APPROVED
By Olivia Yu at 10:22 am, Jan 29, 2018

October 10, 2017 Reference No. 11135250-5

Mr. Dean Ericson
ETC Field Services LLC
600 N. Marienfeld
Suite 700
Midland, TX 79701

NMOCD grants backfill approval to 1RP-4523.

Dear Mr. Ericson:

Re: Assessment Summary Report
MF-16 Inch
ETC Field Services LLC
1RP 4523
Site Location: Unit K, Sec. 29, T 21-S, R 37-E
(Lat 32.449613N°, Long -103.18858W°)
Lea County, New Mexico

GHD Services, Inc. (GHD) is pleased to present this report for the above referenced site. The MF-16 Inch pipeline (hereafter referred to as the "Site") is located within Unit K, Section 29, Township 21 South, Range 37 East, in Lea County, New Mexico (see Figure 1). The property is privately owned.

On November 17, 2017, a release of approximately 140,000 standard cubic feet (Mscf) of natural gas and seven barrels (bbls) of oil was reported to the State of New Mexico Oil Conservation Division (NMOCD) via Form C-141. A leak from a 16-inch pipeline was the cause of the release. None of the released material was recovered. Contaminated soils were excavated and stockpiled on site (see Figure 2). NMOCD release number 1RP 4523 was assigned.

1. Recommended Remediation Action Limits

Based on information available from the New Mexico Office of the State Engineer New Mexico Water Rights Reporting System website, the closest well with a recorded depth to water measurement is approximately 2.7 miles from the Site. The depth to groundwater measured in this well was 70 feet (ft) below ground surface (bgs).

Based on information available from the United States Geologic Survey National Water Information System, the depth to groundwater at the Site is approximately 98 ft. bgs. This is based on a water well that is located approximately 1.5 mile north, northwest of the Site (see Appendix A, Water Well Reports for depth to water). There are no well head protection areas or surface water bodies within 1000 feet of the Site. Therefore, the preliminary total ranking score is 10 (see table below).

Based on this score, the applicable NMOCD Site specific Recommended Remediation Action Limits (RRALs) are 10 milligrams per kilogram (mg/kg) for benzene, 50 mg/kg for total benzene, toluene,

ethylbenzene, and xylenes (BTEX), 1,000 mg/kg for total petroleum hydrocarbons (TPH), and 600 mg/kg for chlorides.

New Mexico Oil Conservation Division Site Assessment	
Ranking Criteria	Score
Depth to Ground Water (50-99 ft. bgs)	10
Wellhead Protection Area (> 1000 ft. from water source, > 200 ft. from domestic source)	0
Distance to Surface Body Water (>1000 ft.)	0
Ranking Criteria Total Score	**10***
***Because the ranking criteria total score is 10, NMOCD established RRALs are 10 mg/kg for benzene, 50 mg/kg for total BTEX, 1,000 mg/kg for total TPH and 600 ppm for chlorides[1].**	

1. NMOCD Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993 and recent discussions with Mr. Jim Griswold with the NMOCD.

2. Assessment Activities

The impacted area had initially been excavated to a depth of approximately 10 ft. bgs and soil samples were collected by ETC Field Services LLC personnel for laboratory analysis. A sample (BtmHole) was collected from the bottom of the excavation at a depth of approximately 10 ft. bgs on November 8, 2016 (see Figure 2). The sample was submitted to Xenco Laboratories (Xenco) in Midland, Texas and analyzed for toxicity characteristic leaching procedure (TCLP) BTEX by EPA Method 8260B, TPH by EPA Method 8015B, and chloride by EPA Method 300. The analytical results for this sample were:

- TCLP Benzene: 0.568 milligrams per liter (mg/L)
- Total TCLP BTEX: 2.93 mg/L
- TPH: 22,160 milligrams per kilogram (mg/kg)
- Chloride: 8.48 mg/kg

Excavation activities to assess the horizontal and vertical extent of impacted soil from the release occurred on July 6, 2017 by GHD. Field screening of soil for petroleum hydrocarbons was performed to assess the horizontal and vertical extent of contaminated soil. Field screening of the soil was performed using the PetroFLAG Hydrocarbon Analysis System. Excavation activities were performed by Diamond Back of Hobbs, New Mexico and observed by GHD.

Once field screening indicated soil concentrations were near or below the RRALs, soil samples were collected and submitted to Hall Environmental Analysis Laboratory (HEAL) located in Albuquerque, New Mexico for analysis. The soil samples were analyzed for BTEX by EPA Method 8260B and TPH by EPA Method 8015 full range (Table 1).

Five test pits (TP) were excavated, one on each side and one in the base of the original excavation (Figure 2). One sample was collected from TP-5 in the base of the excavation at a depth of 15 ft. bgs and soil samples were collected from four test pits (TP-1 through TP-4) at a depth of 10 ft. bgs for laboratory analysis. The field screening indicated that impacted soil did not extend to a depth greater than 15 ft. bgs.

The laboratory analytical results were all non-detect and thus, below the RRALs. Initial bottom of excavation and stockpile soil samples did not contain chloride concentrations above the RRAL and thus, the confirmation samples were not analyzed for chloride. Laboratory analytical reports can be found in Appendix B and the results summarized in Table 1.

Additional assessment consisting of three test pits (TP-6 through TP-8) was performed by GHD on September 6, 2017. Soil samples were collected at a depth of 14 ft. bgs in TP-6 and TP-7 and at a depth of 6 ft. bgs in TP-8. The soil samples were submitted to HEAL and analyzed for BTEX by EPA Method 8260B, TPH by EPA Method 8015 full range, and chloride by EPA method 300 (Table 1).

The sample collected from TP-6 was the only one that contained a detectable concentration above the laboratory reporting limit for the constituents analyzed for. This sample contained a total TPH concentration of 81 mg/kg.

3. Summary and Recommendations

Soil samples collected from the base of the excavation at a depth of 15 ft. bgs, and the four test pits (see Figure 2) were submitted for laboratory analysis. The laboratory analytical results were all non-detect and thus, below the RRALs. Based on the laboratory results, GHD recommends the following:

- Backfilling of the excavation with clean fill material and wheel compacting to grade.
- Reseed the area with a seed mix that is approved by the land owner.

Following completion of the above activities a request for no further action will be made for the Site. Should you have any questions, or require additional information regarding this submittal, please feel free to contact myself or Bernie Bockisch at (505) 884-0672.

