / 08-Jun-2018		Analyst: KMU
Chloride	**50.0**		**5.00**	**mg/Kg**	1	11-Jun-2018 13:42

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
Sample ID: S-2 1'
Collection Date: 04-Jun-2018 07:10

ANALYTICAL REPORT
WorkOrder:HS18060287
Lab ID:HS18060287-05
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES BY SW8260C		**Method:SW8260**				Analyst: WLR
Benzene	**13**		**2.5**	**mg/Kg**	500	11-Jun-2018 17:13
Ethylbenzene	**47**		**2.5**	**mg/Kg**	500	11-Jun-2018 17:13
m,p-Xylene	**170**		**5.0**	**mg/Kg**	500	11-Jun-2018 17:13
o-Xylene	**76**		**2.5**	**mg/Kg**	500	11-Jun-2018 17:13
Toluene	**82**		**25**	**mg/Kg**	5000	12-Jun-2018 09:44
Xylenes, Total	**240**		**2.5**	**mg/Kg**	500	11-Jun-2018 17:13
Surr: 1,2-Dichloroethane-d4	*104*		*70-126*	*%REC*	*500*	*11-Jun-2018 17:13*
Surr: 1,2-Dichloroethane-d4	*108*		*70-126*	*%REC*	*5000*	*12-Jun-2018 09:44*
Surr: 4-Bromofluorobenzene	*130*	*S*	*70-130*	*%REC*	*500*	*11-Jun-2018 17:13*
Surr: 4-Bromofluorobenzene	*112*		*70-130*	*%REC*	*5000*	*12-Jun-2018 09:44*
Surr: Dibromofluoromethane	*101*		*70-130*	*%REC*	*500*	*11-Jun-2018 17:13*
Surr: Dibromofluoromethane	*102*		*70-130*	*%REC*	*5000*	*12-Jun-2018 09:44*
Surr: Toluene-d8	*99.7*		*70-130*	*%REC*	*500*	*11-Jun-2018 17:13*
Surr: Toluene-d8	*105*		*70-130*	*%REC*	*5000*	*12-Jun-2018 09:44*
GASOLINE RANGE ORGANICS BY SW8015C		**Method:SW8015**				Analyst: CL
Gasoline Range Organics	**9,100**		**25**	**mg/Kg**	500	13-Jun-2018 15:09
Surr: 4-Bromofluorobenzene	*171*	*S*	*70-123*	*%REC*	*500*	*13-Jun-2018 15:09*
TPH DRO/ORO BY SW8015C		**Method:SW8015M**		Prep:SW3541 / 08-Jun-2018		Analyst: AP
TPH (Diesel Range)	**9,800**		**1300**	**mg/Kg**	500	13-Jun-2018 01:40
TPH (Motor Oil Range)	**9,000**	n	**2500**	**mg/Kg**	500	13-Jun-2018 01:40
Surr: 2-Fluorobiphenyl	*3730*	*S*	*60-129*	*%REC*	*500*	*13-Jun-2018 01:40*
ANIONS BY E300.0		**Method:E300**		Prep:E300 / 08-Jun-2018		Analyst: KMU
Chloride	**24.8**		**4.95**	**mg/Kg**	1	11-Jun-2018 16:13

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
Sample ID: S-2 2'
Collection Date: 04-Jun-2018 07:15

ANALYTICAL REPORT
WorkOrder:HS18060287
Lab ID:HS18060287-06
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES BY SW8260C		**Method:SW8260**				Analyst: WLR
Benzene	**0.047**		**0.0050**	**mg/Kg**	1	08-Jun-2018 03:10
Ethylbenzene	**0.13**		**0.0050**	**mg/Kg**	1	08-Jun-2018 03:10
m,p-Xylene	**0.23**		**0.089**	**mg/Kg**	10	08-Jun-2018 16:56
o-Xylene	**0.12**		**0.044**	**mg/Kg**	10	08-Jun-2018 16:56
Toluene	**0.19**		**0.044**	**mg/Kg**	10	08-Jun-2018 16:56
Xylenes, Total	**0.34**		**0.044**	**mg/Kg**	10	08-Jun-2018 16:56
Surr: 1,2-Dichloroethane-d4	*85.7*		*70-126*	*%REC*	*1*	*08-Jun-2018 03:10*
Surr: 1,2-Dichloroethane-d4	*85.9*		*70-126*	*%REC*	*10*	*08-Jun-2018 16:56*
Surr: 4-Bromofluorobenzene	*99.7*		*70-130*	*%REC*	*1*	*08-Jun-2018 03:10*
Surr: 4-Bromofluorobenzene	*95.7*		*70-130*	*%REC*	*10*	*08-Jun-2018 16:56*
Surr: Dibromofluoromethane	*94.3*		*70-130*	*%REC*	*1*	*08-Jun-2018 03:10*
Surr: Dibromofluoromethane	*90.5*		*70-130*	*%REC*	*10*	*08-Jun-2018 16:56*
Surr: Toluene-d8	*108*		*70-130*	*%REC*	*1*	*08-Jun-2018 03:10*
Surr: Toluene-d8	*97.0*		*70-130*	*%REC*	*10*	*08-Jun-2018 16:56*
GASOLINE RANGE ORGANICS BY SW8015C		**Method:SW8015**				Analyst: CL
Gasoline Range Organics	**3.8**		**0.050**	**mg/Kg**	1	08-Jun-2018 16:08
Surr: 4-Bromofluorobenzene	*82.5*		*70-123*	*%REC*	*1*	*08-Jun-2018 16:08*
TPH DRO/ORO BY SW8015C		**Method:SW8015M**		Prep:SW3541 / 08-Jun-2018		Analyst: AP
TPH (Diesel Range)	**9.9**		**1.7**	**mg/Kg**	1	13-Jun-2018 02:28
TPH (Motor Oil Range)	**19**	n	**3.4**	**mg/Kg**	1	13-Jun-2018 02:28
Surr: 2-Fluorobiphenyl	*62.5*		*60-129*	*%REC*	*1*	*13-Jun-2018 02:28*
ANIONS BY E300.0		**Method:E300**		Prep:E300 / 08-Jun-2018		Analyst: KMU
Chloride	**11.6**		**4.95**	**mg/Kg**	1	11-Jun-2018 15:08

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
Sample ID: S-2 3'
Collection Date: 04-Jun-2018 07:20

ANALYTICAL REPORT
WorkOrder:HS18060287
Lab ID:HS18060287-07
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES BY SW8260C		**Method:SW8260**				Analyst: WLR
Benzene	ND		0.0049	mg/Kg	1	08-Jun-2018 03:33
Ethylbenzene	ND		0.0049	mg/Kg	1	08-Jun-2018 03:33
m,p-Xylene	ND		0.0098	mg/Kg	1	08-Jun-2018 03:33
o-Xylene	ND		0.0049	mg/Kg	1	08-Jun-2018 03:33
Toluene	ND		0.0049	mg/Kg	1	08-Jun-2018 03:33
Xylenes, Total	ND		0.0049	mg/Kg	1	08-Jun-2018 03:33
Surr: 1,2-Dichloroethane-d4	*89.9*		*70-126*	*%REC*	*1*	*08-Jun-2018 03:33*
Surr: 4-Bromofluorobenzene	*99.1*		*70-130*	*%REC*	*1*	*08-Jun-2018 03:33*
Surr: Dibromofluoromethane	*94.6*		*70-130*	*%REC*	*1*	*08-Jun-2018 03:33*
Surr: Toluene-d8	*103*		*70-130*	*%REC*	*1*	*08-Jun-2018 03:33*
GASOLINE RANGE ORGANICS BY SW8015C		**Method:SW8015**				Analyst: CL
Gasoline Range Organics	**0.22**		**0.050**	**mg/Kg**	1	08-Jun-2018 16:24
Surr: 4-Bromofluorobenzene	*107*		*70-123*	*%REC*	*1*	*08-Jun-2018 16:24*
TPH DRO/ORO BY SW8015C		**Method:SW8015M**		Prep:SW3541 / 08-Jun-2018		Analyst: AP
TPH (Diesel Range)	ND		1.7	mg/Kg	1	13-Jun-2018 02:51
TPH (Motor Oil Range)	**7.2**	n	**3.4**	**mg/Kg**	1	13-Jun-2018 02:51
Surr: 2-Fluorobiphenyl	*63.1*		*60-129*	*%REC*	*1*	*13-Jun-2018 02:51*
ANIONS BY E300.0		**Method:E300**		Prep:E300 / 08-Jun-2018		Analyst: KMU
Chloride	**6.53**		**4.95**	**mg/Kg**	1	11-Jun-2018 16:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
Sample ID: S-2 4'
Collection Date: 04-Jun-2018 07:25

