NAB1809355913 2RP-4685

Mack Energy Corporation Closure North Pole Fed TB

03/20/2020

Form C-141 Page 6

State of New Mexico Oil Conservation Division

Closure Report Attachment Checklist: Each of the following items must be included in the closure report.

Incident ID	nAB1809855913
District RP	2RP-4685
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
X Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
□ Description of remediation activities
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete. Printed Name:Matt Buckles Title:Project Manager
Signature: $Mur(a)$ Date: $6-26-7$
Signature: Date: 6-26-/7 email: mattbuckles@mec.com Telephone: 575-748-1288
Signature:
email:mattbuckles@mec.com Telephone:575-748-1288
email:mattbuckles@mec.com Telephone:575-748-1288
email:mattbuckles@mec.com
email:mattbuckles@mec.com Telephone:575-748-1288 OCD Only Received by: Date: Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible
Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

NOTE: Closed with soil blending as remedial action on approval from OCD, for reference this technique is now no longer accepted for remediation.



CLOSURE

Property:

Mack Energy Corporation
North Pole Fed TB
Eddy County, New Mexico
Unit Letter "M", Section 15, Township 16 South, Range 28 East
Latitude 32.9163, Longitude -104.1712
API Number: 30-015-36079
2RP-4685

May 2019

Prepared for:

Mack Energy Corporation 11344 Lovington Highway Artesia, NM 88210 Attn: Mr. Matt Buckles

Prepared by:

Thomas Franklin Environmental Manager

Jack Zimmerman, PG, CPG Senior Geologist

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Groundwater Data

CLOSURE

Mack Energy Corporation
North Pole Fed TB
Eddy County, New Mexico
Unit Letter "M", Section 15, Township 16 South, Range 28 East
Latitude 32.9163, Longitude -104.1712
API Number: 30-015-36079
2RP-4685

May 2019

1.0 INTRODUCTION

1.1 Site Description & Background

American Safety Services Inc. (ASSI) has prepared this Closure Report for the Mack Energy Corporation (Mack) North Pole Fed TB (referred to hereinafter as the "Site" or "subject Site"). This Closure Report is based upon the response actions and interpretation of the data collected by ASSI.

The Site is located in Unit Letter "M", Section 15, Township 16 South, Range 28 East, Eddy County, New Mexico (GPS 32.9163, -104.1712). Figures 1, 2, and 3 (Appendix A) show the Site location.

Remedial actions were conducted in accordance with New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division (NMOCD) rules (NMAC 19.15.29 Release Notification) and per the Remediation Plan for this location (i.e., 2RP-4685) approved by NMOCD on October 15, 2018.

1.2 Project Objective

The objective of the Closure Report is to present documentation of the on-site activities that were performed within the scope of work agreed upon to remediate the Site.

1.3 Standard of Care

ASSI's services were performed in accordance with standards provided by a firm rendering the same or similar services in the area during the same time frame. ASSI makes no warranties, expressed or implied, as to the services performed hereunder. Additionally, ASSI does not warranty the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties). Services were performed in accordance with the scope of work agreed to with the client.

1.4 Reliance

This report has been prepared for the exclusive use of Mack, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of both Mack and ASSI. Any unauthorized distribution or reuse is at the sole risk of Mack. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal, the report, and ASSI's Agreement. The limitation of liability defined in the agreement is the aggregate limit of ASSI's liability to the client.

2.0 SITE RANKING & PROPOSED REMEDIAL ACTION GOALS

The Site is subject to regulatory oversight by the Bureau of Land Management (BLM). To address activities related to releases, the NMOCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the NMOCD rules, specifically NMAC 19.15.29.9 *Release Notification*. These documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

In accordance with the NMAC 19.15.29, ASSI utilized the general site characteristics to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the table below:

Rankin	Ranking Score		
	<50 feet	20	
Depth to Groundwater	50 to 99 feet	10	20
	>100 feet	0	
Wellhead Protection Area,	Yes	20	
<1,000 feet from a water source, or; <200 feet from private domestic water source.	No	0	0
Distance to Surface	<200 feet	20	
	200 to 1,000 feet	10	0
Water Body	>1,000 feet	0	
Total Rar	20		

Based on ASSI's evaluation of the scoring criteria, the Site would have a Total Ranking Score of 20. This ranking is based on the following:

- The depth to the initial groundwater-bearing zone is less than 50 feet at the Site.
- The impacted area is greater than 200 feet from a private domestic water source.
- Distance to the nearest surface water body is greater than 1,000 ft.

Based on a Total Ranking Score of 20, cleanup goals for soils remaining in place include: 10 milligrams per kilogram (mg/Kg) for Benzene, 50 mg/Kg for Total Benzene, Toluene, Ethylbenzene and Xylene (BTEX), 100 mg/Kg for Total Petroleum Hydrocarbons (TPH) and 600 mg/Kg for Chloride.

Figure 5 shows the location of the Site in Eddy Co, New Mexico and surrounding topography.

3.0 INITIAL RESPONSE & SAMPLING ACTIVITIES

3.1 Initial Response

On July 9, 2018, ASSI personnel performed a site inspection in response to a release of twenty-five (25) barrels (bbls) of oil (2RP-4685). The release was due to a gasket developing a leak on the top side of an 8' x 20' clean—out plate causing the release to occur directly to the ground. Ten (10) bbls of the fluid were recovered. The release impacted approximately twenty-three thousand (23,000) square feet of pasture area adjacent to the production pad.

3.2 Sampling Activities

Initial sampling activities were conducted on July 9^{th} by ASSI personnel, using a stainless-steel hand auger. Twenty (20) auger holes were installed at discrete locations collecting material at intervals ranging from surface (0-0.5') to a depth of two and one-half (2.5) foot below ground surface (bgs). Table 1 in Appendix B presents analytical results and Figure 3 in Appendix A shows auger hole locations. Soil material was field screened for Chloride utilizing Electro conductivity (σ) during sampling activities.

3.3 Soil Sampling Analytical Results

Twenty-six (26) soil samples were collected during initial sampling activities from sample locations Auger Hole-1 thru Auger Hole-20. On July 12th, collected samples were delivered by ASSI personnel to the laboratory for analysis. The samples were analyzed for BTEX, TPH, and Chloride (Table 1). Analytical results were compared to *Table I of NMAC 19.15.29.12* and were further evaluated to confirm the presence of elevated concentrations of TPH above NMOCD guidelines (i.e., clean-up goals). Although elevated concentrations of TPH exist at sample locations Auger Hole-1 and -2, vertical and horizontal delineation were both achieved during initial sampling efforts.

3.4 Excavation Activities

ASSI conducted excavation activities with proximity to sample locations Auger Hole-1 and -2 beginning October 18th and extending to October 31st. Excavation activities included the removal of impacted material by the use of mechanical means (i.e., backhoe and skid steer) and stockpiling the material onsite. The stockpiled excavated material was then blended and aeriated for future collection of confirmation samples.

3.5 Excavation Confirmation Sampling Activities

Horizontal delineation sampling of the open excavation was conducted on December 4th by ASSI. Samples were collected from their perspective cardinal directions (North, South, East and West) from the excavated sidewall and analyzed for TPH.

4.0 LABORATORY ANALYTICAL METHODS

The samples were analyzed for TPH utilizing EPA method SW-846 8015, BTEX using EPA method SW-846 8021B, and Chloride utilizing EPA method SW-846 300.1. Laboratory analysis results are provided in Appendix D.