Sincerely,

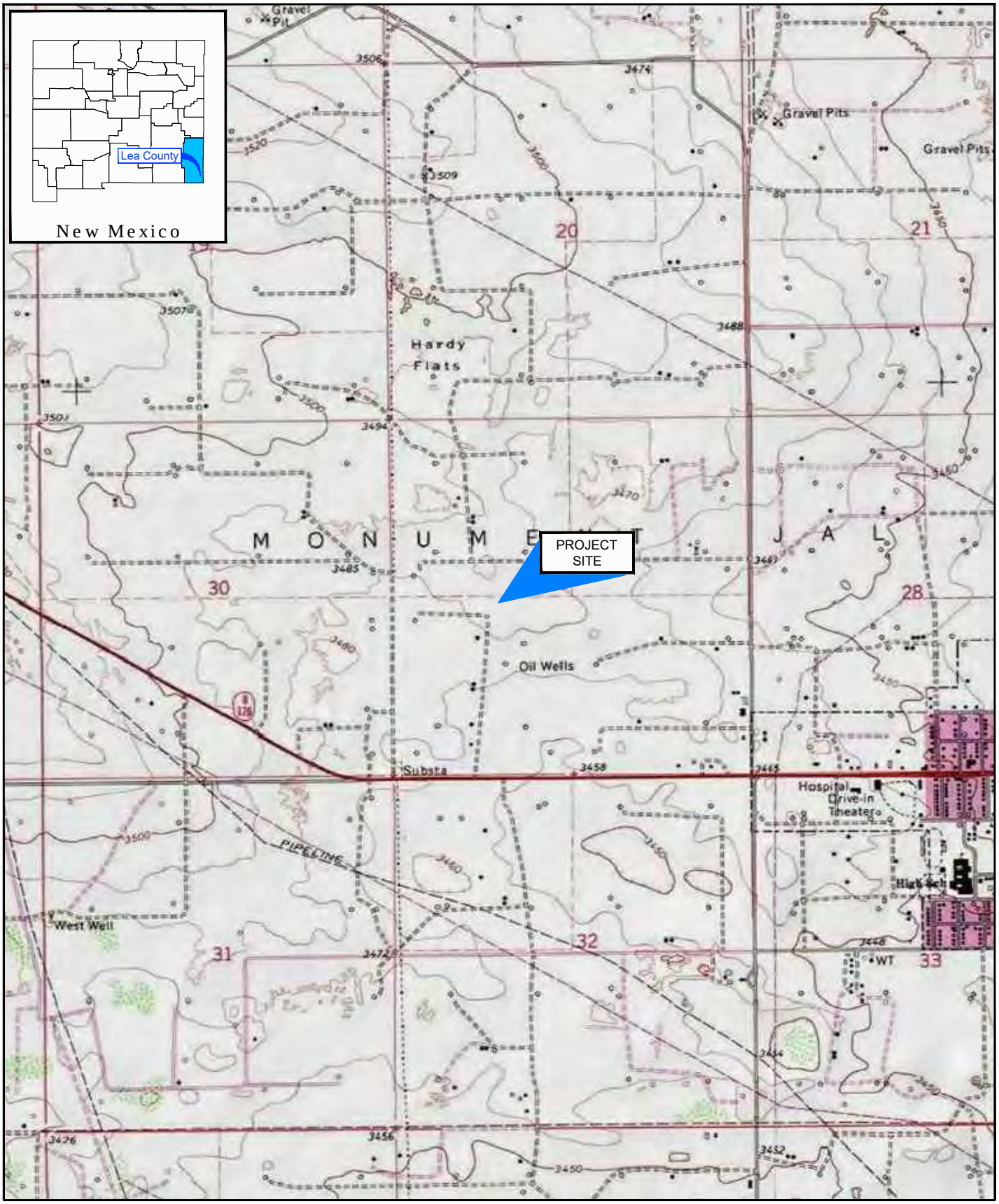
GHD

Alan Brandon
Senior Project Manager

Bernard Bockisch
New Mexico Operations Manager

AB/mc/01

Figures



Source: USGS 7.5 Minute Quad "Eunice, New Mexico"

Lat/Long: 32.449613° North, 103.18858° West

0 1000 2000ft

Coordinate System:
NAD 1983 (2011) StatePlane-
New Mexico East (US Feet)

ETC FIELD SERVICES
LEA COUNTY, NEW MEXICO
MF-16 PIPELINE ASSESSMENT

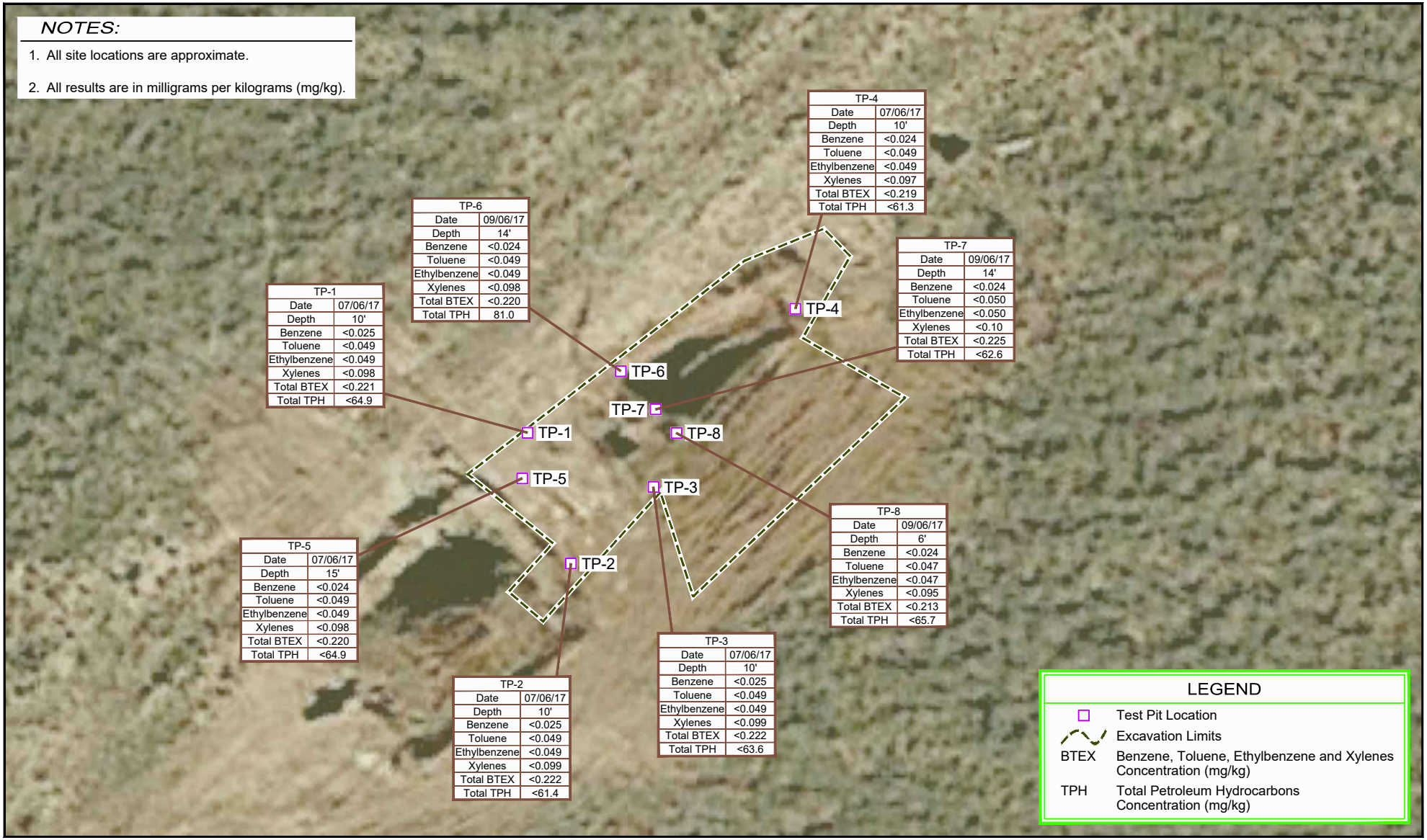
11135250-05

Jul 19, 2017

SITE LOCATION MAP

FIGURE 1

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1113----\11135250-ETC Field Services\11135250-05(000)GN-DL001.dwg



Source: Image © 2017 Google - Imagery Date: November 22, 2016

0 10 20ft
Approximate Scale

N

GHD

ETC FIELD SERVICES
LEA COUNTY, NEW MEXICO
MF-16 PIPELINE ASSESSMENT

11135250-05
Oct 3, 2017

SOIL SAMPLE LOCATION

FIGURE 2

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1113----\11135250-ETC Field Services\11135250-05(000)GN-DL001.dwg

Tables

Table 1

ETC Field Services LLC - MF-16
Section 29, Township 21 South, Range 37 East
Lea County, New Mexico
Soil Analytical Results Summary