ANALYTICAL REPORT
WorkOrder:HS18060287
Lab ID:HS18060287-08
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES BY SW8260C		**Method:SW8260**				Analyst: WLR
Benzene	ND		0.0050	mg/Kg	1	08-Jun-2018 03:57
Ethylbenzene	ND		0.0050	mg/Kg	1	08-Jun-2018 03:57
m,p-Xylene	ND		0.0099	mg/Kg	1	08-Jun-2018 03:57
o-Xylene	ND		0.0050	mg/Kg	1	08-Jun-2018 03:57
Toluene	ND		0.0050	mg/Kg	1	08-Jun-2018 03:57
Xylenes, Total	ND		0.0050	mg/Kg	1	08-Jun-2018 03:57
Surr: 1,2-Dichloroethane-d4	*90.3*		*70-126*	*%REC*	*1*	*08-Jun-2018 03:57*
Surr: 4-Bromofluorobenzene	*99.8*		*70-130*	*%REC*	*1*	*08-Jun-2018 03:57*
Surr: Dibromofluoromethane	*95.9*		*70-130*	*%REC*	*1*	*08-Jun-2018 03:57*
Surr: Toluene-d8	*102*		*70-130*	*%REC*	*1*	*08-Jun-2018 03:57*
GASOLINE RANGE ORGANICS BY SW8015C		**Method:SW8015**				Analyst: CL
Gasoline Range Organics	**0.12**		**0.050**	**mg/Kg**	1	08-Jun-2018 16:40
Surr: 4-Bromofluorobenzene	*109*		*70-123*	*%REC*	*1*	*08-Jun-2018 16:40*
TPH DRO/ORO BY SW8015C		**Method:SW8015M**		Prep:SW3541 / 08-Jun-2018		Analyst: AP
TPH (Diesel Range)	**3.1**		**1.7**	**mg/Kg**	1	13-Jun-2018 03:15
TPH (Motor Oil Range)	**7.4**	n	**3.4**	**mg/Kg**	1	13-Jun-2018 03:15
Surr: 2-Fluorobiphenyl	*65.2*		*60-129*	*%REC*	*1*	*13-Jun-2018 03:15*
ANIONS BY E300.0		**Method:E300**		Prep:E300 / 08-Jun-2018		Analyst: KMU
Chloride	**166**		**4.26**	**mg/Kg**	1	11-Jun-2018 16:57

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
Sample ID: S-3 1'
Collection Date: 04-Jun-2018 07:35

ANALYTICAL REPORT
WorkOrder:HS18060287
Lab ID:HS18060287-09
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES BY SW8260C		**Method:SW8260**				Analyst: WLR
Benzene	**1.3**		**0.25**	**mg/Kg**	50	11-Jun-2018 16:46
Ethylbenzene	**6.9**		**2.5**	**mg/Kg**	500	12-Jun-2018 10:33
m,p-Xylene	**25**		**5.0**	**mg/Kg**	500	12-Jun-2018 10:33
o-Xylene	**12**		**2.5**	**mg/Kg**	500	12-Jun-2018 10:33
Toluene	**16**		**2.5**	**mg/Kg**	500	12-Jun-2018 10:33
Xylenes, Total	**37**		**2.5**	**mg/Kg**	500	12-Jun-2018 10:33
Surr: 1,2-Dichloroethane-d4	*97.6*		*70-126*	*%REC*	*50*	*11-Jun-2018 16:46*
Surr: 1,2-Dichloroethane-d4	*106*		*70-126*	*%REC*	*500*	*12-Jun-2018 10:33*
Surr: 4-Bromofluorobenzene	*178*	*S*	*70-130*	*%REC*	*50*	*11-Jun-2018 16:46*
Surr: 4-Bromofluorobenzene	*113*		*70-130*	*%REC*	*500*	*12-Jun-2018 10:33*
Surr: Dibromofluoromethane	*101*		*70-130*	*%REC*	*50*	*11-Jun-2018 16:46*
Surr: Dibromofluoromethane	*101*		*70-130*	*%REC*	*500*	*12-Jun-2018 10:33*
Surr: Toluene-d8	*99.7*		*70-130*	*%REC*	*50*	*11-Jun-2018 16:46*
Surr: Toluene-d8	*107*		*70-130*	*%REC*	*500*	*12-Jun-2018 10:33*
GASOLINE RANGE ORGANICS BY SW8015C		**Method:SW8015**				Analyst: CL
Gasoline Range Organics	**2,000**		**2.5**	**mg/Kg**	50	13-Jun-2018 13:17
Surr: 4-Bromofluorobenzene	*408*	*S*	*70-123*	*%REC*	*50*	*13-Jun-2018 13:17*
TPH DRO/ORO BY SW8015C		**Method:SW8015M**		Prep:SW3541 / 08-Jun-2018		Analyst: AP
TPH (Diesel Range)	**6,300**		**680**	**mg/Kg**	200	13-Jun-2018 03:39
TPH (Motor Oil Range)	**7,600**	n	**1400**	**mg/Kg**	200	13-Jun-2018 03:39
Surr: 2-Fluorobiphenyl	*2250*	*S*	*60-129*	*%REC*	*200*	*13-Jun-2018 03:39*
ANIONS BY E300.0		**Method:E300**		Prep:E300 / 08-Jun-2018		Analyst: KMU
Chloride	**7.82**		**4.97**	**mg/Kg**	1	11-Jun-2018 17:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
Sample ID: S-3 2'
Collection Date: 04-Jun-2018 07:40

ANALYTICAL REPORT
WorkOrder:HS18060287
Lab ID:HS18060287-10
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES BY SW8260C		**Method:SW8260**				Analyst: WLR
Benzene	ND		0.0050	mg/Kg	1	09-Jun-2018 12:11
Ethylbenzene	ND		0.0050	mg/Kg	1	09-Jun-2018 12:11
m,p-Xylene	ND		0.010	mg/Kg	1	09-Jun-2018 12:11
o-Xylene	**0.011**		**0.0050**	**mg/Kg**	1	09-Jun-2018 12:11
Toluene	ND		0.0050	mg/Kg	1	09-Jun-2018 12:11
Xylenes, Total	**0.018**		**0.0050**	**mg/Kg**	1	09-Jun-2018 12:11
Surr: 1,2-Dichloroethane-d4	*71.5*		*70-126*	*%REC*	*1*	*09-Jun-2018 12:11*
Surr: 4-Bromofluorobenzene	*106*		*70-130*	*%REC*	*1*	*09-Jun-2018 12:11*
Surr: Dibromofluoromethane	*65.8*	*S*	*70-130*	*%REC*	*1*	*09-Jun-2018 12:11*
Surr: Toluene-d8	*93.7*		*70-130*	*%REC*	*1*	*09-Jun-2018 12:11*
GASOLINE RANGE ORGANICS BY SW8015C		**Method:SW8015**				Analyst: CL
Gasoline Range Organics	**0.46**		**0.050**	**mg/Kg**	1	08-Jun-2018 17:13
Surr: 4-Bromofluorobenzene	*110*		*70-123*	*%REC*	*1*	*08-Jun-2018 17:13*
TPH DRO/ORO BY SW8015C		**Method:SW8015M**		Prep:SW3541 / 08-Jun-2018		Analyst: AP
TPH (Diesel Range)	**8.6**		**1.7**	**mg/Kg**	1	13-Jun-2018 04:26
TPH (Motor Oil Range)	**15**	n	**3.4**	**mg/Kg**	1	13-Jun-2018 04:26
Surr: 2-Fluorobiphenyl	*62.3*		*60-129*	*%REC*	*1*	*13-Jun-2018 04:26*
ANIONS BY E300.0		**Method:E300**		Prep:E300 / 08-Jun-2018		Analyst: KMU
Chloride	**35.4**		**4.96**	**mg/Kg**	1	11-Jun-2018 17:40

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
Sample ID: S-3 3'
Collection Date: 04-Jun-2018 07:45

ANALYTICAL REPORT
WorkOrder:HS18060287
Lab ID:HS18060287-11
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES BY SW8260C		**Method:SW8260**				Analyst: WLR
Benzene	ND		0.0049	mg/Kg	1	08-Jun-2018 05:07
Ethylbenzene	ND		0.0049	mg/Kg	1	08-Jun-2018 05:07
m,p-Xylene	ND		0.0098	mg/Kg	1	08-Jun-2018 05:07
o-Xylene	ND		0.0049	mg/Kg	1	08-Jun-2018 05:07
Toluene	ND		0.0049	mg/Kg	1	08-Jun-2018 05:07
Xylenes, Total	ND		0.0049	mg/Kg	1	08-Jun-2018 05:07
Surr: 1,2-Dichloroethane-d4	*88.9*		*70-126*	*%REC*	*1*	*08-Jun-2018 05:07*
Surr: 4-Bromofluorobenzene	*98.9*		*70-130*	*%REC*	*1*	*08-Jun-2018 05:07*
Surr: Dibromofluoromethane	*90.9*		*70-130*	*%REC*	*1*	*08-Jun-2018 05:07*
Surr: Toluene-d8	*105*		*70-130*	*%REC*	*1*	*08-Jun-2018 05:07*
GASOLINE RANGE ORGANICS BY SW8015C		**Method:SW8015**				Analyst: CL
Gasoline Range Organics	ND		0.050	mg/Kg	1	08-Jun-2018 17:29
Surr: 4-Bromofluorobenzene	*106*		*70-123*	*%REC*	*1*	*08-Jun-2018 17:29*
TPH DRO/ORO BY SW8015C		**Method:SW8015M**		Prep:SW3541 / 08-Jun-2018		Analyst: AP
TPH (Diesel Range)	**10**		**1.7**	**mg/Kg**	1	13-Jun-2018 04:50
TPH (Motor Oil Range)	**36**	n	**3.4**	**mg/Kg**	1	13-Jun-2018 04:50
Surr: 2-Fluorobiphenyl	*70.0*		*60-129*	*%REC*	*1*	*13-Jun-2018 04:50*
ANIONS BY E300.0		**Method:E300**		Prep:E300 / 08-Jun-2018		Analyst: KMU
Chloride	**98.7**		**4.90**	**mg/Kg**	1	11-Jun-2018 18:02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
Sample ID: S-3 4'
Collection Date: 04-Jun-2018 07:50