Soil was collected, in laboratory prepared glassware, placed on ice, and packed in a cooler. The sample coolers and completed Chain-of-Custody (CoC) forms were relinquished to Xenco Laboratories in Midland, Texas. Sample analysis was completed on a normal turn-around time schedule.

Under Appendix A, Figure 3 indicates the approximate location of the auger holes previously installed in relation to pertinent land features and Figure 4 indicates general Site boundaries and anticipated excavation depth during the proposed removal action.

5.0 CLOSURE REQUEST

Based upon the data collected and the Site work completed by ASSI, the constituent of concern (COC) has been both vertically and horizontally delineated. Impacted material was removed from the excavated areas, temporarily stockpiled onsite, sufficiently blended, and subsequently sampled for TPH. Confirmation sampling verified a reduction in TPH concentrations in the previously excavated material (i.e., native soil). Consequently, the excavated soil was re-placed (i.e., backfilled) to its original location and the Site was returned to existing conditions.

Based on the success of the response actions which are affirmed by laboratory analytical results, no additional investigation and/or remediation appears necessary at this time. Copies of the Initial and Final C-141 are provided in Appendix E.

ASSI, on behalf of MACK, respectfully requests closure of the Site.



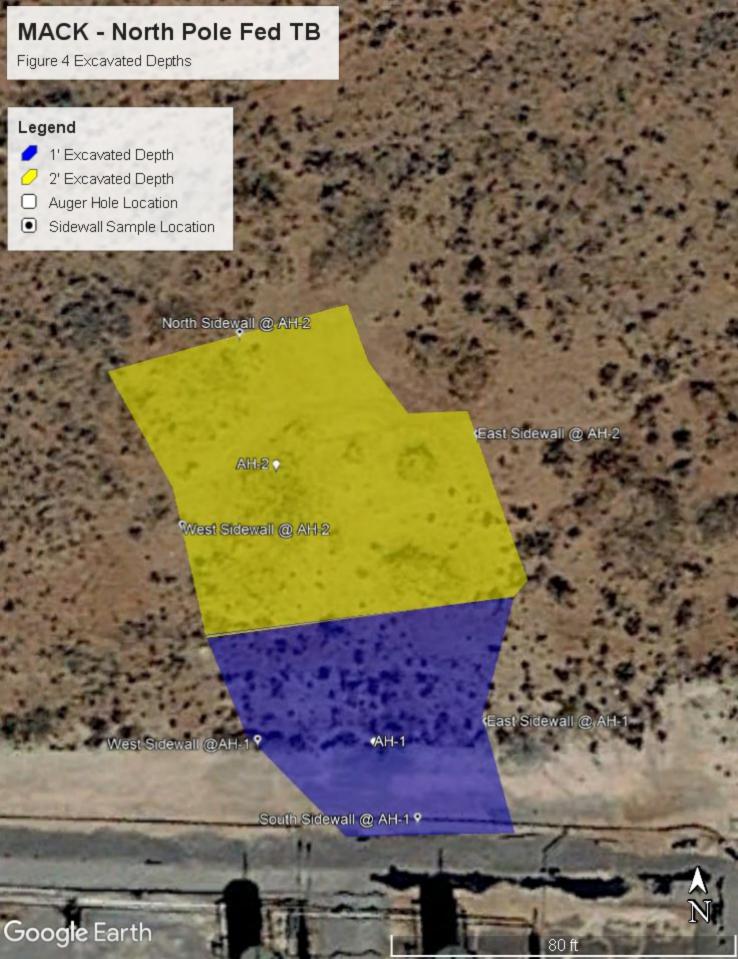
APPENDIX A

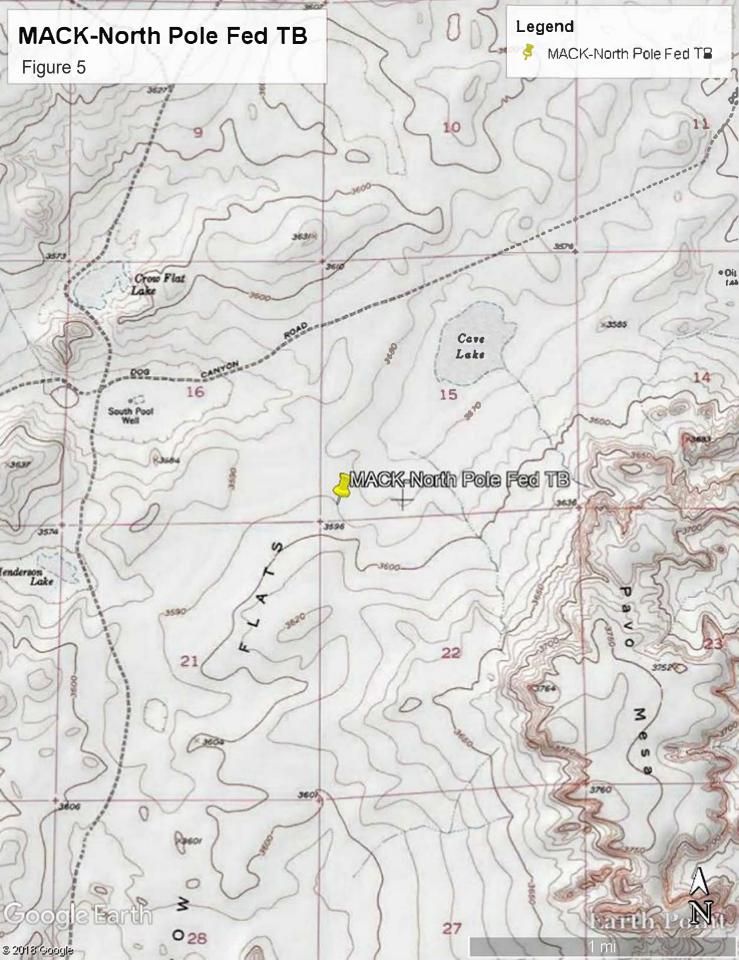
Figures













APPENDIX B

Table 1 & 2

TABLE 1

Summary of Delineation Sampling Analytical Results

Concentrations of Benzene, BTEX, TPH & Chloride in Soil

Mack Energy North Pole Fed TB Eddy County, New Mexico 2RP-4685

			8021B					8015M				300.1	
SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	SOIL STATUS	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYLBENZENE (mg/Kg)	XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	MRO (mg/Kg)	Total TPH (mg/Kg)	CHLORIDE (mg/Kg)
	NMAC 19.15.29)		10	NE	NE	NE	50	NE	NE	NE	100	600
				1	De	lination Sampling							
Auger Hole-1	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	352	81.9	434	295
Auger Hole-1	0.5'-1'	7/9/2018	In-Situ	-	-	-	-	-	ND	468	131	599	161
Auger Hole-1	1'-1.5'	7/9/2018	In-Situ		_	-	_	-	ND	63.7	ND	63.7	
Auger Hole-2	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	245	49.7	295	190
Auger Hole-2	0.5'-1'	7/9/2018	In-Situ	_	-	-	-	_	ND	207	47.3	254	
Auger Hole-2	1'-1.5'	7/9/2018	In-Situ	-	_	-	_	_	ND	135	ND 25	135	
Auger Hole-2 Auger Hole-2	1.5'-2' 2'-2.5'	7/9/2018 7/9/2018	In-Situ In-Situ	_	_	_	_	_	ND ND	158 38	35 ND	193 38	<u>-</u>
Auger Hole-3	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	56.8	ND	56.8	3.53
Auger Hole-4	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-5	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-6	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	39.9	ND	39.9	ND
Auger Hole-7	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-8	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-9	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-10	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-11	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-12	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-13	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	33.9	ND	33.9	ND
Auger Hole-14	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	32.2	ND	32.2	ND
Auger Hole-15	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-16	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	48.9	26.2	75.1	ND
Auger Hole-17	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	36.8
Auger Hole-18	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-19	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-20	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

mg/Kg - milligrams per Kilogram

Concentrations in **BOLD** exceed NMOCD guidelines

ND - not detected at the reporting limit

NE - not established

— = not determined

In-situ - sample collected in-place

Total TPH reported values are rounded-off to 3-significant figures using the LIMS Odd/Even Rounding Rule which is a laboratory accepted standard