Sample ID	Date	Sample Depth	Chlorides	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	TPH	TPH	TPH	Total TPH
		(ft.)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	GRO (C6-C-10)	DRO (C10-C28)	EXT DRO (C28-C36)	GRO/DRO
									(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NMOCD Remediation Action Levels			***600***	***10***	***NE***	***NE***	***NE***	***50***	***NE***	***NE***	***NE***	***1,000***
	EXCAVATION SAMPLES											
WstPile*	11/08/2016	--	18.1	0.154*	0.595*	0.226*	0.505*	1.48*	5,720	12,300	NA	18,020.0
FntWal*	11/08/2016	10	7.38	0.0301*	0.19*	0.114*	0.27*	0.604*	1,900.0	5,970.0	NA	**7,870.0**
BtmHol*	11/08/2016	10	8.48	0.568*	1.05*	0.357*	0.955*	2.93*	7,960.0	14,200.0	NA	**22,160.0**
NsidWal*	11/08/2016	8	7.87	<0.005*	<0.005*	<0.005*	<0.015*	<0.030*	15.3	60.3	NA	75.6
11135250-05-070617-MG-TP-1-10'	07/06/2017	10	NA	<0.025	<0.049	<0.049	<0.098	<0.221	<4.9	<10	<50	<64.9
11135250-05-070617-MG-TP-2-10'	07/06/2017	10	NA	<0.025	<0.049	<0.049	<0.099	<0.222	<4.9	<9.5	<47	<61.4
11135250-05-070617-MG-TP-3-10'	07/06/2017	10	NA	<0.025	<0.049	<0.049	<0.099	<0.222	<4.9	<9.7	<49	<63.6
11135250-05-070617-MG-TP-4-10'	07/06/2017	10	NA	<0.024	<0.049	<0.049	<0.097	<0.219	<4.9	<9.4	<47	<61.3
11135250-05-070617-MG-TP-5-15'	07/06/2017	15	NA	<0.024	<0.049	<0.049	<0.098	<0.220	<4.9	<10	<50	<64.9
S-11135250-05-090617-MG-TP-6-14	09/06/2017	14	<30	<0.024	<0.049	<0.049	<0.098	<0.220	<4.9	32.0	49.0	81.0
S-11135250-05-090617-MG-TP-7-14	09/06/2017	14	<30	<0.025	<0.050	<0.050	<0.10	<0.225	<5.0	<9.6	<48	<62.6
S-11135250-05-090617-MG-TP-8-6	09/06/2017	6	<30	<0.024	<0.047	<0.047	<0.095	<0.213	<4.7	<10.0	<51.0	<65.7

Note: Concentrations that are bold exceed the NMOCD Remediation Action Level

* Samples taken by ETC Field Services (BTEX analyzed by 8260 TCLP and reported in milligrams per liter)
NE = Not Established
mg/Kg = milligrams per Kilogram
-- = Not Applicable
NA = Not Analyzed

Appendices

Appendix A
Water Well Report

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

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

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
L 09966		L	LE	1	2	2	02	17S	37E	667627	3588089	4499	150	70	80

Average Depth to Water: **70 feet**

Minimum Depth: **70 feet**

Maximum Depth: **70 feet**

Record Count: 1

Basin/County Search:

Basin: Lea County County: Lea

UTMNAD83 Radius Search (in meters):

Easting (X): 670275 Northing (Y): 3591727 Radius: 4500 Meters

6/22/17 10:55 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

USGS Home
Contact USGS
Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater | Geographic Area: United States | GO

Click to hideNews Bulletins

MF-16" pipeline ~ 1.5 miles

Please see news on new formats
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 322816103114201

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

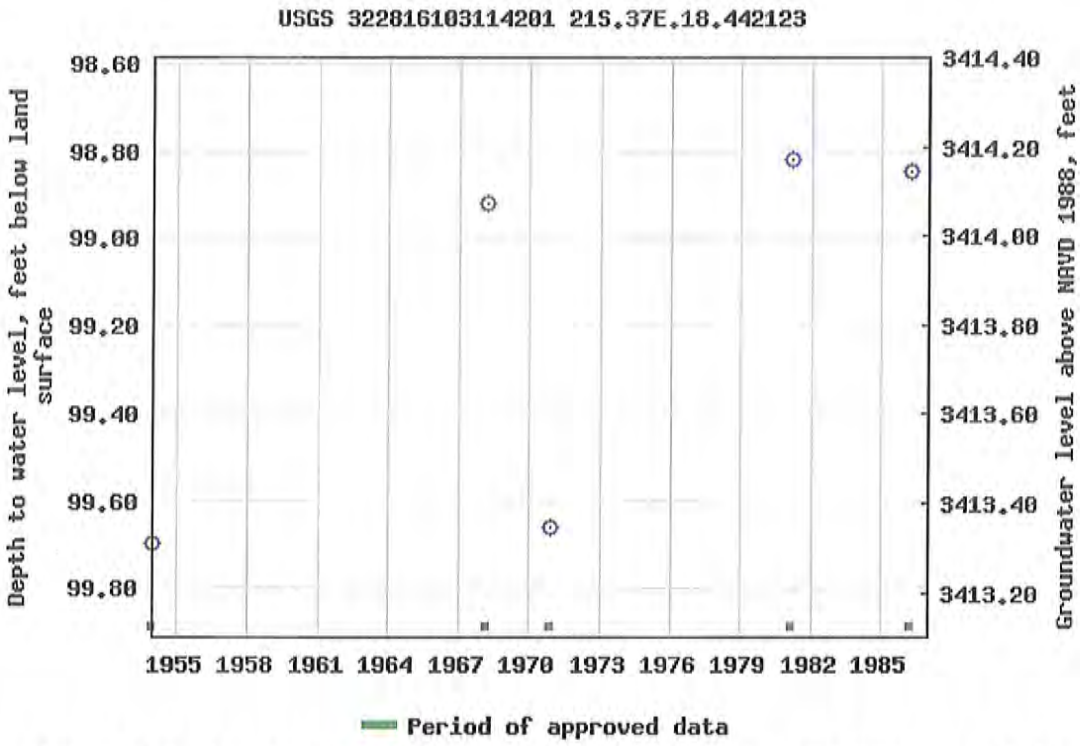
USGS 322816103114201 21S.37E.18.442123

Available data for this site Groundwater: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°28'16", Longitude 103°11'42" NAD27
Land-surface elevation 3,513 feet above NAVD88
The depth of the well is 125 feet below land surface.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2017-06-13 10:30:25 EDT
0.57 0.5 nadww01

Appendix B
Laboratory Analytical Report

Analytical Report 539987

for

Energy Transfer- Midland

Project Manager: Johnnie Bradford

MF-16

15-NOV-16

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Table of Contents

15-NOV-16

Project Manager: **Johnnie Bradford**
Energy Transfer- Midland
600 N Marienfield Ste 700
Midland, TX 79701

Reference: XENCO Report No(s): **539987**
MF-16
Project Address: Eunice NM

Johnnie Bradford:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 539987. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 539987 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 539987

Energy Transfer- Midland, Midland, TX

MF-16

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
WstPile	S	11-08-16 07:40		539987-001
FntWal	S	11-08-16 07:34	- 10 ft	539987-002
BtmHol	S	11-08-16 07:37	- 10 ft	539987-003
NsidWal	S	11-08-16 07:49	- 8 ft	539987-004

Client Name: Energy Transfer- Midland
Project Name: MF-16

Project ID:
Work Order Number(s): *539987*

Report Date: *15-NOV-16*
Date Received: *11/08/2016*

Sample receipt non conformances and comments:

Level III Std QC+Forms

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 539987

Energy Transfer- Midland, Midland, TX

Project Name: MF-16

Project Id:
Contact: Johnnie Bradford
Project Location: Eunice NM

Date Received in Lab: Tue Nov-08-16 02:55 pm
Report Date: 15-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	539987-001		539987-002		539987-003		539987-004					
	Field Id:	WstPile		FntWal		BtmHol		NsidWal					
	Depth:			-10 ft		-10 ft		-8 ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Nov-08-16 07:40		Nov-08-16 07:34		Nov-08-16 07:37		Nov-08-16 07:49					
TCLP BTEX by SW 8260B SUB: TX104704215	*Extracted:*	Nov-11-16 14:00		Nov-11-16 14:00		Nov-11-16 14:00		Nov-11-16 17:00					
	Analyzed:	Nov-11-16 16:39		Nov-11-16 15:42		Nov-11-16 16:01		Nov-11-16 17:27					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL				
Benzene		0.154	0.0100	0.0301	0.0100	0.568	0.0100	ND	0.00500				
Toluene		0.595	0.0100	0.190	0.0100	1.05	0.0100	ND	0.00500				
Ethylbenzene		0.226	0.0100	0.114	0.0100	0.357	0.0100	ND	0.00500				
m,p-Xylenes		0.346	0.0200	0.180	0.0200	0.643	0.0200	ND	0.0100				
o-Xylene		0.159	0.0100	0.0903	0.0100	0.312	0.0100	ND	0.00500				
TCLP Mercury by SW 7470A SUB: TX104704215	*Extracted:*	Nov-14-16 09:30		Nov-14-16 09:30		Nov-14-16 09:30		Nov-14-16 09:30					
	Analyzed:	Nov-14-16 16:02		Nov-14-16 16:03		Nov-14-16 16:05		Nov-14-16 16:06					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL				
Mercury		ND	0.000200	ND	0.000200	ND	0.000200	ND	0.000200				
TCLP Metals by SW846 6010B SUB: TX104704215	*Extracted:*	Nov-14-16 09:30		Nov-14-16 09:30		Nov-14-16 09:30		Nov-14-16 09:30					
	Analyzed:	Nov-14-16 21:29		Nov-14-16 21:32		Nov-14-16 21:35		Nov-14-16 21:38					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL				
Arsenic		0.0925	0.0500	0.0899	0.0500	0.0531	0.0500	ND	0.0500				
Barium		0.881	0.0500	1.11	0.0500	1.91	0.0500	1.09	0.0500				
Cadmium		ND	0.0250	ND	0.0250	ND	0.0250	ND	0.0250				
Chromium		ND	0.0500	ND	0.0500	ND	0.0500	ND	0.0500				
Lead		ND	0.0500	ND	0.0500	ND	0.0500	ND	0.0500				
Selenium		ND	0.100	ND	0.100	ND	0.100	ND	0.100				
Silver		ND	0.100	ND	0.100	ND	0.100	ND	0.100				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 539987