ANALYTICAL REPORT
WorkOrder:HS18060287
Lab ID:HS18060287-12
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES BY SW8260C		**Method:SW8260**				Analyst: WLR
Benzene	ND		0.0050	mg/Kg	1	08-Jun-2018 05:30
Ethylbenzene	ND		0.0050	mg/Kg	1	08-Jun-2018 05:30
m,p-Xylene	ND		0.0099	mg/Kg	1	08-Jun-2018 05:30
o-Xylene	ND		0.0050	mg/Kg	1	08-Jun-2018 05:30
Toluene	ND		0.0050	mg/Kg	1	08-Jun-2018 05:30
Xylenes, Total	ND		0.0050	mg/Kg	1	08-Jun-2018 05:30
Surr: 1,2-Dichloroethane-d4	*91.0*		*70-126*	*%REC*	*1*	*08-Jun-2018 05:30*
Surr: 4-Bromofluorobenzene	*103*		*70-130*	*%REC*	*1*	*08-Jun-2018 05:30*
Surr: Dibromofluoromethane	*93.0*		*70-130*	*%REC*	*1*	*08-Jun-2018 05:30*
Surr: Toluene-d8	*105*		*70-130*	*%REC*	*1*	*08-Jun-2018 05:30*
GASOLINE RANGE ORGANICS BY SW8015C		**Method:SW8015**				Analyst: CL
Gasoline Range Organics	ND		0.050	mg/Kg	1	08-Jun-2018 18:18
Surr: 4-Bromofluorobenzene	*109*		*70-123*	*%REC*	*1*	*08-Jun-2018 18:18*
TPH DRO/ORO BY SW8015C		**Method:SW8015M**		Prep:SW3541 / 08-Jun-2018		Analyst: AP
TPH (Diesel Range)	ND		1.7	mg/Kg	1	13-Jun-2018 05:14
TPH (Motor Oil Range)	**11**	n	**3.4**	**mg/Kg**	1	13-Jun-2018 05:14
Surr: 2-Fluorobiphenyl	*72.1*		*60-129*	*%REC*	*1*	*13-Jun-2018 05:14*
ANIONS BY E300.0		**Method:E300**		Prep:E300 / 08-Jun-2018		Analyst: KMU
Chloride	**11.3**		**4.94**	**mg/Kg**	1	11-Jun-2018 18:24

Note: See Qualifiers Page for a list of qualifiers and their explanation.

WEIGHT LOG

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

Batch ID: 2449 **Method:** VOLATILES BY SW8260C

SampID	Container	Sample Wt/Vol	Final Volume	Weight Factor	Container Type
HS18060287-01	1	5.068 (g)	5 (mL)	0.99	Bulk (5030B)
HS18060287-02	1	5.145 (g)	5 (mL)	0.97	Bulk (5030B)
HS18060287-03	1	5.022 (g)	5 (mL)	1	Bulk (5030B)
HS18060287-04	1	5 (g)	5 (mL)	1	Bulk (5030B)
HS18060287-05	1	5.055 (g)	5 (mL)	0.99	Bulk (5030B)
HS18060287-06	1	0.56 (g)	0.5 (mL)	0.89	Bulk (5030B)
HS18060287-06	1	0.56 (g)	0.5 (mL)	0.99	Bulk (5030B)
HS18060287-07	1	5.091 (g)	5 (mL)	0.98	Bulk (5030B)
HS18060287-08	1	5.029 (g)	5 (mL)	0.99	Bulk (5030B)
HS18060287-09	1	5.026 (g)	5 (mL)	0.99	Bulk (5030B)
HS18060287-10	1	4.99 (g)	5 (mL)	1	Bulk (5030B)
HS18060287-11	1	5.08 (g)	5 (mL)	0.98	Bulk (5030B)
HS18060287-12	1	5.032 (g)	5 (mL)	0.99	Bulk (5030B)

Batch ID: 2452 **Method:** GASOLINE RANGE ORGANICS BY SW8015C **Prep:**

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS18060287-01	1	5.91 (g)	5 (mL)	0.85	Bulk (5030B)
HS18060287-02	1	5.01 (g)	5 (mL)	1	Bulk (5030B)
HS18060287-03	1	5.05 (g)	5 (mL)	0.99	Bulk (5030B)
HS18060287-04	1	5.07 (g)	5 (mL)	0.99	Bulk (5030B)
HS18060287-05	1	5.05 (g)	5 (mL)	0.99	Bulk (5030B)
HS18060287-06	1	5.07 (g)	5 (mL)	0.99	Bulk (5030B)
HS18060287-07	1	5.07 (g)	5 (mL)	0.99	Bulk (5030B)
HS18060287-08	1	5.01 (g)	5 (mL)	1	Bulk (5030B)
HS18060287-09	1	5.04 (g)	5 (mL)	1	Bulk (5030B)
HS18060287-10	1	5.05 (g)	5 (mL)	0.99	Bulk (5030B)
HS18060287-11	1	5.07 (g)	5 (mL)	0.99	Bulk (5030B)
HS18060287-12	1	5 (g)	5 (mL)	1	Bulk (5030B)

Batch ID: 129222 **Method:** TPH DRO/ORO BY SW8015C **Prep:** 8015SPR_LL

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18060287-01	1	30.02	1.5 (mL)	0.04997
HS18060287-02	1	30.05	1 (mL)	0.03328
HS18060287-03	1	30.08	1 (mL)	0.03324
HS18060287-04	1	30.07	1 (mL)	0.03326
HS18060287-05	1	30.05	1.5 (mL)	0.04992
HS18060287-06	1	30.02	1 (mL)	0.03331
HS18060287-07	1	30.04	1 (mL)	0.03329
HS18060287-08	1	30.07	1 (mL)	0.03326
HS18060287-09	1	30.08	2 (mL)	0.06649
HS18060287-10	1	30.09	1 (mL)	0.03323
HS18060287-11	1	30.04	1 (mL)	0.03329
HS18060287-12	1	30.05	1 (mL)	0.03328

WEIGHT LOG

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

Batch ID: 129235 **Method:** ANIONS BY E300.0 **Prep:** 300_S_PR

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18060287-01	1	5.0128	50 (mL)	9.974
HS18060287-02	1	5.0718	50 (mL)	9.858
HS18060287-03	1	5.0081	50 (mL)	9.984
HS18060287-04	1	5.0041	50 (mL)	9.992
HS18060287-05	1	5.0554	50 (mL)	9.89
HS18060287-06	1	5.0461	50 (mL)	9.909
HS18060287-07	1	5.0455	50 (mL)	9.91
HS18060287-08	1	5.8728	50 (mL)	8.514
HS18060287-09	1	5.0346	50 (mL)	9.931
HS18060287-10	1	5.0441	50 (mL)	9.913
HS18060287-11	1	5.1029	50 (mL)	9.798
HS18060287-12	1	5.0658	50 (mL)	9.87