TABLE 2

Summary of Delineation Sampling Analytical Results

Concentrations of TPH in Soil

Mack Energy North Pole Fed TB

Eddy County, New Mexico

	-4		

			KP-4005						
			SOIL STATUS	8015M					
SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE		GRO (mg/Kg)	DRO (mg/Kg)	MRO (mg/Kg)	Total TPH (mg/Kg)		
	NMAC 19.15.29	NE	NE	NE	100				
Confirmation Sampling									
South Sidewall @ Auger Hole-1	_	12/4/2018	In-Situ	ND	ND	ND	ND		
East Sidewall @ Auger Hole-1	_	12/4/2018	In-Situ	ND	ND	ND	ND		
West Sidewall @ Auger Hole-1	_	12/4/2018	In-Situ	ND	ND	ND	ND		
North Sidewall @ Auger Hole-2	_	12/4/2018	In-Situ	ND	ND	ND	ND		
East Sidewall @ Auger Hole-2	_	12/4/2018	In-Situ	ND	ND	ND	ND		
West Sidewall @ Auger Hole-2	_	12/4/2018	In-Situ	ND	ND	ND	ND		
Stockpile-1 @ Auger Hole-1	_	12/4/2018	Ex-Situ	ND	ND	ND	ND		
Stockpile-2 @ Auger Hole-1	_	12/4/2018	Ex-Situ	ND	ND	ND	ND		
Stockpile-3 @ Auger Hole-1	_	12/4/2018	Ex-Situ	ND	31	ND	31		
Stockpile-1 @ Auger Hole -2	_	12/4/2018	Ex-Situ	ND	ND	ND	ND		
Stockpile-2 @ Auger Hole-2	_	12/4/2018	Ex-Situ	ND	ND	ND	ND		
Stockpile-3 @ Auger Hole-2	_	12/4/2018	Ex-Situ	ND	86.9	33.5	120		
Stockpile-3 @ Auger Hole-2	_	2/14/2019	Ex-Situ	ND	105	30.3	136		
Stockpile-3 @ Auger Hole-2	_	4/2/2019	Ex-Situ	ND	ND	ND	ND		

mg/Kg - milligrams per Kilogram

Concentrations in **BOLD** exceed NMOCD remediation guidelines

ND - not detected at the reporting limit

NE - not established

— = not determined

In-situ - sample collected in-place

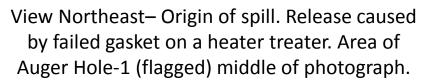
 $Total\ TPH\ reported\ values\ are\ rounded-off\ to\ 3-significant\ figures\ using\ the\ LIMS\ Odd/Even\ Rounding\ Rule\ which\ is\ a\ laboratory\ accepted\ standard$



APPENDIX C

Photo Page





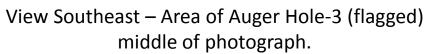


View Northeast— Area of Auger Hole-2 (flagged) middle of photograph.









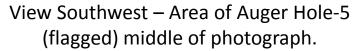


View Southwest – Area of Auger Hole-4 (flagged) middle of photograph.









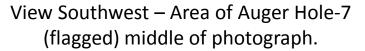


View Southwest – Area of Auger Hole-6 (flagged) middle of photograph.









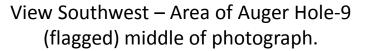


View Southwest – Area of Auger Hole-8 (flagged) middle of photograph.









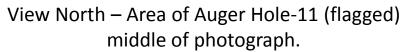


View Southwest – Area of Auger Hole-10 (flagged) middle of photograph.











View North – Area of Auger Hole-12 (flagged) middle of photograph.







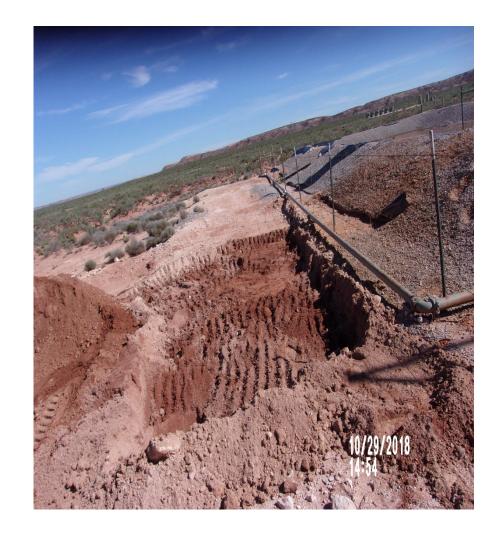
View South – Area of Auger Hole-2, excavation activities in-progress.



View Northeast – Area of Auger Hole-2, excavation activities in-progress.







View East – Area of Auger Hole-1, excavation activities in-progress.



View Southwest – Area of Auger Hole-1, excavation activities in-progress.







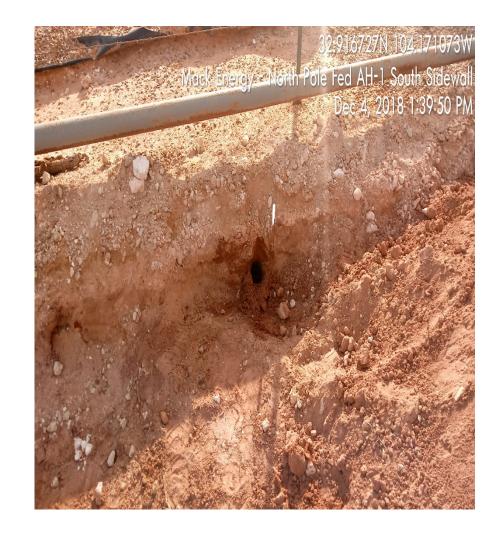
View West – Soil blending of existing stockpiles ongoing.



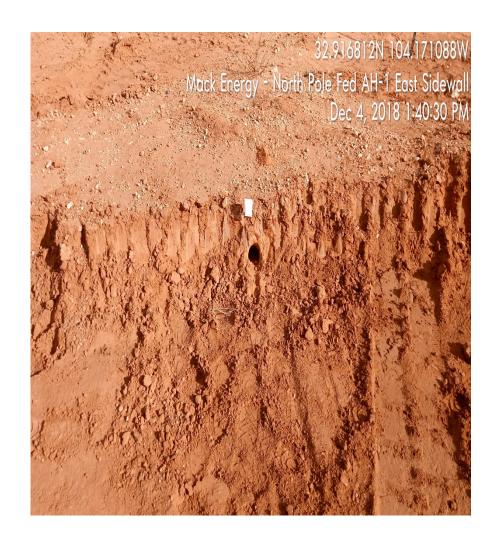
View Northeast – Soil blending of existing stockpiles completed.