Energy Transfer- Midland, Midland, TX

Project Name: MF-16

Project Id:
Contact: Johnnie Bradford
Project Location: Eunice NM

Date Received in Lab: Tue Nov-08-16 02:55 pm
Report Date: 15-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	539987-001		539987-002		539987-003		539987-004					
	Field Id:	WstPile		FntWal		BtmHol		NsidWal					
	Depth:			10 ft		10 ft		8 ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Nov-08-16 07:40		Nov-08-16 07:34		Nov-08-16 07:37		Nov-08-16 07:49					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-09-16 11:00		Nov-09-16 11:00		Nov-09-16 11:00		Nov-09-16 11:00					
	Analyzed:	Nov-09-16 14:52		Nov-09-16 15:41		Nov-09-16 15:48		Nov-09-16 15:55					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		18.1	5.00	7.38	5.00	8.48	5.00	7.87	5.00				
TPH by SW 8015B	***Extracted:***	Nov-08-16 17:00		Nov-08-16 17:00		Nov-08-16 17:00		Nov-08-16 17:00					
	Analyzed:	Nov-09-16 01:20		Nov-09-16 08:14		Nov-09-16 02:09		Nov-09-16 02:33					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
C6-C10 Gasoline Range Hydrocarbons		5720	150	1900	75.0	7960	150	15.3	15.0				
C10-C28 Diesel Range Hydrocarbons		12300	150	5970	75.0	14200	150	60.3	15.0				
Total TPH		18200	150	7970	75.0	22400	150	75.6	15.0				

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: MF-16

Work Orders : 539987,

Project ID:

Lab Batch #: 3003551 **Sample:** 539987-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/09/16 01:20

TPH by SW 8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.8	119	70-135	
o-Terphenyl	55.0	49.9	110	70-135	

Lab Batch #: 3003551 **Sample:** 539987-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/09/16 02:09

TPH by SW 8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.8	99.9	90	70-135	
o-Terphenyl	51.8	50.0	104	70-135	

Lab Batch #: 3003551 **Sample:** 539987-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/09/16 02:33

TPH by SW 8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	99.7	120	70-135	
o-Terphenyl	58.3	49.9	117	70-135	

Lab Batch #: 3003551 **Sample:** 539987-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/09/16 08:14

TPH by SW 8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	57.2	50.0	114	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: MF-16

Work Orders : 539987,

Project ID:

Lab Batch #: 3003724 **Sample:** 539987-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/L **Date Analyzed:** 11/11/16 15:42

TCLP BTEX by SW 8260B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0503	0.0500	101	75-131	
1,2-Dichloroethane-D4	0.0471	0.0500	94	63-144	
Toluene-D8	0.0476	0.0500	95	80-117	

Lab Batch #: 3003724 **Sample:** 539987-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/L **Date Analyzed:** 11/11/16 16:01

TCLP BTEX by SW 8260B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0495	0.0500	99	75-131	
1,2-Dichloroethane-D4	0.0465	0.0500	93	63-144	
Toluene-D8	0.0472	0.0500	94	80-117	

Lab Batch #: 3003724 **Sample:** 539987-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/L **Date Analyzed:** 11/11/16 16:39

TCLP BTEX by SW 8260B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0519	0.0500	104	75-131	
1,2-Dichloroethane-D4	0.0481	0.0500	96	63-144	
Toluene-D8	0.0472	0.0500	94	80-117	

Lab Batch #: 3003724 **Sample:** 539987-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/L **Date Analyzed:** 11/11/16 17:27

TCLP BTEX by SW 8260B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0510	0.0500	102	75-131	
1,2-Dichloroethane-D4	0.0484	0.0500	97	63-144	
Toluene-D8	0.0458	0.0500	92	80-117	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: MF-16

Work Orders : 539987,

Project ID:

Lab Batch #: 3003551 **Sample:** 715881-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/08/16 20:52

TPH by SW 8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	64.4	50.0	129	70-135	

Lab Batch #: 3003724 **Sample:** 716005-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/11/16 12:26

TCLP BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0517	0.0500	103	75-131	
1,2-Dichloroethane-D4	0.0478	0.0500	96	63-144	
Toluene-D8	0.0452	0.0500	90	80-117	

Lab Batch #: 3003551 **Sample:** 715881-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/08/16 21:16

TPH by SW 8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	64.0	50.0	128	70-135	

Lab Batch #: 3003724 **Sample:** 716005-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/11/16 09:50

TCLP BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0510	0.0500	102	75-131	
1,2-Dichloroethane-D4	0.0538	0.0500	108	63-144	
Toluene-D8	0.0487	0.0500	97	80-117	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: MF-16

Work Orders : 539987,

Project ID:

Lab Batch #: 3003551 **Sample:** 715881-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/08/16 21:40

TPH by SW 8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	64.8	50.0	130	70-135	

Lab Batch #: 3003724 **Sample:** 716005-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/11/16 10:17

TCLP BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0491	0.0500	98	75-131	
1,2-Dichloroethane-D4	0.0461	0.0500	92	63-144	
Toluene-D8	0.0487	0.0500	97	80-117	

Lab Batch #: 3003551 **Sample:** 539784-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/08/16 22:53

TPH by SW 8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.9	128	70-135	
o-Terphenyl	60.8	50.0	122	70-135	

Lab Batch #: 3003724 **Sample:** 539915-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/L **Date Analyzed:** 11/11/16 14:04

TCLP BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0510	0.0500	102	75-131	
1,2-Dichloroethane-D4	0.0563	0.0500	113	63-144	
Toluene-D8	0.0484	0.0500	97	80-117	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: MF-16

Work Orders : 539987,

Project ID:

Lab Batch #: 3003551 **Sample:** 539784-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/08/16 23:17

TPH by SW 8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.9	129	70-135	
o-Terphenyl	60.6	50.0	121	70-135	

Lab Batch #: 3003724 **Sample:** 539915-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/L **Date Analyzed:** 11/11/16 14:25

TCLP BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0501	0.0500	100	75-131	
1,2-Dichloroethane-D4	0.0492	0.0500	98	63-144	
Toluene-D8	0.0490	0.0500	98	80-117	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: MF-16

Work Order #: 539987 **Project ID:**

Analyst: MNR **Date Prepared:** 11/09/2016 **Date Analyzed:** 11/09/2016

Lab Batch ID: 3003608 **Sample:** 715909-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	242	97	250	242	97	0	90-110	20	

Analyst: JTR **Date Prepared:** 11/11/2016 **Date Analyzed:** 11/11/2016

Lab Batch ID: 3003724 **Sample:** 716005-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TCLP BTEX by SW 8260B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00500	0.500	0.469	94	0.500	0.453	91	3	66-142	20	
Toluene	<0.00500	0.500	0.466	93	0.500	0.444	89	5	59-139	20	
Ethylbenzene	<0.00500	0.500	0.466	93	0.500	0.459	92	2	75-125	20	
m,p-Xylenes	<0.0100	1.00	0.910	91	1.00	0.883	88	3	75-125	20	
o-Xylene	<0.00500	0.500	0.457	91	0.500	0.462	92	1	75-125	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: MF-16