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 129222	**Test Name :** TPH DRO/ORO BY SW8015C			**Matrix:** Soil		
HS18060287-01	S-1 1'	04 Jun 2018 06:45		08 Jun 2018 16:00	12 Jun 2018 20:54	500
HS18060287-02	S-1 2'	04 Jun 2018 06:50		08 Jun 2018 16:00	12 Jun 2018 21:42	5
HS18060287-03	S-1 3'	04 Jun 2018 06:55		08 Jun 2018 16:00	13 Jun 2018 00:05	1
HS18060287-04	S-1 4'	04 Jun 2018 07:00		08 Jun 2018 16:00	13 Jun 2018 01:17	1
HS18060287-05	S-2 1'	04 Jun 2018 07:10		08 Jun 2018 16:00	13 Jun 2018 01:40	500
HS18060287-06	S-2 2'	04 Jun 2018 07:15		08 Jun 2018 16:00	13 Jun 2018 02:28	1
HS18060287-07	S-2 3'	04 Jun 2018 07:20		08 Jun 2018 16:00	13 Jun 2018 02:51	1
HS18060287-08	S-2 4'	04 Jun 2018 07:25		08 Jun 2018 16:00	13 Jun 2018 03:15	1
HS18060287-09	S-3 1'	04 Jun 2018 07:35		08 Jun 2018 16:00	13 Jun 2018 03:39	200
HS18060287-10	S-3 2'	04 Jun 2018 07:40		08 Jun 2018 16:00	13 Jun 2018 04:26	1
HS18060287-11	S-3 3'	04 Jun 2018 07:45		08 Jun 2018 16:00	13 Jun 2018 04:50	1
HS18060287-12	S-3 4'	04 Jun 2018 07:50		08 Jun 2018 16:00	13 Jun 2018 05:14	1
Batch ID 129235	**Test Name :** ANIONS BY E300.0			**Matrix:** Soil		
HS18060287-01	S-1 1'	04 Jun 2018 06:45		08 Jun 2018 12:00	11 Jun 2018 12:36	1
HS18060287-02	S-1 2'	04 Jun 2018 06:50		08 Jun 2018 12:00	11 Jun 2018 12:58	1
HS18060287-03	S-1 3'	04 Jun 2018 06:55		08 Jun 2018 12:00	11 Jun 2018 13:20	1
HS18060287-04	S-1 4'	04 Jun 2018 07:00		08 Jun 2018 12:00	11 Jun 2018 13:42	1
HS18060287-05	S-2 1'	04 Jun 2018 07:10		08 Jun 2018 12:00	11 Jun 2018 16:13	1
HS18060287-06	S-2 2'	04 Jun 2018 07:15		08 Jun 2018 12:00	11 Jun 2018 15:08	1
HS18060287-07	S-2 3'	04 Jun 2018 07:20		08 Jun 2018 12:00	11 Jun 2018 16:35	1
HS18060287-08	S-2 4'	04 Jun 2018 07:25		08 Jun 2018 12:00	11 Jun 2018 16:57	1
HS18060287-09	S-3 1'	04 Jun 2018 07:35		08 Jun 2018 12:00	11 Jun 2018 17:18	1
HS18060287-10	S-3 2'	04 Jun 2018 07:40		08 Jun 2018 12:00	11 Jun 2018 17:40	1
HS18060287-11	S-3 3'	04 Jun 2018 07:45		08 Jun 2018 12:00	11 Jun 2018 18:02	1
HS18060287-12	S-3 4'	04 Jun 2018 07:50		08 Jun 2018 12:00	11 Jun 2018 18:24	1
Batch ID R317598	**Test Name :** VOLATILES BY SW8260C			**Matrix:** Soil		
HS18060287-02	S-1 2'	04 Jun 2018 06:50			07 Jun 2018 23:39	1
HS18060287-03	S-1 3'	04 Jun 2018 06:55			08 Jun 2018 02:23	1
HS18060287-04	S-1 4'	04 Jun 2018 07:00			08 Jun 2018 02:47	1
HS18060287-06	S-2 2'	04 Jun 2018 07:15			08 Jun 2018 03:10	1
HS18060287-07	S-2 3'	04 Jun 2018 07:20			08 Jun 2018 03:33	1
HS18060287-08	S-2 4'	04 Jun 2018 07:25			08 Jun 2018 03:57	1
HS18060287-11	S-3 3'	04 Jun 2018 07:45			08 Jun 2018 05:07	1
HS18060287-12	S-3 4'	04 Jun 2018 07:50			08 Jun 2018 05:30	1
Batch ID R317605	**Test Name :** VOLATILES BY SW8260C			**Matrix:** Soil		
HS18060287-06	S-2 2'	04 Jun 2018 07:15			08 Jun 2018 16:56	10

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID R317671	**Test Name :** GASOLINE RANGE ORGANICS BY SW8015C			**Matrix:** Soil		
HS18060287-02	S-1 2'	04 Jun 2018 06:50			08 Jun 2018 13:57	1
HS18060287-03	S-1 3'	04 Jun 2018 06:55			08 Jun 2018 13:41	1
HS18060287-04	S-1 4'	04 Jun 2018 07:00			08 Jun 2018 15:35	1
HS18060287-06	S-2 2'	04 Jun 2018 07:15			08 Jun 2018 16:08	1
HS18060287-07	S-2 3'	04 Jun 2018 07:20			08 Jun 2018 16:24	1
HS18060287-08	S-2 4'	04 Jun 2018 07:25			08 Jun 2018 16:40	1
HS18060287-10	S-3 2'	04 Jun 2018 07:40			08 Jun 2018 17:13	1
HS18060287-11	S-3 3'	04 Jun 2018 07:45			08 Jun 2018 17:29	1
HS18060287-12	S-3 4'	04 Jun 2018 07:50			08 Jun 2018 18:18	1
Batch ID R317681	**Test Name :** VOLATILES BY SW8260C			**Matrix:** Soil		
HS18060287-10	S-3 2'	04 Jun 2018 07:40			09 Jun 2018 12:11	1
Batch ID R317684	**Test Name :** VOLATILES BY SW8260C			**Matrix:** Soil		
HS18060287-01	S-1 1'	04 Jun 2018 06:45			11 Jun 2018 17:39	500
HS18060287-05	S-2 1'	04 Jun 2018 07:10			11 Jun 2018 17:13	500
HS18060287-09	S-3 1'	04 Jun 2018 07:35			11 Jun 2018 16:46	50
Batch ID R317760	**Test Name :** VOLATILES BY SW8260C			**Matrix:** Soil		
HS18060287-01	S-1 1'	04 Jun 2018 06:45			12 Jun 2018 10:09	5000
HS18060287-05	S-2 1'	04 Jun 2018 07:10			12 Jun 2018 09:44	5000
HS18060287-09	S-3 1'	04 Jun 2018 07:35			12 Jun 2018 10:33	500
Batch ID R317908	**Test Name :** GASOLINE RANGE ORGANICS BY SW8015C			**Matrix:** Soil		
HS18060287-01	S-1 1'	04 Jun 2018 06:45			13 Jun 2018 14:53	500
HS18060287-05	S-2 1'	04 Jun 2018 07:10			13 Jun 2018 15:09	500
HS18060287-09	S-3 1'	04 Jun 2018 07:35			13 Jun 2018 13:17	50

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

QC BATCH REPORT

Batch ID: 129222 **Instrument: FID-7** **Method: SW8015M**

MBLK Sample ID: **MBLK-129222** Units: **mg/Kg** Analysis Date: **12-Jun-2018 20:07**
Client ID: Run ID: **FID-7_317915** SeqNo: **4607744** PrepDate: **08-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	ND	1.7								
TPH (Motor Oil Range)	ND	3.4								
Surr: 2-Fluorobiphenyl	*2.338*	*0.10*	*3.33*	*0*	*70.2*	*70 - 130*				

LCS Sample ID: **LCS-129222** Units: **mg/Kg** Analysis Date: **12-Jun-2018 20:31**
Client ID: Run ID: **FID-7_317915** SeqNo: **4607745** PrepDate: **08-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	30.56	1.7	33.33	0	91.7	70 - 130				
TPH (Motor Oil Range)	37.67	3.4	33.33	0	113	70 - 130				
Surr: 2-Fluorobiphenyl	*2.998*	*0.10*	*3.33*	*0*	*90.0*	*70 - 130*				

MS Sample ID: **HS18060287-02MS** Units: **mg/Kg** Analysis Date: **12-Jun-2018 22:30**
Client ID: **S-1 2'** Run ID: **FID-7_317915** SeqNo: **4607748** PrepDate: **08-Jun-2018** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	201	8.5	33.26	148.5	158	70 - 130				SO
TPH (Motor Oil Range)	223.8	17	33.26	162.1	186	70 - 130				SO
Surr: 2-Fluorobiphenyl	*4.475*	*0.50*	*3.323*	*0*	*135*	*60 - 129*				S

MSD Sample ID: **HS18060287-02MSD** Units: **mg/Kg** Analysis Date: **12-Jun-2018 23:17**
Client ID: **S-1 2'** Run ID: **FID-7_317915** SeqNo: **4607749** PrepDate: **08-Jun-2018** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	192.9	8.5	33.23	148.5	134	70 - 130	201	4.12	30	SO
TPH (Motor Oil Range)	216.8	17	33.23	162.1	165	70 - 130	223.8	3.2	30	SO
Surr: 2-Fluorobiphenyl	*4.374*	*0.50*	*3.32*	*0*	*132*	*60 - 129*	*4.475*	*2.27*	*30*	S

The following samples were analyzed in this batch:

HS18060287-01	HS18060287-02	HS18060287-03	HS18060287-04
HS18060287-05	HS18060287-06	HS18060287-07	HS18060287-08
HS18060287-09	HS18060287-10	HS18060287-11	HS18060287-12

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

QC BATCH REPORT

Batch ID: R317671 **Instrument: FID-14** **Method: SW8015**

MBLK Sample ID: **GMBLK-180608** Units: **mg/Kg** Analysis Date: **08-Jun-2018 12:04**
Client ID: Run ID: **FID-14_317671** SeqNo: **4593425** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	ND	0.050								
Surr: 4-Bromofluorobenzene	*0.0835*	*0.0050*	*0.1*	*0*	*83.5*	*75 - 121*				