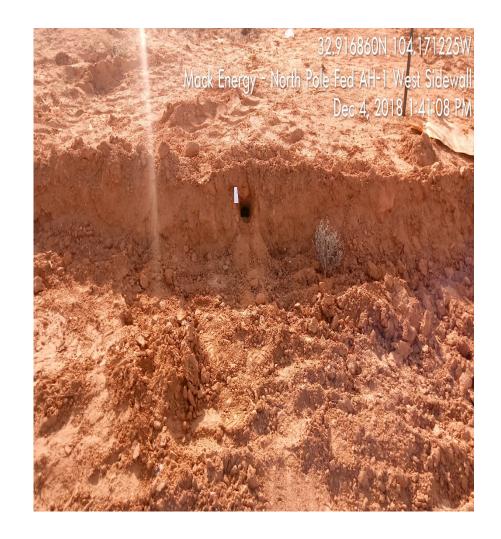
View South – Area of South Sidewall @ Auger Hole-1 (flagged) middle of photograph.

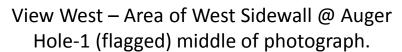


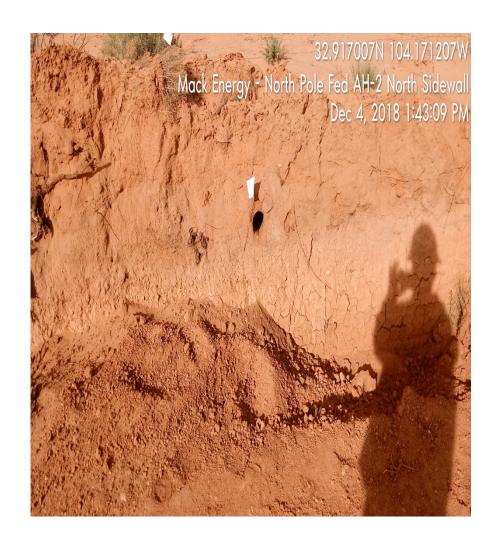
View East – Area of East Sidewall @ Auger Hole-1 (flagged) middle of photograph.







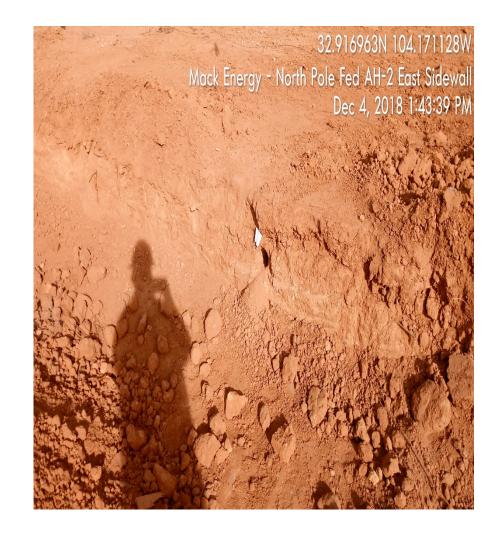


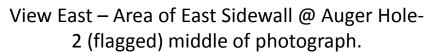


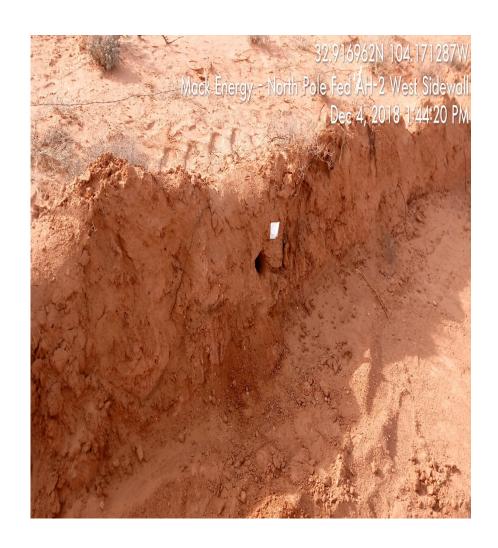
View North – Area of North Sidewall @ Auger Hole-2 (flagged) middle of photograph.







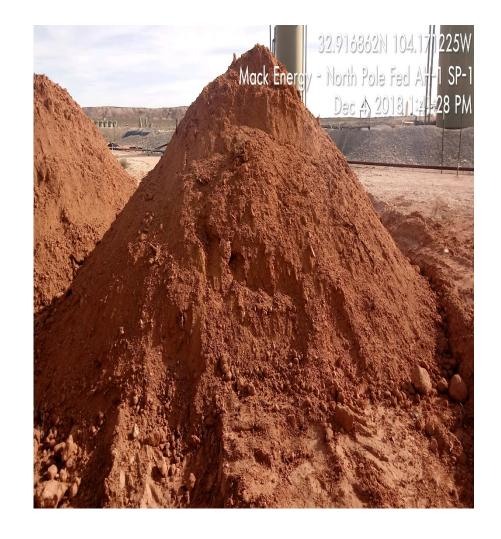




View West – Area of West Sidewall @Auger Hole-2 (flagged) middle of photograph.







View South – Composite sample collected from Stockpile-1 @ Auger Hole -1.



View East – Composite sample collected from Stockpile-2 @ Auger Hole-1.







View Southeast – Composite sample collected from Stockpile-3 @ Auger Hole-1



View North – Composite sample collected from Stockpile-1 @ Auger Hole-2.







View North – Composite sample collected from Stockpile-2 @ Auger Hole-2.



View Southeast – Composite sample collected from Stockpile-3 @ Auger Hole-2.







View North – Surface returned to existing conditions.



View South – Surface returned to existing conditions.







APPENDIX D

Laboratory Analysis

PERMIAN BASIN ENVIRONMENTAL LAB, LP 1400 Rankin Hwy Midland, TX 79701



Analytical Report

Prepared for:

Thomas Franklin
American Safety Services, Inc
8715 Andrews Hwy
Odessa, TEXAS 79765

Project: Mack Energy - North Pole Fed TB

Project Number: [none]
Location: Eddy Co. NM

Lab Order Number: 8G12006



NELAP/TCEQ # T104704516-17-8

Report Date: 07/24/18

American Safety Services, Inc

Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy

Project Number: [none]

Odessa TEXAS, 79765

Project Manager: Thomas Franklin

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Auger Hole 1 (0.0'-0.5')	8G12006-01	Soil	07/09/18 12:30	07-12-2018 08:50
Auger Hole 2 (0.0'-0.5')	8G12006-05	Soil	07/09/18 12:41	07-12-2018 08:50
Auger Hole 3 (0.0'-0.5')	8G12006-11	Soil	07/09/18 12:59	07-12-2018 08:50
Auger Hole 4 (0.0'-0.5')	8G12006-15	Soil	07/09/18 13:07	07-12-2018 08:50
Auger Hole 5 (0.0'-0.5')	8G12006-17	Soil	07/09/18 13:14	07-12-2018 08:50
Auger Hole 6 (0.0'-0.5')	8G12006-19	Soil	07/09/18 13:21	07-12-2018 08:50
Auger Hole 7 (0.0'-0.5')	8G12006-21	Soil	07/09/18 13:28	07-12-2018 08:50
Auger Hole 8 (0.0'-0.5')	8G12006-23	Soil	07/09/18 13:35	07-12-2018 08:50
Auger Hole 9 (0.0'-0.5')	8G12006-25	Soil	07/09/18 13:42	07-12-2018 08:50
Auger Hole 10 (0.0'-0.5')	8G12006-27	Soil	07/09/18 13:49	07-12-2018 08:50
Auger Hole 11 (0.0'-0.5')	8G12006-29	Soil	07/09/18 13:56	07-12-2018 08:50
Auger Hole 12 (0.0'-0.5')	8G12006-31	Soil	07/09/18 14:03	07-12-2018 08:50
Auger Hole 13 (0.0'-0.5')	8G12006-33	Soil	07/10/18 09:50	07-12-2018 08:50
Auger Hole 14 (0.0'-0.5')	8G12006-34	Soil	07/10/18 09:55	07-12-2018 08:50
Auger Hole 15 (0.0'-0.5')	8G12006-35	Soil	07/10/18 10:00	07-12-2018 08:50
Auger Hole 16 (0.0'-0.5')	8G12006-36	Soil	07/10/18 10:05	07-12-2018 08:50
Auger Hole 17 (0.0'-0.5')	8G12006-37	Soil	07/10/18 10:10	07-12-2018 08:50
Auger Hole 18 (0.0'-0.5')	8G12006-38	Soil	07/10/18 10:15	07-12-2018 08:50
Auger Hole 19 (0.0'-0.5')	8G12006-39	Soil	07/10/18 10:20	07-12-2018 08:50
Auger Hole 20 (0.0'-0.5')	8G12006-40	Soil	07/10/18 10:25	07-12-2018 08:50