Work Order #: 539987 **Project ID:**

Analyst: DEP **Date Prepared:** 11/14/2016 **Date Analyzed:** 11/14/2016

Lab Batch ID: 3003836 **Sample:** 716061-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TCLP Mercury by SW 7470A Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Mercury	<0.000200	0.00200	0.00196	98	0.00200	0.00200	100	2	80-120	20	

Analyst: DEP **Date Prepared:** 11/14/2016 **Date Analyzed:** 11/14/2016

Lab Batch ID: 3003887 **Sample:** 716077-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TCLP Metals by SW846 6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Arsenic	<0.0100	1.00	1.00	100	1.00	1.02	102	2	80-120	20	
Barium	<0.0100	1.00	1.00	100	1.00	1.01	101	1	80-120	20	
Cadmium	<0.00500	1.00	0.985	99	1.00	0.984	98	0	80-120	20	
Chromium	<0.0100	1.00	0.966	97	1.00	0.968	97	0	80-120	20	
Lead	<0.0100	1.00	1.02	102	1.00	1.02	102	0	80-120	20	
Selenium	<0.0200	1.00	0.984	98	1.00	0.995	100	1	80-120	20	
Silver	<0.0200	0.500	0.503	101	0.500	0.499	100	1	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: MF-16

Work Order #: 539987 **Project ID:**

Analyst: ARM **Date Prepared:** 11/08/2016 **Date Analyzed:** 11/08/2016

Lab Batch ID: 3003551 **Sample:** 715881-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	1000	100	1000	1010	101	1	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1090	109	1000	1090	109	0	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: MF-16

Work Order # : 539987 **Project ID:**

Lab Batch ID: 3003608 **QC- Sample ID:** 539986-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/09/2016 **Date Prepared:** 11/09/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	308	250	548	96	250	559	100	2	90-110	20	

Lab Batch ID: 3003608 **QC- Sample ID:** 540004-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/09/2016 **Date Prepared:** 11/09/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1870	1250	3080	97	1250	3050	94	1	90-110	20	

Lab Batch ID: 3003724 **QC- Sample ID:** 539915-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/11/2016 **Date Prepared:** 11/11/2016 **Analyst:** JTR

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TCLP BTEX by SW 8260B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00500	0.500	0.469	94	0.500	0.456	91	3	66-142	20	
Toluene	<0.00500	0.500	0.463	93	0.500	0.454	91	2	59-139	20	
Ethylbenzene	<0.00500	0.500	0.459	92	0.500	0.456	91	1	75-125	20	
m,p-Xylenes	<0.0100	1.00	0.890	89	1.00	0.884	88	1	75-125	20	
o-Xylene	<0.00500	0.500	0.454	91	0.500	0.443	89	2	75-125	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: MF-16

Work Order # : 539987 **Project ID:**

Lab Batch ID: 3003836 **QC- Sample ID:** 539905-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/14/2016 **Date Prepared:** 11/14/2016 **Analyst:** DEP

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TCLP Mercury by SW 7470A Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Mercury	<0.000200	0.00200	0.00215	108	0.00200	0.00212	106	1	75-125	20	

Lab Batch ID: 3003836 **QC- Sample ID:** 540191-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/14/2016 **Date Prepared:** 11/14/2016 **Analyst:** DEP

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TCLP Mercury by SW 7470A Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Mercury	<0.000200	0.00200	0.00213	107	0.00200	0.00212	106	0	75-125	20	

Lab Batch ID: 3003887 **QC- Sample ID:** 540125-001 S **Batch #:** 1 **Matrix:** Solid

Date Analyzed: 11/14/2016 **Date Prepared:** 11/14/2016 **Analyst:** DEP

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TCLP Metals by SW846 6010B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Arsenic	<0.0500	5.00	5.15	103	5.00	5.09	102	1	80-120	20	
Barium	3.10	5.00	8.07	99	5.00	8.11	100	0	80-120	20	
Cadmium	<0.0250	5.00	4.97	99	5.00	5.00	100	1	80-120	20	
Chromium	<0.0500	5.00	4.75	95	5.00	4.77	95	0	80-120	20	
Lead	<0.0500	5.00	5.03	101	5.00	5.06	101	1	80-120	20	
Selenium	<0.100	5.00	5.14	103	5.00	5.16	103	0	80-120	20	
Silver	<0.100	2.50	2.54	102	2.50	2.55	102	0	80-120	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: MF-16

Work Order # : 539987 **Project ID:**

Lab Batch ID: 3003551 **QC- Sample ID:** 539784-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/08/2016 **Date Prepared:** 11/08/2016 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	914	91	999	937	94	2	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	999	983	98	999	1010	101	3	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200)

Dallas Texas (214-902-0300)

San Antonio, Texas (210-509-3334)

Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenco.com

CHAIN OF CUSTODY

Page 1 Of 1

Xenco Quote #

Xenco Job # 539987

Client / Reporting Information

Company Name / Branch: Energy Transfer Company Field Services

Company Address: 600 N. Marienfeld, Midland, Texas 79701

Email: johnnie.bradford@energytransfer.com

Phone No: (432) 450-5542

Project Contact: Johnnie Bradford

Samplers's Name - Johnnie Bradford

Project Information

Project Name/Number: MF-16

Project Location: Eunice NM

Invoice To: Same as above

PO Number: None

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Sample Depth	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TCLP BETX	TCLP RCRA 8 Metals	TPH	Chlorides	Field Comments
1	WstPile	0	11/8/2016	7:40	S	1									X	X	X	X	
2	FntWal	10	11/8/2016	7:34	S	1									X	X	X	X	
3	BtmHol	10	11/8/2016	7:37	S	1									X	X	X	X	
4	NSidWal	8	11/8/2016	7:49	S	1									X	X	X	X	
5																			
6																			
7																			
8																			
9																			
10																			

Turnaround Time (Business days)

- [ ] Same Day TAT
- [x] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [x] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Relinquished by	Date Time	Received By	Relinquished By	Date Time	Received By
Relinquished by Sampler: 1 Johnnie Bradford	11/8/2016 1455	1 [signature]	2	11-8-16 14:55	2
Relinquished by: 3		Received By: 3	Relinquished By: 4		Received By: 4
Relinquished by: 5		Received By: 5	Custody Seal #	Preserved where applicable	On Ice [X]

Temp: IR ID:R-8 4.8°C
CF:+ 0.1
Corrected Temp: 4.9°C

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: Energy Transfer- Midland

Date/ Time Received: 11/08/2016 02:55:00 PM

Work Order #: 539987

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	4.9	
#2 *Shipping container in good condition?	N/A	
#3 *Samples received on ice?	Yes	
#4 *Custody Seal present on shipping container/ cooler?	N/A	
#5 *Custody Seals intact on shipping container/ cooler?	N/A	
#6 Custody Seals intact on sample bottles?	N/A	
#7 *Custody Seals Signed and dated?	N/A	
#8 *Chain of Custody present?	Yes	
#9 Sample instructions complete on Chain of Custody?	Yes	
#10 Any missing/extra samples?	No	
#11 Chain of Custody signed when relinquished/ received?	Yes	
#12 Chain of Custody agrees with sample label(s)?	Yes	
#13 Container label(s) legible and intact?	Yes	
#14 Sample matrix/ properties agree with Chain of Custody?	Yes	
#15 Samples in proper container/ bottle?	Yes	
#16 Samples properly preserved?	Yes	
#17 Sample container(s) intact?	Yes	
#18 Sufficient sample amount for indicated test(s)?	Yes	
#19 All samples received within hold time?	Yes	
#20 Subcontract of sample(s)?	Yes	Houston
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A	
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A	
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Kramer
Jessica Kramer
Date: 11/08/2016

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks
Date: 11/09/2016

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

July 14, 2017

Bernie Bockish
GHD
6121 Indian School Road, NE #200
Albuquerque, NM 87110
TEL: (505) 884-0672
FAX