LCS Sample ID: **GLCS-180608** Units: **mg/Kg** Analysis Date: **08-Jun-2018 11:47**
Client ID: Run ID: **FID-14_317671** SeqNo: **4593424** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9255	0.050	1	0	92.6	72 - 121				
Surr: 4-Bromofluorobenzene	*0.07527*	*0.0050*	*0.1*	*0*	*75.3*	*75 - 121*				

MS Sample ID: **HS18060287-02MS** Units: **mg/Kg** Analysis Date: **08-Jun-2018 15:02**
Client ID: **S-1 2'** Run ID: **FID-14_317671** SeqNo: **4593434** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.763	0.050	1	1.762	0.0676	70 - 130				S
Surr: 4-Bromofluorobenzene	*0.09139*	*0.0050*	*0.1*	*0*	*91.4*	*70 - 123*				

MSD Sample ID: **HS18060287-02MSD** Units: **mg/Kg** Analysis Date: **08-Jun-2018 15:18**
Client ID: **S-1 2'** Run ID: **FID-14_317671** SeqNo: **4593435** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.725	0.050	1	1.762	-3.73	70 - 130	1.763	2.18	30	S
Surr: 4-Bromofluorobenzene	*0.08462*	*0.0050*	*0.1*	*0*	*84.6*	*70 - 123*	*0.09139*	*7.69*	*30*	

The following samples were analyzed in this batch: HS18060287-02 HS18060287-03 HS18060287-04 HS18060287-06 HS18060287-07 HS18060287-08 HS18060287-10 HS18060287-11 HS18060287-12

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

QC BATCH REPORT

Batch ID: R317908 **Instrument: FID-14** **Method: SW8015**

MBLK Sample ID: **GBLKW-180613** Units: **mg/L** Analysis Date: **13-Jun-2018 11:56**
Client ID: Run ID: **FID-14_317908** SeqNo: **4607588** PrepDate: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	ND	2.50								
Surr: 4-Bromofluorobenzene	*4.293*	*0.250*	*5*	*0*	*85.9*	*70 - 121*				

LCS Sample ID: **GLCSW-180613** Units: **mg/L** Analysis Date: **13-Jun-2018 11:24**
Client ID: Run ID: **FID-14_317908** SeqNo: **4607587** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.115	0.0500	1	0	112	73 - 112				
Surr: 4-Bromofluorobenzene	*0.1027*	*0.00500*	*0.1*	*0*	*103*	*70 - 121*				

MS Sample ID: **HS18060368-23MS** Units: **mg/L** Analysis Date: **13-Jun-2018 12:28**
Client ID: Run ID: **FID-14_317908** SeqNo: **4607822** PrepDate: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	58.85	2.50	50	2.809	112	70 - 130				
Surr: 4-Bromofluorobenzene	*5.111*	*0.250*	*5*	*0*	*102*	*70 - 123*				

MSD Sample ID: **HS18060368-23MSD** Units: **mg/L** Analysis Date: **13-Jun-2018 12:44**
Client ID: Run ID: **FID-14_317908** SeqNo: **4607823** PrepDate: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	56.55	2.50	50	2.809	107	70 - 130	58.85	3.98	20	
Surr: 4-Bromofluorobenzene	*4.972*	*0.250*	*5*	*0*	*99.4*	*70 - 123*	*5.111*	*2.77*	*20*	

The following samples were analyzed in this batch: HS18060287-01 HS18060287-05 HS18060287-09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

QC BATCH REPORT

Batch ID: R317598 **Instrument: VOA5** **Method: SW8260**

MBLK Sample ID: **VBLKS1-060818** Units: **ug/Kg** Analysis Date: **07-Jun-2018 22:29**
Client ID: Run ID: **VOA5_317598** SeqNo: **4591799** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	5.0								
Ethylbenzene	ND	5.0								
m,p-Xylene	ND	10								
o-Xylene	ND	5.0								
Toluene	ND	5.0								
Xylenes, Total	ND	5.0								
Surr: 1,2-Dichloroethane-d4	*47.45*	*0*	*50*	*0*	*94.9*	*76 - 125*				
Surr: 4-Bromofluorobenzene	*48.47*	*0*	*50*	*0*	*96.9*	*83 - 120*				
Surr: Dibromofluoromethane	*47.71*	*0*	*50*	*0*	*95.4*	*80 - 119*				
Surr: Toluene-d8	*49.99*	*0*	*50*	*0*	*100.0*	*81 - 118*				

LCS Sample ID: **VLCSS1-060818** Units: **ug/Kg** Analysis Date: **07-Jun-2018 21:42**
Client ID: Run ID: **VOA5_317598** SeqNo: **4591798** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	45.12	5.0	50	0	90.2	75 - 124				
Ethylbenzene	44.84	5.0	50	0	89.7	70 - 123				
m,p-Xylene	89.88	10	100	0	89.9	77 - 125				
o-Xylene	45.44	5.0	50	0	90.9	78 - 122				
Toluene	44.95	5.0	50	0	89.9	76 - 122				
Xylenes, Total	135.3	5.0	150	0	90.2	77 - 128				
Surr: 1,2-Dichloroethane-d4	*50.47*	*0*	*50*	*0*	*101*	*76 - 125*				
Surr: 4-Bromofluorobenzene	*51.45*	*0*	*50*	*0*	*103*	*83 - 120*				
Surr: Dibromofluoromethane	*51.01*	*0*	*50*	*0*	*102*	*80 - 119*				
Surr: Toluene-d8	*50.82*	*0*	*50*	*0*	*102*	*81 - 118*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

QC BATCH REPORT

Batch ID: R317598 **Instrument: VOA5** **Method: SW8260**

MS Sample ID: **HS18060287-02MS** Units: **ug/Kg** Analysis Date: **08-Jun-2018 00:03**
Client ID: **S-1 2'** Run ID: **VOA5_317598** SeqNo: **4591803** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	36.69	4.9	49	2.953	68.9	70 - 130				S
Ethylbenzene	42.92	4.9	49	12.39	62.3	70 - 130				S
m,p-Xylene	109.9	9.8	98	63.01	47.8	70 - 130				S
o-Xylene	61.53	4.9	49	41.46	41.0	70 - 130				S
Toluene	58.21	4.9	49	31.65	54.2	70 - 130				S
Xylenes, Total	171.4	4.9	147	104.5	45.5	70 - 130				S
Surr: 1,2-Dichloroethane-d4	*49.19*	*0*	*49*	*0*	*100*	*70 - 126*				
Surr: 4-Bromofluorobenzene	*49.58*	*0*	*49*	*0*	*101*	*70 - 130*				
Surr: Dibromofluoromethane	*50.17*	*0*	*49*	*0*	*102*	*70 - 130*				
Surr: Toluene-d8	*47.89*	*0*	*49*	*0*	*97.7*	*70 - 130*				

MSD Sample ID: **HS18060287-02MSD** Units: **ug/Kg** Analysis Date: **08-Jun-2018 00:26**
Client ID: **S-1 2'** Run ID: **VOA5_317598** SeqNo: **4591804** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	40.86	5.0	49.5	2.953	76.6	70 - 130	36.69	10.7	30	
Ethylbenzene	48.37	5.0	49.5	12.39	72.7	70 - 130	42.92	12	30	
m,p-Xylene	122.8	9.9	99	63.01	60.4	70 - 130	109.9	11.1	30	S
o-Xylene	68.99	5.0	49.5	41.46	55.6	70 - 130	61.53	11.4	30	S
Toluene	67.04	5.0	49.5	31.65	71.5	70 - 130	58.21	14.1	30	
Xylenes, Total	191.8	5.0	148.5	104.5	58.8	70 - 130	171.4	11.2	30	S
Surr: 1,2-Dichloroethane-d4	*48.94*	*0*	*49.5*	*0*	*98.9*	*70 - 126*	*49.19*	*0.511*	*30*	
Surr: 4-Bromofluorobenzene	*51.18*	*0*	*49.5*	*0*	*103*	*70 - 130*	*49.58*	*3.18*	*30*	
Surr: Dibromofluoromethane	*49.16*	*0*	*49.5*	*0*	*99.3*	*70 - 130*	*50.17*	*2.04*	*30*	
Surr: Toluene-d8	*51.35*	*0*	*49.5*	*0*	*104*	*70 - 130*	*47.89*	*6.98*	*30*	

The following samples were analyzed in this batch:

HS18060287-02	HS18060287-03	HS18060287-04	HS18060287-06
HS18060287-07	HS18060287-08	HS18060287-11	HS18060287-12

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

QC BATCH REPORT

Batch ID: R317605 **Instrument: VOA5** **Method: SW8260**

MBLK Sample ID: **VBLKS2-060818** Units: **ug/Kg** Analysis Date: **08-Jun-2018 09:24**
Client ID: Run ID: **VOA5_317605** SeqNo: **4592151** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
m,p-Xylene	ND	10								
o-Xylene	ND	5.0								
Toluene	ND	5.0								
Xylenes, Total	ND	5.0								
Surr: 1,2-Dichloroethane-d4	*46.77*	*0*	*50*	*0*	*93.5*	*76 - 125*				
Surr: 4-Bromofluorobenzene	*50.47*	*0*	*50*	*0*	*101*	*83 - 120*				
Surr: Dibromofluoromethane	*47.92*	*0*	*50*	*0*	*95.8*	*80 - 119*				
Surr: Toluene-d8	*51.62*	*0*	*50*	*0*	*103*	*81 - 118*				

LCS Sample ID: **VLCSS2-060818** Units: **ug/Kg** Analysis Date: **08-Jun-2018 08:37**
Client ID: Run ID: **VOA5_317605** SeqNo: **4592150** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
m,p-Xylene	105.8	10	100	0	106	77 - 125				
o-Xylene	52.08	5.0	50	0	104	78 - 122				
Toluene	51.99	5.0	50	0	104	76 - 122				
Xylenes, Total	157.9	5.0	150	0	105	77 - 128				
Surr: 1,2-Dichloroethane-d4	*50.33*	*0*	*50*	*0*	*101*	*76 - 125*				
Surr: 4-Bromofluorobenzene	*51.6*	*0*	*50*	*0*	*103*	*83 - 120*				
Surr: Dibromofluoromethane	*51.63*	*0*	*50*	*0*	*103*	*80 - 119*				
Surr: Toluene-d8	*50.68*	*0*	*50*	*0*	*101*	*81 - 118*				

MS Sample ID: **HS18060192-04MS** Units: **ug/Kg** Analysis Date: **08-Jun-2018 13:21**
Client ID: Run ID: **VOA5_317605** SeqNo: **4592801** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
m,p-Xylene	102.2	8.7	87	0	118	70 - 130				
o-Xylene	50.12	4.4	43.5	0	115	70 - 130				
Toluene	50.38	4.4	43.5	0	116	70 - 130				
Xylenes, Total	152.4	4.4	130.5	0	117	70 - 130				
Surr: 1,2-Dichloroethane-d4	*36.79*	*0*	*43.5*	*0*	*84.6*	*70 - 126*				
Surr: 4-Bromofluorobenzene	*41.57*	*0*	*43.5*	*0*	*95.6*	*70 - 130*				
Surr: Dibromofluoromethane	*39.29*	*0*	*43.5*	*0*	*90.3*	*70 - 130*				
Surr: Toluene-d8	*42.47*	*0*	*43.5*	*0*	*97.6*	*70 - 130*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

QC BATCH REPORT

Batch ID: R317605 **Instrument: VOA5** **Method: SW8260**

MSD Sample ID: **HS18060192-04MSD** Units: **ug/Kg** Analysis Date: **08-Jun-2018 13:45**
Client ID: Run ID: **VOA5_317605** SeqNo: **4592802** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
m,p-Xylene	96.65	8.1	81	0	119	70 - 130	102.2	5.61	30	
o-Xylene	48.2	4.0	40.5	0	119	70 - 130	50.12	3.91	30	
Toluene	47.59	4.0	40.5	0	118	70 - 130	50.38	5.7	30	
Xylenes, Total	144.9	4.0	121.5	0	119	70 - 130	152.4	5.05	30	
Surr: 1,2-Dichloroethane-d4	*36.4*	*0*	*40.5*	*0*	*89.9*	*70 - 126*	*36.79*	*1.07*	*30*	
Surr: 4-Bromofluorobenzene	*39.83*	*0*	*40.5*	*0*	*98.3*	*70 - 130*	*41.57*	*4.28*	*30*	
Surr: Dibromofluoromethane	*37.96*	*0*	*40.5*	*0*	*93.7*	*70 - 130*	*39.29*	*3.44*	*30*	
Surr: Toluene-d8	*39.09*	*0*	*40.5*	*0*	*96.5*	*70 - 130*	*42.47*	*8.28*	*30*	

The following samples were analyzed in this batch: HS18060287-06

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

QC BATCH REPORT

Batch ID: R317681 **Instrument: VOA5** **Method: SW8260**

MBLK Sample ID: **VBLKS2-060918** Units: **ug/Kg** Analysis Date: **09-Jun-2018 10:13**
Client ID: Run ID: **VOA5_317681** SeqNo: **4593945** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	5.0								
Ethylbenzene	ND	5.0								
m,p-Xylene	ND	10								
o-Xylene	ND	5.0								
Toluene	ND	5.0								
Xylenes, Total	ND	5.0								
Surr: 1,2-Dichloroethane-d4	*41.54*	*0*	*50*	*0*	*83.1*	*76 - 125*				
Surr: 4-Bromofluorobenzene	*47.76*	*0*	*50*	*0*	*95.5*	*83 - 120*				
Surr: Dibromofluoromethane	*44.15*	*0*	*50*	*0*	*88.3*	*80 - 119*				
Surr: Toluene-d8	*49.21*	*0*	*50*	*0*	*98.4*	*81 - 118*				

LCS Sample ID: **VLCSS2-060918** Units: **ug/Kg** Analysis Date: **09-Jun-2018 09:27**
Client ID: Run ID: **VOA5_317681** SeqNo: **4593944** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	50.98	5.0	50	0	102	75 - 124				
Ethylbenzene	52.89	5.0	50	0	106	70 - 123				
m,p-Xylene	106.8	10	100	0	107	77 - 125				
o-Xylene	52.69	5.0	50	0	105	78 - 122				
Toluene	52.54	5.0	50	0	105	76 - 122				
Xylenes, Total	159.5	5.0	150	0	106	77 - 128				
Surr: 1,2-Dichloroethane-d4	*43.25*	*0*	*50*	*0*	*86.5*	*76 - 125*				
Surr: 4-Bromofluorobenzene	*49.44*	*0*	*50*	*0*	*98.9*	*83 - 120*				
Surr: Dibromofluoromethane	*44.52*	*0*	*50*	*0*	*89.0*	*80 - 119*				
Surr: Toluene-d8	*48.54*	*0*	*50*	*0*	*97.1*	*81 - 118*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

QC BATCH REPORT

Batch ID: R317681 **Instrument: VOA5** **Method: SW8260**

MS Sample ID: **HS18060369-01MS** Units: **ug/Kg** Analysis Date: **09-Jun-2018 12:34**
Client ID: Run ID: **VOA5_317681** SeqNo: **4593951** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	43.21	5.0	49.5	0	87.3	70 - 130				
Ethylbenzene	42.87	5.0	49.5	0	86.6	70 - 130				
m,p-Xylene	85.29	9.9	99	0	86.1	70 - 130				
o-Xylene	43.02	5.0	49.5	0	86.9	70 - 130				
Toluene	43.63	5.0	49.5	0	88.1	70 - 130				
Xylenes, Total	128.3	5.0	148.5	0	86.4	70 - 130				
Surr: 1,2-Dichloroethane-d4	*40.55*	*0*	*49.5*	*0*	*81.9*	*70 - 126*				
Surr: 4-Bromofluorobenzene	*47.42*	*0*	*49.5*	*0*	*95.8*	*70 - 130*				
Surr: Dibromofluoromethane	*43.73*	*0*	*49.5*	*0*	*88.3*	*70 - 130*				
Surr: Toluene-d8	*48.22*	*0*	*49.5*	*0*	*97.4*	*70 - 130*				

MSD Sample ID: **HS18060369-01MSD** Units: **ug/Kg** Analysis Date: **09-Jun-2018 12:57**
Client ID: Run ID: **VOA5_317681** SeqNo: **4593952** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	42.34	5.0	50	0	84.7	70 - 130	43.21	2.04	30	
Ethylbenzene	41.78	5.0	50	0	83.6	70 - 130	42.87	2.57	30	
m,p-Xylene	81.3	10	100	0	81.3	70 - 130	85.29	4.79	30	
o-Xylene	41.71	5.0	50	0	83.4	70 - 130	43.02	3.09	30	
Toluene	42.26	5.0	50	0	84.5	70 - 130	43.63	3.18	30	
Xylenes, Total	123	5.0	150	0	82.0	70 - 130	128.3	4.22	30	
Surr: 1,2-Dichloroethane-d4	*43.72*	*0*	*50*	*0*	*87.4*	*70 - 126*	*40.55*	*7.52*	*30*	
Surr: 4-Bromofluorobenzene	*49.21*	*0*	*50*	*0*	*98.4*	*70 - 130*	*47.42*	*3.71*	*30*	
Surr: Dibromofluoromethane	*45.69*	*0*	*50*	*0*	*91.4*	*70 - 130*	*43.73*	*4.38*	*30*	
Surr: Toluene-d8	*49.04*	*0*	*50*	*0*	*98.1*	*70 - 130*	*48.22*	*1.69*	*30*	

The following samples were analyzed in this batch: HS18060287-10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