Fax: (432) 363-0198

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 1 (0.0'-0.5') 8G12006-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perm	ian Basin E	Cnvironment	al Lab, l	L.P.				
Organics by GC									
Benzene	ND	0.00106	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0106	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00532	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0213	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0106	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		107 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.8 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EF % Moisture	PA / Standard Method 6.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80)15M							
C6-C12	ND	26.6	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	352	26.6	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	81.9	26.6	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		121 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		137 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	434	26.6	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 2 (0.0'-0.5') 8G12006-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	Environment	al Lab, l	P.				
Organics by GC									
Benzene	ND	0.00105	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0105	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00526	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0211	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0105	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.0 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EP % Moisture	A / Standard Metho	ds 0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C				-	1001001	07/10/18	07/10/10		
C6-C12	ND	26.3	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	245	26.3	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	49.7	26.3	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		98.2 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		113 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	295	26.3	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 3 (0.0'-0.5') 8G12006-11 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<u> </u>	Pern	nian Basin E	nvironment	al Lab, l	L .P.		<u> </u>		
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-12:	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.6 %	75-123	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EP % Moisture	A / Standard Method 2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C3	35 by EPA Method 80)15M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	56.8	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		94.3 %	70-130)	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		104 %	70-130)	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	56.8	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 4 (0.0'-0.5') 8G12006-15 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pern	nian Basin E	nvironmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.5 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		105 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA /	Standard Method	ds							
% Moisture	3.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 b	y EPA Method 8	015M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		92.4 %	70-13	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		103 %	70-13	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 5 (0.0'-0.5') 8G12006-17 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	Environmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		112 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		92.5 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	3.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		91.8 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		104 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 6 (0.0'-0.5') 8G12006-19 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pern	nian Basin E	nvironment	al Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		83.2 %	75-123	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-123	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EF % Moisture	PA / Standard Method 3.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 8	015M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	39.9	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		93.2 %	70-130)	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-130)	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	39.9	25.8	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg		[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 7 (0.0'-0.5') 8G12006-21 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Invironmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		88.3 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		105 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	3.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 l	oy EPA Method 8	015M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		93.5 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		106 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 8 (0.0'-0.5') 8G12006-23 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	nian Basin E	nvironmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		112 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		91.5 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 l	oy EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		95.9 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 9 (0.0'-0.5') 8G12006-25 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	nvironmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		89.8 %	75-12	?5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		111 %	75-12	?5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		95.1 %	70-13	80	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		108 %	70-13	80	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 10 (0.0'-0.5') 8G12006-27 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	Environmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		112 %	75-12	?5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.2 %	75-12	?5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		89.5 %	70-13	80	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		102 %	70-13	80	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 11 (0.0'-0.5') 8G12006-29 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Environmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		108 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		73.1 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		92.3 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		106 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 12 (0.0'-0.5') 8G12006-31 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Environmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		107 %	75-1	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		89.3 %	75-1	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		94.3 %	70-1	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		102 %	70-1	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 13 (0.0'-0.5') 8G12006-33 (Soil)

Analyte	Result	Reporting Limit	Units I	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pern	nian Basin E	nvironmenta	l Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		85.5 %	75-125		P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		106 %	75-125		P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EP									
% Moisture	3.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C3	35 by EPA Method 8	015M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	33.9	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		92.0 %	70-130		P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		103 %	70-130		P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon	33.9	25.8	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
C6-C35									
C6-C35 BTEX by 8021B									
	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 14 (0.0'-0.5') 8G12006-34 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pern	nian Basin E	nvironment	al Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.2 %	75-123	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-12:	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by El			%	1	P8G1604	07/16/10	07/16/10	ASTM D2216	
% Moisture	2.0	0.1	70	1	F8G1004	07/16/18	07/16/18	ASTM D2210	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	32.2	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		88.9 %	70-130)	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		98.6 %	70-130)	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	32.2	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg		[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 15 (0.0'-0.5') 8G12006-35 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Environmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		107 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		89.1 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	3.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: 1-Chlorooctane		96.7 %	70-1.	30	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: o-Terphenyl		106 %	70-1.	30	P8G1305	07/13/18	07/14/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	07/13/18	07/14/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 16 (0.0'-0.5') 8G12006-36 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	Cnvironmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		105 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.8 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EP % Moisture	A / Standard Metho 2.0	ds 0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C3	35 by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C12-C28	48.9	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C28-C35	26.2	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: 1-Chlorooctane		91.6 %	70-13	0	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: o-Terphenyl		99.9 %	70-13	0	P8G1305	07/13/18	07/14/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	75.1	25.5	mg/kg dry	1	[CALC]	07/13/18	07/14/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 17 (0.0'-0.5') 8G12006-37 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Environmen	ıtal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00122	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0122	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00610	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0244	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0122	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		111 %	75-1	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		91.0 %	75-1	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	18.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	30.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C12-C28	ND	30.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C28-C35	ND	30.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: 1-Chlorooctane		95.3 %	70-1	30	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-1	30	P8G1305	07/13/18	07/14/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	30.5	mg/kg dry	1	[CALC]	07/13/18	07/14/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 18 (0.0'-0.5') 8G12006-38 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	Environmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		85.8 %	75-12	25	P8G1702	07/17/18	07/18/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		107 %	75-12	25	P8G1702	07/17/18	07/18/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: 1-Chlorooctane		87.1 %	70-1.	30	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: o-Terphenyl		95.7 %	70-1.	30	P8G1305	07/13/18	07/14/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/14/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/18/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/18/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 19 (0.0'-0.5') 8G12006-39 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perm	ian Basin E	nvironmen	tal Lab, l	 L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		86.3 %	75-12	25	P8G1702	07/17/18	07/18/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		104 %	75-12	25	P8G1702	07/17/18	07/18/18	EPA 8021B	
General Chemistry Parameters by EPA	/ Standard Method	ls							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 80	15M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		96.1 %	70-13	30	P8G1306	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-13	30	P8G1306	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/18/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/18/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 20 (0.0'-0.5') 8G12006-40 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	nian Basin E	nvironmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1702	07/17/18	07/19/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/19/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1702	07/17/18	07/19/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1702	07/17/18	07/19/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/19/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		92.3 %	75-12	25	P8G1702	07/17/18	07/19/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		83.0 %	75-12	25	P8G1702	07/17/18	07/19/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 l	oy EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		95.0 %	70-1.	30	P8G1306	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		103 %	70-1.	30	P8G1306	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/19/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/19/18	EPA 8021B	

American Safety Services, Inc Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Fax: (432) 363-0198