RE: MF 16 OrderNo.: 1707310

Dear Bernie Bockish:

Hall Environmental Analysis Laboratory received 5 sample(s) on 7/7/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Client Sample ID: 11135250-05-070617-MGTP-1-
Project: MF 16
Collection Date: 7/6/2017 10:50:00 AM
Lab ID: 1707310-001 **Matrix:**
Received Date: 7/7/2017 10:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/12/2017 1:00:35 PM	32747
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/12/2017 1:00:35 PM	32747
Surr: DNOP	93.8	70-130		%Rec	1	7/12/2017 1:00:35 PM	32747
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/12/2017 1:56:49 PM	32740
Surr: BFB	92.3	54-150		%Rec	1	7/12/2017 1:56:49 PM	32740
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.025		mg/Kg	1	7/12/2017 5:54:58 PM	32740
Toluene	ND	0.049		mg/Kg	1	7/12/2017 5:54:58 PM	32740
Ethylbenzene	ND	0.049		mg/Kg	1	7/12/2017 5:54:58 PM	32740
Xylenes, Total	ND	0.098		mg/Kg	1	7/12/2017 5:54:58 PM	32740
Surr: 1,2-Dichloroethane-d4	109	70-130		%Rec	1	7/12/2017 5:54:58 PM	32740
Surr: 4-Bromofluorobenzene	87.5	70-130		%Rec	1	7/12/2017 5:54:58 PM	32740
Surr: Dibromofluoromethane	107	70-130		%Rec	1	7/12/2017 5:54:58 PM	32740
Surr: Toluene-d8	98.8	70-130		%Rec	1	7/12/2017 5:54:58 PM	32740

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Client Sample ID: 11135250-05-070617-MGTP-5-
Project: MF 16
Collection Date: 7/6/2017 11:15:00 AM
Lab ID: 1707310-002 **Matrix:**
Received Date: 7/7/2017 10:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/12/2017 2:07:13 PM	32747
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/12/2017 2:07:13 PM	32747
Surr: DNOP	92.4	70-130		%Rec	1	7/12/2017 2:07:13 PM	32747
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/12/2017 2:21:03 PM	32740
Surr: BFB	96.7	54-150		%Rec	1	7/12/2017 2:21:03 PM	32740
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	7/12/2017 7:22:02 PM	32740
Toluene	ND	0.049		mg/Kg	1	7/12/2017 7:22:02 PM	32740
Ethylbenzene	ND	0.049		mg/Kg	1	7/12/2017 7:22:02 PM	32740
Xylenes, Total	ND	0.098		mg/Kg	1	7/12/2017 7:22:02 PM	32740
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	7/12/2017 7:22:02 PM	32740
Surr: 4-Bromofluorobenzene	89.9	70-130		%Rec	1	7/12/2017 7:22:02 PM	32740
Surr: Dibromofluoromethane	108	70-130		%Rec	1	7/12/2017 7:22:02 PM	32740
Surr: Toluene-d8	98.1	70-130		%Rec	1	7/12/2017 7:22:02 PM	32740

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Client Sample ID: 11135250-05-070617-MGTP-2-
Project: MF 16
Collection Date: 7/6/2017 11:30:00 AM
Lab ID: 1707310-003 **Matrix:**
Received Date: 7/7/2017 10:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	7/12/2017 2:29:30 PM	32747
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/12/2017 2:29:30 PM	32747
Surr: DNOP	92.1	70-130		%Rec	1	7/12/2017 2:29:30 PM	32747
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/12/2017 3:33:58 PM	32740
Surr: BFB	102	54-150		%Rec	1	7/12/2017 3:33:58 PM	32740
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.025		mg/Kg	1	7/12/2017 7:51:00 PM	32740
Toluene	ND	0.049		mg/Kg	1	7/12/2017 7:51:00 PM	32740
Ethylbenzene	ND	0.049		mg/Kg	1	7/12/2017 7:51:00 PM	32740
Xylenes, Total	ND	0.099		mg/Kg	1	7/12/2017 7:51:00 PM	32740
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	7/12/2017 7:51:00 PM	32740
Surr: 4-Bromofluorobenzene	91.1	70-130		%Rec	1	7/12/2017 7:51:00 PM	32740
Surr: Dibromofluoromethane	104	70-130		%Rec	1	7/12/2017 7:51:00 PM	32740
Surr: Toluene-d8	99.5	70-130		%Rec	1	7/12/2017 7:51:00 PM	32740

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Client Sample ID: 11135250-05-070617-MGTP-3-
Project: MF 16
Collection Date: 7/6/2017 11:45:00 AM
Lab ID: 1707310-004 **Matrix:**
Received Date: 7/7/2017 10:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	7/12/2017 2:51:56 PM	32747
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/12/2017 2:51:56 PM	32747
Surr: DNOP	80.3	70-130		%Rec	1	7/12/2017 2:51:56 PM	32747
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/12/2017 3:58:16 PM	32740
Surr: BFB	97.7	54-150		%Rec	1	7/12/2017 3:58:16 PM	32740
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.025		mg/Kg	1	7/12/2017 8:19:50 PM	32740
Toluene	ND	0.049		mg/Kg	1	7/12/2017 8:19:50 PM	32740
Ethylbenzene	ND	0.049		mg/Kg	1	7/12/2017 8:19:50 PM	32740
Xylenes, Total	ND	0.099		mg/Kg	1	7/12/2017 8:19:50 PM	32740
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	7/12/2017 8:19:50 PM	32740
Surr: 4-Bromofluorobenzene	93.1	70-130		%Rec	1	7/12/2017 8:19:50 PM	32740
Surr: Dibromofluoromethane	103	70-130		%Rec	1	7/12/2017 8:19:50 PM	32740
Surr: Toluene-d8	105	70-130		%Rec	1	7/12/2017 8:19:50 PM	32740

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Client Sample ID: 11135250-05-070617-MGTP-4-
Project: MF 16
Collection Date: 7/6/2017 12:00:00 PM
Lab ID: 1707310-005 **Matrix:**
Received Date: 7/7/2017 10:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	7/12/2017 3:14:14 PM	32747
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/12/2017 3:14:14 PM	32747
Surr: DNOP	91.1	70-130		%Rec	1	7/12/2017 3:14:14 PM	32747
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/12/2017 4:22:33 PM	32740
Surr: BFB	102	54-150		%Rec	1	7/12/2017 4:22:33 PM	32740
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	7/12/2017 8:48:37 PM	32740
Toluene	ND	0.049		mg/Kg	1	7/12/2017 8:48:37 PM	32740
Ethylbenzene	ND	0.049		mg/Kg	1	7/12/2017 8:48:37 PM	32740
Xylenes, Total	ND	0.097		mg/Kg	1	7/12/2017 8:48:37 PM	32740
Surr: 1,2-Dichloroethane-d4	109	70-130		%Rec	1	7/12/2017 8:48:37 PM	32740
Surr: 4-Bromofluorobenzene	90.1	70-130		%Rec	1	7/12/2017 8:48:37 PM	32740
Surr: Dibromofluoromethane	109	70-130		%Rec	1	7/12/2017 8:48:37 PM	32740
Surr: Toluene-d8	102	70-130		%Rec	1	7/12/2017 8:48:37 PM	32740

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1707310**

14-Jul-17

Client: GHD

Project: MF 16

Sample ID **LCS-32747**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **32747**	RunNo: **44147**
Prep Date: **7/11/2017**	Analysis Date: **7/12/2017**	SeqNo: **1393409** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.5	73.2	114			
Surr: DNOP	4.6		5.000		93.0	70	130			

Sample ID **MB-32747**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **32747**	RunNo: **44147**
Prep Date: **7/11/2017**	Analysis Date: **7/12/2017**	SeqNo: **1393410** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		95.4	70	130			

Sample ID **1707310-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **11135250-05-070617**	Batch ID: **32747**	RunNo: **44147**
Prep Date: **7/11/2017**	Analysis Date: **7/12/2017**	SeqNo: **1394365** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.40	0	91.6	55.8	122			
Surr: DNOP	4.4		5.040		87.6	70	130			