QC BATCH REPORT

Batch ID: R317684 **Instrument: VOA8** **Method: SW8260**

MBLK Sample ID: **MBLKW1-061118** Units: **ug/Kg** Analysis Date: **11-Jun-2018 09:33**
Client ID: Run ID: **VOA8_317684** SeqNo: **4594177** PrepDate: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	250								
Ethylbenzene	ND	250								
m,p-Xylene	ND	500								
o-Xylene	ND	250								
Toluene	ND	250								
Xylenes, Total	ND	250								
Surr: 1,2-Dichloroethane-d4	*2628*	*0*	*2500*	*0*	*105*	*76 - 125*				
Surr: 4-Bromofluorobenzene	*2382*	*0*	*2500*	*0*	*95.3*	*83 - 120*				
Surr: Dibromofluoromethane	*2540*	*0*	*2500*	*0*	*102*	*80 - 119*				
Surr: Toluene-d8	*2675*	*0*	*2500*	*0*	*107*	*81 - 118*				

LCS Sample ID: **VLCSW1-061118** Units: **ug/Kg** Analysis Date: **11-Jun-2018 08:45**
Client ID: Run ID: **VOA8_317684** SeqNo: **4594176** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	43.62	5.0	50	0	87.2	75 - 124				
Ethylbenzene	45.93	5.0	50	0	91.9	70 - 123				
m,p-Xylene	93.85	10	100	0	93.8	77 - 125				
o-Xylene	46.31	5.0	50	0	92.6	78 - 122				
Toluene	43.86	5.0	50	0	87.7	76 - 122				
Xylenes, Total	140.2	5.0	150	0	93.4	77 - 128				
Surr: 1,2-Dichloroethane-d4	*53.64*	*0*	*50*	*0*	*107*	*76 - 125*				
Surr: 4-Bromofluorobenzene	*56*	*0*	*50*	*0*	*112*	*83 - 120*				
Surr: Dibromofluoromethane	*47.25*	*0*	*50*	*0*	*94.5*	*80 - 119*				
Surr: Toluene-d8	*50.48*	*0*	*50*	*0*	*101*	*81 - 118*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

QC BATCH REPORT

Batch ID: R317684 **Instrument: VOA8** **Method: SW8260**

MS Sample ID: **HS18060449-01MS** Units: **ug/Kg** Analysis Date: **11-Jun-2018 14:10**
Client ID: Run ID: **VOA8_317684** SeqNo: **4595535** PrepDate: DF: **500**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	23540	2500	25250	0	93.2	70 - 130				
Ethylbenzene	25520	2500	25250	0	101	70 - 130				
m,p-Xylene	52420	5000	50500	0	104	70 - 130				
o-Xylene	26140	2500	25250	0	104	70 - 130				
Toluene	35660	2500	25250	10750	98.7	70 - 130				
Xylenes, Total	78550	2500	75750	0	104	70 - 130				
Surr: 1,2-Dichloroethane-d4	*27740*	*0*	*25250*	*0*	*110*	*70 - 126*				
Surr: 4-Bromofluorobenzene	*30200*	*0*	*25250*	*0*	*120*	*70 - 130*				
Surr: Dibromofluoromethane	*23560*	*0*	*25250*	*0*	*93.3*	*70 - 130*				
Surr: Toluene-d8	*25080*	*0*	*25250*	*0*	*99.3*	*70 - 130*				

MSD Sample ID: **HS18060449-01MSD** Units: **ug/Kg** Analysis Date: **11-Jun-2018 14:36**
Client ID: Run ID: **VOA8_317684** SeqNo: **4595536** PrepDate: DF: **500**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	24650	2500	25250	0	97.6	70 - 130	23540	4.61	30	
Ethylbenzene	26760	2500	25250	0	106	70 - 130	25520	4.73	30	
m,p-Xylene	55010	5000	50500	0	109	70 - 130	52420	4.82	30	
o-Xylene	26780	2500	25250	0	106	70 - 130	26140	2.44	30	
Toluene	38580	2500	25250	10750	110	70 - 130	35660	7.86	30	
Xylenes, Total	81790	2500	75750	0	108	70 - 130	78550	4.04	30	
Surr: 1,2-Dichloroethane-d4	*26630*	*0*	*25250*	*0*	*105*	*70 - 126*	*27740*	*4.07*	*30*	
Surr: 4-Bromofluorobenzene	*28900*	*0*	*25250*	*0*	*114*	*70 - 130*	*30200*	*4.4*	*30*	
Surr: Dibromofluoromethane	*23960*	*0*	*25250*	*0*	*94.9*	*70 - 130*	*23560*	*1.7*	*30*	
Surr: Toluene-d8	*25220*	*0*	*25250*	*0*	*99.9*	*70 - 130*	*25080*	*0.552*	*30*	

The following samples were analyzed in this batch: HS18060287-01 HS18060287-05 HS18060287-09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

QC BATCH REPORT

Batch ID: R317760 **Instrument: VOA8** **Method: SW8260**

MBLK Sample ID: **MBLKW1-061218** Units: **ug/Kg** Analysis Date: **12-Jun-2018 08:53**
Client ID: Run ID: **VOA8_317760** SeqNo: **4596235** PrepDate: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethylbenzene	ND	250								
m,p-Xylene	ND	500								
o-Xylene	ND	250								
Toluene	ND	250								
Xylenes, Total	ND	250								
Surr: 1,2-Dichloroethane-d4	*2640*	*0*	*2500*	*0*	*106*	*76 - 125*				
Surr: 4-Bromofluorobenzene	*2391*	*0*	*2500*	*0*	*95.7*	*83 - 120*				
Surr: Dibromofluoromethane	*2461*	*0*	*2500*	*0*	*98.5*	*80 - 119*				
Surr: Toluene-d8	*2718*	*0*	*2500*	*0*	*109*	*81 - 118*				

LCS Sample ID: **VLCSW1-061218** Units: **ug/Kg** Analysis Date: **12-Jun-2018 08:04**
Client ID: Run ID: **VOA8_317760** SeqNo: **4596234** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethylbenzene	46.45	5.0	50	0	92.9	70 - 123				
m,p-Xylene	93.83	10	100	0	93.8	77 - 125				
o-Xylene	46.71	5.0	50	0	93.4	78 - 122				
Toluene	44.08	5.0	50	0	88.2	76 - 122				
Xylenes, Total	140.5	5.0	150	0	93.7	77 - 128				
Surr: 1,2-Dichloroethane-d4	*54.97*	*0*	*50*	*0*	*110*	*76 - 125*				
Surr: 4-Bromofluorobenzene	*54.53*	*0*	*50*	*0*	*109*	*83 - 120*				
Surr: Dibromofluoromethane	*47.71*	*0*	*50*	*0*	*95.4*	*80 - 119*				
Surr: Toluene-d8	*52.48*	*0*	*50*	*0*	*105*	*81 - 118*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

QC BATCH REPORT

Batch ID: R317760 **Instrument: VOA8** **Method: SW8260**

MS Sample ID: **HS18060287-05MS** Units: **ug/Kg** Analysis Date: **12-Jun-2018 10:59**
Client ID: **S-2 1'** Run ID: **VOA8_317760** SeqNo: **4596813** PrepDate: DF: **5000**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethylbenzene	294500	25000	247500	28370	108	70 - 130				
m,p-Xylene	641400	50000	495000	97360	110	70 - 130				
o-Xylene	319600	25000	247500	49370	109	70 - 130				
Toluene	333500	25000	247500	81880	102	70 - 130				
Xylenes, Total	960900	25000	742500	146700	110	70 - 130				
Surr: 1,2-Dichloroethane-d4	*224100*	*0*	*247500*	*0*	*90.5*	*70 - 126*				
Surr: 4-Bromofluorobenzene	*281300*	*0*	*247500*	*0*	*114*	*70 - 130*				
Surr: Dibromofluoromethane	*232700*	*0*	*247500*	*0*	*94.0*	*70 - 130*				
Surr: Toluene-d8	*257700*	*0*	*247500*	*0*	*104*	*70 - 130*				

MSD Sample ID: **HS18060287-05MSD** Units: **ug/Kg** Analysis Date: **12-Jun-2018 11:24**
Client ID: **S-2 1'** Run ID: **VOA8_317760** SeqNo: **4596814** PrepDate: DF: **5000**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethylbenzene	311200	25000	247500	28370	114	70 - 130	294500	5.52	30	
m,p-Xylene	673500	50000	495000	97360	116	70 - 130	641400	4.9	30	
o-Xylene	335100	25000	247500	49370	115	70 - 130	319600	4.74	30	
Toluene	345200	25000	247500	81880	106	70 - 130	333500	3.47	30	
Xylenes, Total	1009000	25000	742500	146700	116	70 - 130	960900	4.84	30	
Surr: 1,2-Dichloroethane-d4	*223900*	*0*	*247500*	*0*	*90.4*	*70 - 126*	*224100*	*0.109*	*30*	
Surr: 4-Bromofluorobenzene	*282100*	*0*	*247500*	*0*	*114*	*70 - 130*	*281300*	*0.283*	*30*	
Surr: Dibromofluoromethane	*231500*	*0*	*247500*	*0*	*93.5*	*70 - 130*	*232700*	*0.537*	*30*	
Surr: Toluene-d8	*256000*	*0*	*247500*	*0*	*103*	*70 - 130*	*257700*	*0.661*	*30*	