Organics by GC - Quality Control Permian Basin Environmental Lab, L.P.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Blank (P8G1701-BLK1)				Prepared &	Analyzed:	07/17/18				
Benzene	ND	0.00100	mg/kg wet							
Γoluene	ND	0.0100	"							
Ethylbenzene	ND	0.00500	"							
Xylene (p/m)	ND	0.0200	"							
Xylene (o)	ND	0.0100	"							
Surrogate: 4-Bromofluorobenzene	0.0619		"	0.0600		103	75-125			
Surrogate: 1,4-Difluorobenzene	0.0532		"	0.0600		88.6	75-125			
LCS (P8G1701-BS1)				Prepared &	Analyzed:	07/17/18				
Benzene	0.119	0.00100	mg/kg wet	0.100		119	70-130			
Toluene	0.114	0.0100	"	0.100		114	70-130			
Ethylbenzene	0.115	0.00500	"	0.100		115	70-130			
Xylene (p/m)	0.199	0.0200	"				70-130			
Xylene (o)	0.107	0.0100	"				70-130			
Surrogate: 4-Bromofluorobenzene	0.0606		"	0.0600		101	75-125			
Surrogate: 1,4-Difluorobenzene	0.0593		"	0.0600		98.9	75-125			
LCS Dup (P8G1701-BSD1)				Prepared &	Analyzed:	07/17/18				
Benzene	0.118	0.00100	mg/kg wet	0.100		118	70-130	0.371	20	
Toluene	0.119	0.0100	"	0.100		119	70-130	4.75	20	
Ethylbenzene	0.118	0.00500	"	0.100		118	70-130	3.10	20	
Xylene (p/m)	0.200	0.0200	"				70-130		20	
Xylene (o)	0.109	0.0100	"				70-130		20	
Surrogate: 1,4-Difluorobenzene	0.0600		"	0.0600		100	75-125			
Surrogate: 4-Bromofluorobenzene	0.0597		"	0.0600		99.5	75-125			
Matrix Spike (P8G1701-MS1)	Sour	ce: 8G16001	-02	Prepared &	Analyzed:	07/17/18				
Benzene	0.0908	0.00102	mg/kg dry	0.102	ND	89.0	80-120			
Toluene	0.0877	0.0102	"	0.102	ND	85.9	80-120			
Ethylbenzene	0.104	0.00510	"	0.102	ND	102	80-120			
Xylene (p/m)	0.160	0.0204	"		ND		80-120			
Xylene (o)	0.0817	0.0102	"		ND		80-120			
Surrogate: 4-Bromofluorobenzene	0.0686		"	0.0612		112	75-125			
Surrogate: 1,4-Difluorobenzene	0.0623		"	0.0612		102	75-125			

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Organics by GC - Quality Control Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P8G1701 - General Preparation (G	GC)									
Matrix Spike Dup (P8G1701-MSD1)	Sou	rce: 8G16001	1-02	Prepared &	: Analyzed:	07/17/18				
Benzene	0.103	0.00102	mg/kg dry	0.102	ND	101	80-120	12.4	20	
Toluene	0.0972	0.0102	"	0.102	ND	95.2	80-120	10.3	20	
Ethylbenzene	0.114	0.00510	"	0.102	ND	111	80-120	9.17	20	
Xylene (p/m)	0.173	0.0204	"		ND		80-120		20	
Xylene (o)	0.0940	0.0102	"		ND		80-120		20	
Surrogate: 4-Bromofluorobenzene	0.0715		"	0.0612		117	75-125			
Surrogate: 1,4-Difluorobenzene	0.0647		"	0.0612		106	75-125			
Batch P8G1702 - General Preparation (C	GC)									
Blank (P8G1702-BLK1)				Prepared: 0	07/17/18 A	nalyzed: 07	//18/18			
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.0100	"							
Ethylbenzene	ND	0.00500	"							
Xylene (p/m)	ND	0.0200	"							
Xylene (o)	ND	0.0100	"							
Surrogate: 4-Bromofluorobenzene	0.0577		"	0.0600		96.2	75-125			
Surrogate: 1,4-Difluorobenzene	0.0458		"	0.0600		76.4	75-125			
LCS (P8G1702-BS1)				Prepared: 0	07/17/18 A	nalyzed: 07	//18/18			
Benzene	0.0953	0.00100	mg/kg wet	0.100		95.3	70-130			
Toluene	0.0948	0.0100	"	0.100		94.8	70-130			
Ethylbenzene	0.110	0.00500	"	0.100		110	70-130			
Xylene (p/m)	0.193	0.0200	"				70-130			
Xylene (o)	0.103	0.0100	"				70-130			
Surrogate: 4-Bromofluorobenzene	0.0583		"	0.0600		97.2	75-125			
Surrogate: 1,4-Difluorobenzene	0.0605		"	0.0600		101	75-125			

American Safety Services, Inc

Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy

Project Number: [none]

Odessa TEXAS, 79765

Project Manager: Thomas Franklin

Organics by GC - Quality Control Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P8G1702 - General Preparation (GC)										
LCS Dup (P8G1702-BSD1)				Prepared: 0	07/17/18 A	nalyzed: 07	7/18/18			
Benzene	0.102	0.00100	mg/kg wet	0.100		102	70-130	6.40	20	
Toluene	0.105	0.0100	"	0.100		105	70-130	10.4	20	
Ethylbenzene	0.121	0.00500	"	0.100		121	70-130	9.54	20	
Xylene (p/m)	0.206	0.0200	"				70-130		20	
Xylene (o)	0.104	0.0100	"				70-130		20	
Surrogate: 4-Bromofluorobenzene	0.0649		"	0.0600		108	75-125			
Surrogate: 1,4-Difluorobenzene	0.0627		"	0.0600		104	75-125			
Matrix Spike (P8G1702-MS1)	Sou	ırce: 8G12006	5-38	Prepared: 0	07/17/18 A	nalyzed: 07	//19/18			
Benzene	0.0663	0.00102	mg/kg dry	0.102	ND	65.0	80-120			QM-0:
Toluene	0.0648	0.0102	"	0.102	ND	63.5	80-120			QM-0:
Ethylbenzene	0.0766	0.00510	"	0.102	ND	75.1	80-120			QM-0:
Xylene (p/m)	0.130	0.0204	"		ND		80-120			
Xylene (o)	0.0655	0.0102	"		ND		80-120			
Surrogate: 4-Bromofluorobenzene	0.0688		"	0.0612		112	75-125			
Surrogate: 1,4-Difluorobenzene	0.0671		"	0.0612		110	75-125			
Matrix Spike Dup (P8G1702-MSD1)	Sou	rce: 8G12006	5-38	Prepared: 0	07/17/18 A	nalyzed: 07	//19/18			
Benzene	0.0915	0.00102	mg/kg dry	0.102	ND	89.7	80-120	31.9	20	QM-0:
Toluene	0.0847	0.0102	"	0.102	ND	83.0	80-120	26.6	20	QM-0:
Ethylbenzene	0.100	0.00510	"	0.102	ND	98.0	80-120	26.5	20	QM-0:
Xylene (p/m)	0.167	0.0204	"		ND		80-120		20	
Xylene (o)	0.0896	0.0102	"		ND		80-120		20	
Surrogate: 1,4-Difluorobenzene	0.0642		"	0.0612		105	75-125			
Surrogate: 4-Bromofluorobenzene	0.0628		"	0.0612		103	75-125			