Sample ID **1707310-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **11135250-05-070617**	Batch ID: **32747**	RunNo: **44147**
Prep Date: **7/11/2017**	Analysis Date: **7/12/2017**	SeqNo: **1394366** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.45	0	96.8	55.8	122	5.67	20	
Surr: DNOP	4.6		5.045		91.9	70	130	0	0	

Sample ID **MB-32779**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **32779**	RunNo: **44187**
Prep Date: **7/13/2017**	Analysis Date: **7/13/2017**	SeqNo: **1394824** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	12		10.00		117	70	130			

Sample ID **LCS-32779**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **32779**	RunNo: **44187**
Prep Date: **7/13/2017**	Analysis Date: **7/13/2017**	SeqNo: **1394828** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1707310**

14-Jul-17

Client: GHD

Project: MF 16

Sample ID	**LCS-32779**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**32779**		RunNo:	**44187**				
Prep Date:	**7/13/2017**	Analysis Date:	**7/13/2017**		SeqNo:	**1394828**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.7		5.000		114	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1707310**

14-Jul-17

Client: GHD

Project: MF 16

Sample ID **MB-32740**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **32740**	RunNo: **44163**
Prep Date: **7/11/2017**	Analysis Date: **7/12/2017**	SeqNo: **1394414** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	970		1000		96.9	54	150			

Sample ID **LCS-32740**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **32740**	RunNo: **44163**
Prep Date: **7/11/2017**	Analysis Date: **7/12/2017**	SeqNo: **1394415** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	76.4	125			
Surr: BFB	1100		1000		109	54	150			

Sample ID **1707310-002AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **11135250-05-070617**	Batch ID: **32740**	RunNo: **44163**
Prep Date: **7/11/2017**	Analysis Date: **7/12/2017**	SeqNo: **1394421** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	4.8	23.95	0	122	77.8	128			
Surr: BFB	1000		957.9		109	54	150			

Sample ID **1707310-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **11135250-05-070617**	Batch ID: **32740**	RunNo: **44163**
Prep Date: **7/11/2017**	Analysis Date: **7/12/2017**	SeqNo: **1394422** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	4.9	24.34	0	123	77.8	128	2.72	20	
Surr: BFB	1100		973.7		114	54	150	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1707310**

14-Jul-17

Client: GHD

Project: MF 16

Sample ID **mb-32740**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **32740**	RunNo: **44176**
Prep Date: **7/11/2017**	Analysis Date: **7/12/2017**	SeqNo: **1394707** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		108	70	130			
Surr: 4-Bromofluorobenzene	0.44		0.5000		87.9	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.50		0.5000		100	70	130			

Sample ID **lcs-32740**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSS**	Batch ID: **32740**	RunNo: **44176**
Prep Date: **7/11/2017**	Analysis Date: **7/12/2017**	SeqNo: **1394708** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	108	70	130			
Toluene	0.91	0.050	1.000	0	91.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.57		0.5000		115	70	130			
Surr: 4-Bromofluorobenzene	0.44		0.5000		87.4	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		107	70	130			
Surr: Toluene-d8	0.51		0.5000		101	70	130			

Sample ID **1707310-001ams**	SampType: **MS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **11135250-05-070617**	Batch ID: **32740**	RunNo: **44176**
Prep Date: **7/11/2017**	Analysis Date: **7/12/2017**	SeqNo: **1394710** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.024	0.9569	0	112	61.9	146			
Toluene	0.96	0.048	0.9569	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	0.48		0.4785		101	70	130			
Surr: 4-Bromofluorobenzene	0.43		0.4785		90.0	70	130			
Surr: Dibromofluoromethane	0.47		0.4785		98.7	70	130			
Surr: Toluene-d8	0.49		0.4785		103	70	130			

Sample ID **1707310-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **11135250-05-070617**	Batch ID: **32740**	RunNo: **44176**
Prep Date: **7/11/2017**	Analysis Date: **7/12/2017**	SeqNo: **1394711** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	0.9814	0	112	61.9	146	2.21	20	
Toluene	0.93	0.049	0.9814	0	94.9	70	130	3.18	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1707310**

14-Jul-17

Client: GHD

Project: MF 16

Sample ID **1707310-001amsd** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles Short List**

Client ID: **11135250-05-070617** Batch ID: **32740** RunNo: **44176**

Prep Date: **7/11/2017** Analysis Date: **7/12/2017** SeqNo: **1394711** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.52		0.4907		106	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.44		0.4907		90.4	70	130	0	0	
Surr: Dibromofluoromethane	0.51		0.4907		105	70	130	0	0	
Surr: Toluene-d8	0.49		0.4907		100	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: GHD | Work Order Number: 1707310 | RcptNo: 1

Received By: **Erin Melendrez** **7/7/2017 10:25:00 AM**
Completed By: **Ashley Gallegos** **7/7/2017 3:55:26 PM**
Reviewed By: 7/10/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: ____ (<2 or >12 unless noted)
Adjusted? ____
Checked by: ____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date ____
By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: ____
Client Instructions: ____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.0	Good	Yes			

Chain-of-Custody Record

Client: GHD Services, Inc

Mailing Address: 6121 Indian School Rd Ste 200 NE Albuquerque, NM 87110

Phone #: 505 884 0762

email or Fax#: Bernard.Backisch@ghd.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☐ Rush

Project Name: ~~MG16~~, MF16

Project #:

Project Manager: Bernard Backisch

Sampler: Michael Gant 832-374-4905

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.1 -0.1(cf) =5.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1107310	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride (300.0)	BTEX (8260)	Air Bubbles (Y or N)
~~7/5~~																				
7/5	1030	S	S-1135250-04-070517-MG-TP-2-4	4oz Soil Jar	ICE				X									X	X	
7/5	1100	S	S-1135250-04-070517-MG-TP-1-16			AMO 07/07/17			X									X	X	
7/5	1140	S	S-1135250-04-070517-MG-TP-4-16						X									X	X	
7/5	1220	S	S-1135250-04-070517-MG-TP-5-16			on Separate			X									X	X	
~~7/5~~	~~1240~~	S	S-1135250-04-070517-MG-TP-3-16			report see email			X									X	X	
7/6	1050	S	S-1135250-05-070617-MG-TP-1-6'			-001			X										X	
7/6	1115	S	S-1135250-05-070617-MG-TP-5-16'			-002			X										X	
7/6	1130	S	S-1135250-05-070617-MG-TP-2-16'			-003			X										X	
7/6	1145	S	S-1135250-05-070617-MG-TP-3-16'			-004			X										X	
7/6	1200	S	SH1135250-05-070617-MG-TP-4-16'			-005			X										X	
			4 Site 07/10/17 per Michael Grant																	

Date:	Time:	Relinquished by:	Received by:	Date	Time	Remarks:
7/6/17	1415			7/6/17	1915	
7/6/17	1900			7/7/17	1025	

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Andy Freeman

From: Brandon, Alan K. <Alan.Brandon@ghd.com>
Sent: Friday, July 07, 2017 11:34 AM
To: Andy Freeman
Subject: Trunk-MC and MF-16 COC
Attachments: Trunk MC and MF-16 COC.pdf

Andy,

These samples should be arriving today or already have. Can you please split the reporting between the 2 sites as noted on the attached?