The following samples were analyzed in this batch: HS18060287-01 HS18060287-05 HS18060287-09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

QC BATCH REPORT

Batch ID: 129235 **Instrument: ICS3K2** **Method: E300**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
MBLK Sample ID: **MBLK-129235** Units: **mg/Kg** Analysis Date: **09-Jun-2018 03:41**										
Client ID: Run ID: **ICS3K2_317746** SeqNo: **4595720** PrepDate: **08-Jun-2018** DF: **1**										
Chloride	ND	5.00								
LCS Sample ID: **LCS-129235** Units: **mg/Kg** Analysis Date: **09-Jun-2018 04:02**										
Client ID: Run ID: **ICS3K2_317746** SeqNo: **4595721** PrepDate: **08-Jun-2018** DF: **1**										
Chloride	201.8	5.00	200	0	101	90 - 110				
LCSD Sample ID: **LCSD-129235** Units: **mg/Kg** Analysis Date: **09-Jun-2018 04:24**										
Client ID: Run ID: **ICS3K2_317746** SeqNo: **4595722** PrepDate: **08-Jun-2018** DF: **1**										
Chloride	203.1	5.00	200	0	102	90 - 110	201.8	0.662	20	
MS Sample ID: **HS18060287-06MS** Units: **mg/Kg** Analysis Date: **11-Jun-2018 15:30**										
Client ID: **S-2 2'** Run ID: **ICS3K2_317746** SeqNo: **4597133** PrepDate: **08-Jun-2018** DF: **1**										
Chloride	106	4.90	98.08	11.62	96.2	75 - 125				
MS Sample ID: **HS18060127-02MS** Units: **mg/Kg** Analysis Date: **09-Jun-2018 05:29**										
Client ID: Run ID: **ICS3K2_317746** SeqNo: **4595725** PrepDate: **08-Jun-2018** DF: **1**										
Chloride	120.6	4.95	99.05	23.7	97.9	75 - 125				
MS Sample ID: **HS18060127-01MS** Units: **mg/Kg** Analysis Date: **11-Jun-2018 19:50**										
Client ID: Run ID: **ICS3K2_317746** SeqNo: **4597144** PrepDate: **08-Jun-2018** DF: **1**										
Chloride	135.5	4.95	99.06	35.29	101	75 - 125				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: HS18060287

QC BATCH REPORT

Batch ID: 129235 **Instrument: ICS3K2** **Method: E300**

MSD Sample ID: **HS18060287-06MSD** Units: **mg/Kg** Analysis Date: **11-Jun-2018 15:52**
Client ID: **S-2 2'** Run ID: **ICS3K2_317746** SeqNo: **4597134** PrepDate: **08-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	107.2	4.94	98.75	11.62	96.8	75 - 125	106	1.11	20	

MSD Sample ID: **HS18060127-02MSD** Units: **mg/Kg** Analysis Date: **09-Jun-2018 05:51**
Client ID: Run ID: **ICS3K2_317746** SeqNo: **4595726** PrepDate: **08-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	120.4	4.97	99.3	23.7	97.4	75 - 125	120.6	0.17	20	

MSD Sample ID: **HS18060127-01MSD** Units: **mg/Kg** Analysis Date: **11-Jun-2018 20:12**
Client ID: Run ID: **ICS3K2_317746** SeqNo: **4597145** PrepDate: **08-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	136.9	4.96	99.3	35.29	102	75 - 125	135.5	0.989	20	

The following samples were analyzed in this batch:

HS18060287-01	HS18060287-02	HS18060287-03	HS18060287-04
HS18060287-05	HS18060287-06	HS18060287-07	HS18060287-08
HS18060287-09	HS18060287-10	HS18060287-11	HS18060287-12

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: WSP Parsons Brinckerhoff
Project: Percussion West Lovington
WorkOrder: **HS18060287**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/Kg	Milligrams per Kilogram

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919 2016-2018	31-Jul-2018
Oklahoma	2017-088	31-Aug-2018
North Carolina	624-2018	31-Dec-2018
Louisiana	03087 2017-2018	30-Jun-2018
Arkansas	88-0356	27-Mar-2019
Kansas	E-10352 2017-218	31-Jul-2018
Texas	T10470231-18-21	30-Apr-2019
North Dakota	R193	30-Apr-2019

Sample Receipt Checklist

Client Name:	LBG Addison Texas	Date/Time Received:	**06-Jun-2018 08:48**
Work Order:	HS18060287	Received by:	**PMG**

Checklist completed by: *Paresh M. Giga* eSignature — 6-Jun-2018 Date

Reviewed by: *Bernadette A. Fini* eSignature — 7-Jun-2018 Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
TX1005 solids received in hermetically sealed vials?	Yes ☐	No ☑	N/A ☐
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	0.9c/0.4c U/C	IR11	
Cooler(s)/Kit(s):	Brown		
Date/Time sample(s) sent to storage:	6/6/18 20:45		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes: No dates/times on jar labels

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

ALS Environmental

Cincinnati, OH +1 513 733 5336 | Fort Collins, CO +1 970 490 1511 | Everett, WA +1 425 356 2600 | Holland, MI +1 616 399 6070 | Houston, TX +1 281 530 5656 | Spring City, PA +1 610 948 4903 | South Charleston, WV +1 304 356 3168 | Middletown, PA +1 717 944 5541 | Salt Lake City, UT +1 801 266 7700 | York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 2

COC ID: 140263

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information	
Purchase Order		Project Name	Percussion West Lovington
Work Order		Project Number	
Company Name	WSP USA	Bill To Company	
Send Report To	Matthew Boyle	Invoice Attn	
Address	15305 N Stemmons Suite 1600	Address	Same
City/State/Zip		City/State/Zip	
Phone	817 713 0262	Phone	
Fax		Fax	
e-Mail Address	Matthew.Boyle@wsp.com	e-Mail Address	

Parameter/Method Request for Analysis

- A: TPH GRO / DRO / ORO Extend
- B: BTEX
- C: Chlorides
- D–J:

HS18060287
WSP Parsons Brinckerhoff
Percussion West Lovington

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	S-1 1'	6-4-18	6:45	Soil	Ice	1	/	/	/								
2	S-1 2'		6:50														
3	S-1 3'		6:55														
4	S-1 4'		7:00														
5	S-2 1'		7:10														
6	S-2 2'		7:15														
7	S-2 3'		7:20														
8	S-2 4'		7:25														
9	S-3 1'		7:35														
10	S-3 2'		7:40														

Sampler(s) Please Print & Sign: Matthew Boyle [signature]

Shipment Method: Fed Ex

Required Turnaround Time: (Check Box) ☐ Other ____ ☐ STD 10 Wk Days ☑ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
[signature]	6-5-18	7:30	
Relinquished by:	Date:	Time:	Received by (Laboratory): [signature] 6/6/18 08:48
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Notes:

Cooler ID	Cooler Temp
Brown	u/c 0.9° #11 c/f -0.5°

QC Package: (Check One Box Below)
☐ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Date ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other ____

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Environmental

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+1 970 490 1511 Holland, MI +1 616 399 6070
+1 281 530 5656 Houston, TX
+1 610 948 4903 Spring City, PA
+1 304 356 3168 South Charleston, WV
+1 717 944 5541 Middletown, PA
+1 801 266 7700 Salt Lake City, UT
+1 717 505 5280 York, PA

Chain of Custody Form

COC ID: 141026

ALS Project Manager:		ALS Work Order #:	

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Percussion West Lavington	A	TPH GRO/DRO/ORO Extended
Work Order		Project Number		B	BTEX
Company Name	WSP USA	Bill To Company		C	Chlorides
Send Report To	Matthew Boyle	Invoice Attn		D	
Address	15305 N Stemmons Suite 1600	Address	Same	E	
City/State/Zip	Dallas TX 75207	City/State/Zip		F	
Phone	817 7130262	Phone		G	
Fax		Fax		H	
e-Mail Address	Matthew.Boyle@wsp.com	e-Mail Address		I	
				J	

HS18060287
WSP Parsons Brinckerhoff
Percussion West Lovington

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	S-3 3'	6-4-18	7:45	Soil	Ice	1	✓	✓	✓	✓							
2	S-3 9'	6-4-18	7:50	Soil	Ice	1	✓	✓	✓								
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Martin J Boyle Matthew Boyle

Shipment Method: Fed Ex

Required Turnaround Time: (Check Box) ☐ Other ____ ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Martin J Boyle	6-6-18	7:30	
Relinquished by:	Date:	Time:	Received by (Laboratory):
			6/6/18 8:48
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp

QC Package: (Check One Box Below)
☐ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Date ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other ____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

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