Fax: (432) 363-0198

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P8G1604 - *** DEFAULT PREP ***										
Blank (P8G1604-BLK1)				Prepared &	Analyzed:	07/16/18				
% Moisture	ND	0.1	%							
Duplicate (P8G1604-DUP1)	Sou	ce: 8G12006-	13	Prepared &	Analyzed:	07/16/18				
% Moisture	3.0	0.1	%		3.0			0.00	20	
Duplicate (P8G1604-DUP2)	Sou	ce: 8G12006-	40	Prepared &	: Analyzed:	07/16/18				
% Moisture	4.0	0.1	%		2.0			66.7	20	
Duplicate (P8G1604-DUP3)	Sou	rce: 8G13002-	13	Prepared &	Analyzed:	07/16/18				
% Moisture	6.0	0.1	%		6.0			0.00	20	
Duplicate (P8G1604-DUP4)	Sou	ce: 8G13004-	04	Prepared &	Analyzed:	07/16/18				
% Moisture	3.0	0.1	%		3.0			0.00	20	
Duplicate (P8G1604-DUP5)	Sou	ce: 8G12022-	02	Prepared &	Analyzed:	07/16/18				
% Moisture	10.0	0.1	%		10.0			0.00	20	
Duplicate (P8G1604-DUP6)	Sou	ce: 8G12022-	08	Prepared &	: Analyzed:	07/16/18				
% Moisture	14.0	0.1	%		13.0			7.41	20	
Duplicate (P8G1604-DUP7)	Sou	ce: 8G13001-	13	Prepared &	Analyzed:	07/16/18				
% Moisture	3.0	0.1	%		3.0			0.00	20	
Duplicate (P8G1604-DUP8)	Sou	ce: 8G12006-	40	Prepared &	: Analyzed:	07/16/18				
% Moisture	4.0	0.1	%		2.0			66.7	20	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab, L.P.

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
y	-100411	Ziiiit		20.01	100011	,,,,,	2			
Batch P8G1305 - General Preparation (GC)										
Blank (P8G1305-BLK1)				Prepared &	Analyzed:	07/13/18				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	95.8		"	100		95.8	70-130			
Surrogate: o-Terphenyl	55.4		"	50.0		111	70-130			
LCS (P8G1305-BS1)				Prepared &	Analyzed:	07/13/18				
C6-C12	937	25.0	mg/kg wet	1000		93.7	75-125			
>C12-C28	1000	25.0	"	1000		100	75-125			
Surrogate: 1-Chlorooctane	118		"	100		118	70-130			
Surrogate: o-Terphenyl	51.2		"	50.0		102	70-130			
LCS Dup (P8G1305-BSD1)				Prepared &	: Analyzed:	07/13/18				
C6-C12	930	25.0	mg/kg wet	1000		93.0	75-125	0.769	20	
>C12-C28	985	25.0	"	1000		98.5	75-125	1.52	20	
Surrogate: 1-Chlorooctane	117		"	100		117	70-130			
Surrogate: o-Terphenyl	50.1		"	50.0		100	70-130			
Matrix Spike (P8G1305-MS1)	Sou	ırce: 8G12000	5-38	Prepared: (07/13/18 A:	nalyzed: 07	//14/18			
C6-C12	978	25.5	mg/kg dry	1020	10.1	94.9	75-125			
>C12-C28	1020	25.5	"	1020	ND	99.6	75-125			
Surrogate: 1-Chlorooctane	131		"	102		129	70-130			
Surrogate: o-Terphenyl	57.4		"	51.0		113	70-130			
Matrix Spike Dup (P8G1305-MSD1)	Sor	ırce: 8G12000	5-38	Prepared: (07/13/18 A	nalyzed: 07	//14/18			
C6-C12	1010	25.5	mg/kg dry	1020	10.1	98.4	75-125	3.65	20	
>C12-C28	1030	25.5	"	1020	ND	101	75-125	1.24	20	
Surrogate: 1-Chlorooctane	126		"	102		123	70-130			
-										

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab, L.P.

					-		0/855		222	
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Analyte	Result	Lillit	Offits	Level	Kesuit	/0KEC	Lillits	KFD	Lillit	Notes
Batch P8G1306 - General Preparation (GC)										
Blank (P8G1306-BLK1)				Prepared &	Analyzed:	07/13/18				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	109		"	100		109	70-130			
Surrogate: o-Terphenyl	60.7		"	50.0		121	70-130			
LCS (P8G1306-BS1)				Prepared &	Analyzed:	07/13/18				
C6-C12	1020	25.0	mg/kg wet	1000		102	75-125			
>C12-C28	1090	25.0	"	1000		109	75-125			
Surrogate: 1-Chlorooctane	103		"	100		103	70-130			
Surrogate: o-Terphenyl	50.1		"	50.0		100	70-130			
LCS Dup (P8G1306-BSD1)				Prepared &	Analyzed:	07/13/18				
C6-C12	1020	25.0	mg/kg wet	1000		102	75-125	0.495	20	
>C12-C28	1100	25.0	"	1000		110	75-125	0.832	20	
Surrogate: 1-Chlorooctane	102		"	100		102	70-130			
Surrogate: o-Terphenyl	50.0		"	50.0		99.9	70-130			
Matrix Spike (P8G1306-MS1)	Sou	rce: 8G12000	5-39	Prepared: (07/13/18 A	nalyzed: 07	/14/18			
C6-C12	1040	25.5	mg/kg dry	1020	22.7	100	75-125			
>C12-C28	1070	25.5	"	1020	13.9	104	75-125			
Surrogate: 1-Chlorooctane	115		"	102		112	70-130			
Surrogate: o-Terphenyl	57.5		"	51.0		113	70-130			
Matrix Spike Dup (P8G1306-MSD1)	Sou	rce: 8G12000	5-39	Prepared: (07/13/18 A	nalyzed: 07	/14/18			
C6-C12	1090	25.5	mg/kg dry	1020	22.7	105	75-125	4.97	20	
>C12-C28		25.5	"	1020	13.9	109	75-125	4.92	20	
C12-C28	1130	23.3		1020	13.9	107	13-123	1.72	20	
Surrogate: 1-Chlorooctane	1130	23.3	"	1020	13.7	116	70-130	1.72		

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were

within acceptance limits showing that the laboratory is in control and the data is acceptable.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

	Drew	Darron			
Report Approved By:			Date:	7/24/2018	

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Special Instructions: ORDER #: (lab use only) Relinquished by: Relinquished by: Relinquished by: すなが Company Address: Sampler Signature: Telephone No: City/State/Zip: Company Name Project Manager: chasans 3 exceeds Auger Hole 2 Auger Hole 1 Auger Hole 2 Auger Hole 1 Auger Hole 1 Auger Hole 1 FIELD CODE Jay Latta 8715 Andrews Hwy. American Safety Services Inc. 432-557-9868/432-552-7625 Odessa, TX 79765 Mr.C. loc mg/kg
Date Sylsmalks 7/2/18 Date Date Ç ć 0880 رة 2 20 0.5 _ _ 0.0 0.5'0.0 ئة -7 Beginning Depth <u>.</u> က် me Time Time de de de 3.O 2.5 2.0<u>'</u> <u>ب</u> ٦ <u>.</u> 0.5 2.0<u>.</u> <u>က</u> 1.0 0.5 Ending Depth BIES Received by: Received by Received by: 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 Some of Date Sampled excoods 1249 1245 1243 1247 1241 1230 1251 1236 1234 1232 Fax No: Time Sampled e-mail: SO malks Z Z Z Z Z Z Z Z Field Filtered Permian Basin Environmental Lab, LP 7 10014 S. County Road 1213 Midland, Texas 79706 Total #. of Containers trankly reich@americansafety.net <u>ıdial@americansafety.net</u> × × × × × × Ice HNO₃ 3 HCI 1980000 H₂SO₄ NaOH Na₂S₂O₃ None Other (Specify) Date S-Grab S-Grab S-Grab S-Grab S-Grab S-Grab S-Grab S-Grab S-Grab DW=Drinking Water SL=Sludge S-Grab Report Format: Project Name: Mack Energy-North Pole Fed TB 0.83 Project Loc: Eddy Co. 4X Time ime (PH) 418.1 (8015M) 8015B Project #: TX 1005 TX 1006 PD#: Custody seals on cooler(s)
Sample Hand Delivered Labels on container(s)
Custody seals on container(s) Adjusted: -() Temperature Upon Receipt: Received: -/ °C Sample Containers Intact? Cations (Ca, Mg, Na, K) VOCs Free of Headspace? Laboratory Comments: by Courier? by Sampler/Client Rep. ? Anions (CI, SO4, Alkalinity) TOTAL ☐ Standard TOLP: SAR / ESP / CEC Phone: 432-686-7235 vletals: As Ag Ba Cd Cr Pb Hg Se Analyze For: Volatiles UPS °C Factor D. 4 ス BTEX 8021B/8030 or BTEX 8260 TRR N.O.R.M. Chloride 18 Hold NPDES Lone Star zzz 2 zzz RUSH TAT (Pre-Schedule) 24, 48, 72 hrs Standard TAT Page 30 of 33