Thanks

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 18, 2017

Bernie Bockisch
GHD
6121 Indian School Road, NE #200
Albuquerque, NM 87110
TEL: (505) 884-0672
FAX

RE: MF 16 OrderNo.: 1709690

Dear Bernie Bockisch:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/12/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: MF 16

Lab Order: 1709690

Lab ID: 1709690-001 **Collection Date:** 9/6/2017 10:20:00 AM
Client Sample ID: S-11135250-05-090617-MG-TP-6-14' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	9/15/2017 5:39:24 PM	33876
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	32	9.3		mg/Kg	1	9/15/2017 4:25:14 PM	33875
Motor Oil Range Organics (MRO)	49	47		mg/Kg	1	9/15/2017 4:25:14 PM	33875
Surr: DNOP	85.2	70-130		%Rec	1	9/15/2017 4:25:14 PM	33875
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/15/2017 9:49:51 PM	33871
Surr: BFB	106	54-150		%Rec	1	9/15/2017 9:49:51 PM	33871
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	9/15/2017 9:49:51 PM	33871
Toluene	ND	0.049		mg/Kg	1	9/15/2017 9:49:51 PM	33871
Ethylbenzene	ND	0.049		mg/Kg	1	9/15/2017 9:49:51 PM	33871
Xylenes, Total	ND	0.098		mg/Kg	1	9/15/2017 9:49:51 PM	33871
Surr: 4-Bromofluorobenzene	116	66.6-132		%Rec	1	9/15/2017 9:49:51 PM	33871

Lab ID: 1709690-002 **Collection Date:** 9/6/2017 10:30:00 AM
Client Sample ID: S-11135250-05-090617-MG-TP-7-14' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	9/15/2017 6:16:38 PM	33876
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	9/15/2017 4:53:25 PM	33875
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/15/2017 4:53:25 PM	33875
Surr: DNOP	86.3	70-130		%Rec	1	9/15/2017 4:53:25 PM	33875
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	9/15/2017 10:13:10 PM	33871
Surr: BFB	97.0	54-150		%Rec	1	9/15/2017 10:13:10 PM	33871
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	9/15/2017 10:13:10 PM	33871
Toluene	ND	0.050		mg/Kg	1	9/15/2017 10:13:10 PM	33871
Ethylbenzene	ND	0.050		mg/Kg	1	9/15/2017 10:13:10 PM	33871
Xylenes, Total	ND	0.10		mg/Kg	1	9/15/2017 10:13:10 PM	33871
Surr: 4-Bromofluorobenzene	106	66.6-132		%Rec	1	9/15/2017 10:13:10 PM	33871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: MF 16

Lab Order: 1709690

Lab ID: 1709690-003
Collection Date: 9/6/2017 11:05:00 AM
Client Sample ID: S-11135250-05-090617-MG-TP-8-6'
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	9/15/2017 6:29:03 PM	33876
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/15/2017 5:21:43 PM	33875
Motor Oil Range Organics (MRO)	ND	51		mg/Kg	1	9/15/2017 5:21:43 PM	33875
Surr: DNOP	75.5	70-130		%Rec	1	9/15/2017 5:21:43 PM	33875
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/15/2017 10:36:29 PM	33871
Surr: BFB	100	54-150		%Rec	1	9/15/2017 10:36:29 PM	33871
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	9/15/2017 10:36:29 PM	33871
Toluene	ND	0.047		mg/Kg	1	9/15/2017 10:36:29 PM	33871
Ethylbenzene	ND	0.047		mg/Kg	1	9/15/2017 10:36:29 PM	33871
Xylenes, Total	ND	0.095		mg/Kg	1	9/15/2017 10:36:29 PM	33871
Surr: 4-Bromofluorobenzene	110	66.6-132		%Rec	1	9/15/2017 10:36:29 PM	33871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1709690**

18-Sep-17

Client: GHD

Project: MF 16

Sample ID	**MB-33876**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**33876**	RunNo:	**45653**					
Prep Date:	**9/14/2017**	Analysis Date:	**9/15/2017**	SeqNo:	**1450182**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-33876**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**33876**	RunNo:	**45653**					
Prep Date:	**9/14/2017**	Analysis Date:	**9/15/2017**	SeqNo:	**1450183**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.6	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1709690**

18-Sep-17

Client: GHD

Project: MF 16

Sample ID	**LCS-33875**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**33875**		RunNo:	**45643**				
Prep Date:	**9/14/2017**	Analysis Date:	**9/15/2017**		SeqNo:	**1448863**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	101	73.2	114			
Surr: DNOP	4.7		5.000		94.6	70	130			

Sample ID	**MB-33875**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**33875**		RunNo:	**45643**				
Prep Date:	**9/14/2017**	Analysis Date:	**9/15/2017**		SeqNo:	**1448864**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.0		10.00		90.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1709690**

18-Sep-17

Client: GHD

Project: MF 16

Sample ID **MB-33871**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **33871**	RunNo: **45651**
Prep Date: **9/14/2017**	Analysis Date: **9/15/2017**	SeqNo: **1449668** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		105	54	150			

Sample ID **LCS-33871**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **33871**	RunNo: **45651**
Prep Date: **9/14/2017**	Analysis Date: **9/15/2017**	SeqNo: **1449669** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	114	76.4	125			
Surr: BFB	1100		1000		114	54	150			

Sample ID **1709690-002AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-11135250-05-0906**	Batch ID: **33871**	RunNo: **45651**
Prep Date: **9/14/2017**	Analysis Date: **9/15/2017**	SeqNo: **1449674** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	33	4.8	23.99	0	137	77.8	128			S
Surr: BFB	1100		959.7		118	54	150			

Sample ID **1709690-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-11135250-05-0906**	Batch ID: **33871**	RunNo: **45651**
Prep Date: **9/14/2017**	Analysis Date: **9/15/2017**	SeqNo: **1449675** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	32	4.6	22.96	0	138	77.8	128	3.83	20	S
Surr: BFB	1100		918.3		117	54	150	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1709690**

18-Sep-17

Client: GHD

Project: MF 16

Sample ID **MB-33871**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **33871**	RunNo: **45651**
Prep Date: **9/14/2017**	Analysis Date: **9/15/2017**	SeqNo: **1449704** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.2		1.000		117	66.6	132			

Sample ID **LCS-33871**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **33871**	RunNo: **45651**
Prep Date: **9/14/2017**	Analysis Date: **9/15/2017**	SeqNo: **1449705** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	114	80	120			
Toluene	1.1	0.050	1.000	0	111	80	120			
Ethylbenzene	1.1	0.050	1.000	0	114	80	120			
Xylenes, Total	3.5	0.10	3.000	0	116	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		118	66.6	132			

Sample ID **1709690-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-11135250-05-0906**	Batch ID: **33871**	RunNo: **45651**
Prep Date: **9/14/2017**	Analysis Date: **9/15/2017**	SeqNo: **1449711** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.023	0.9242	0	119	80.9	132			
Toluene	1.1	0.046	0.9242	0.01268	116	79.8	136			
Ethylbenzene	1.1	0.046	0.9242	0	121	79.4	140			
Xylenes, Total	3.4	0.092	2.773	0	124	78.5	142			
Surr: 4-Bromofluorobenzene	1.1		0.9242		115	66.6	132			

Sample ID **1709690-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-11135250-05-0906**	Batch ID: **33871**	RunNo: **45651**
Prep Date: **9/14/2017**	Analysis Date: **9/15/2017**	SeqNo: **1449712** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.023	0.9166	0	122	80.9	132	1.73	20	
Toluene	1.1	0.046	0.9166	0.01268	121	79.8	136	3.68	20	
Ethylbenzene	1.2	0.046	0.9166	0	127	79.4	140	3.60	20	
Xylenes, Total	3.5	0.092	2.750	0	128	78.5	142	2.28	20	
Surr: 4-Bromofluorobenzene	1.1		0.9166		124	66.6	132	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: GHD | Work Order Number: **1709690** | RcptNo: 1

Received By: **Erin Melendrez** **9/12/2017 10:15:00 AM**

Completed By: **Ashley Gallegos** **9/13/2017 1:54:49 PM**

Reviewed By: SRE 09/14/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.1	Good	Yes			

Chain-of-Custody Record

Client: GHD Services, Inc.

Mailing Address: 6121 Indian School Rd Ste 200 NE Albuquerque, NM 87110

Phone #: 505 884 0672

email or Fax#: Bernard.Bockisch@ghd.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☐ Rush _____

Project Name: MF-16

Project #: 1113525O

Project Manager: Bernard Bockisch

Sampler: Michael Gant

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1709690	BTEX + MTBE + TMBs (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride 300.0				Air Bubbles (Y or N)
9/6	1020	S	S-111525O-05-090617-MG-TP-6-14'	4oz Soil Jar	ICE	-001	X		X									X				
9/6	1030	S	S-111525O-05-090617-MG-TP-7-14'			-002	X		X									X				
9/6	1105	S	S-111525O-05-090617-MG-TP-8-6'			-003	X		X									X				

Remarks:

Date	Time	Relinquished by	Received by	Date	Time
9/6/17	0840	Michael Gant			
9/6/17	1900			9/7/17	1015

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Courier