AB # (lab use only)

(lab use only) ORDER #: Relinquished by: Relinquished by: Relinquished by: Special Instructions: Company Address: 8715 Andrews Hwy Company Name Project Manager: Sampler Signature: Telephone No: City/State/Zip: Auger Hole 3 Auger Hole 5 Auger Hole 5 Auger Hole 4 Auger Hole 4 Auger Hole 3 Auger Hole 3 Auger Hole 3 Auger Hole 🍪 Auger Hole 6 FIELD CODE 432-557-9868/432-552-7625 Odessa, TX 79765 American Safety Services Inc. Jay Latta Mr. Chr. CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST 11118 Date Date Date 0.5 0.0'0.0 0.5 0.5 0.5 0.0 <u>က်</u> 0.0 0690 Beginning Depth 0 Time me ime 0.5 <u>.</u> 0.5 ည် __ <u>1</u>0 <u>5</u> . ! ! Ending Depth Ö ó ວັ Received by Received by: Received by: 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 Date Sampled 1300 1316 1309 1302 1307 1258 Fax No: 1323 1314 256 321 Time Sampled e-mail: Permian Basin Environmental Lab, LP z z z z Z z z z Field Filtered Midland, Texas 79706 10014 S. County Road 1213 Z Total #. of Containers latta@americansafety.net reich@americansafety.net dial@americansafety.ne × × × × × × × ce HNO₃ HCI H₂SO₄ NaOH icansafety.net Na₂S₂O₃ None Other (Specify) Date Date S-Grab DW=Drinking Water SL=Sludge PG 1 of 1 Report Format: Project Name: Mack Energy-North Pole Fed Specify Other Project Loc: Eddy Co. 28 1/107 Time Time Ime × 8015M 8015B JPH:> 418.1 Project #: TX 1005 TX 1006 PO#: VOCs Free of Headspace?

Labels on container(s)
Custody seals on container(s)
Custody seals on cooler(s) Sample Hand Delivered Received: ~ Temperature, Upon Receipt: Laboratory Comments: Sample Containers Intact? Cations (Ca, Mg, Na, K) by Courier? by Sampler/Client Rep. ? Anions (Cl. SO4, Alkalinity) TOTAL: ☐ Standard TCLP: SAR / ESP / CEC Phone: 432-686-7235 Metals: As Ag Ba Cd Cr Pb Hg Se Analyze Volatiles Semivolatiles S 9 °C Factor 7 STEX 80215/5030 or BTEX 8260 TRRP RCI N.O.R.M. Chloride K Hold ベ ~ × ☐ NPDES ZZ ZZZ RUSH TAT (Pre-Schedule) 24, 48, 72 hrs Page 31 of 33 Standard TAT

AB # (lab use only)

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

PG 1 of 1

10014 S. County Road 1213

Midland, Texas 79706 Permian Basin Environmental Lab, LP

Project Name: Mack Energy-North Pole Fed TB

Page 32 of 33

Phone: 432-686-7235

Project Loc: Eddy Co. Get N/M

Project #:

	Auger Hole 11	Auger Hole 11	Auger Hole 10	Auger Hole 10	Auger Hole 9	Auger Hole 9	Auger Hole 8	Auger Hole 8	Auger Hole 7	Auger Hole 7	FIELD CODE	YUU 6	7 72			ature: Mill): 432-557-9868/432-552-7625	
											A					4	3/432-552-76	
[0.5'	0.0	0.5	0.0'	0.5'	0.0'	0.5	0.0'	0.5'	0.0'	Beginning Depth						25	
	1.0'	0.5'	1.0'	0.5	1.0*	0.5	1.0'	0.5	1.0"	0.5	Ending Depth							
., .,	7/9/2018	7/9/2018	7/9/2018	7/9/2018	7/9/2018	7/9/2018	7/9/2018	7/9/2018	7/9/2018	7/9/2018	Date Sampled							
	1358	1356	1351	1349	1344	1342	1337	1335	1330	1328	Time Sampled					e-mail:	Fax No:	
ŀ	Z	z	z	z	z	z	z	z	z	z	Field Filtered	-	<u> </u>	17	1	·	7	
ŀ	1		_	<u> </u>				<u>></u>		_	Total #. of Containers	╄	mdial@americansafety.net	reich@americansafety.net	zimmerman@americansafety.net	latta		
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ŀ			_	┢	┡	<u> </u>	_	┢	<u> </u>	┢	HNO ₃	Preservation & # of Containers	am)am	ma	ame		
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	S-Grah	S-Grab	S-Grab	S-Grab	S-Grab	S-Grab	S-Grab	S-Grab	S-Grab	S-Grab	GW = Groundwater S=Soil/Solid	Matrix			124		장	
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╁	_									· · ·	Cations (Ca, Mg, Na, K) Anions (Cl, SO4, Alkalinity)						_	
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Special Instructions:

Relinquished by:

7/12/16 Date

0880

Received by:

Date

Time

Sample Hand Delivered by Sampler/Client Rep. ?

05:8

by Courier? UPS DI
Temperature Upon Receipt:

Received: 1 °C
Adjusted: 1 C Fac

°C Factor D. U

Lone Star

Date

Time

VOCs Free of Headspace?
Labels on container(s).
Custody seals on container(s)
Custody seals on cooler(s)

z z ż z **z** z

Date

Time

Received by:

Date

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Received by P

Relinquished by:

Relinquished by:

ORDER#:

AB # (lab use only)

(lab use only)

Sampler Signature:

Telephone No:

City/State/Zip:

Company Address: 8715 Andrews Hwy.

Company Name

American Safety Services Inc.

Project Manager:

Jay Latta

Company Name

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Company Address: 8715 Andrews Hwy. Project Manager: American Safety Services Inc. Jay Latta Odessa, TX 79765 Permian Basin Environmental Lab, LP 10014 S. County Road 1213 Midland, Texas 79706 Project Name: Mack Energy-North Pole Fed TB Project Loc: Eddy Co. 200 Project #: PO #: Phone: 432-686-7235 Page 33 of 33

City/State/Zip:	9/Zip: Odessa, TX 79765	9765								Ì	1			1		ļ				ӯ	P0 #:		1												
Telephone No:	e No: 432-557-9868/432-552-7625	/432-552-762	0			Fax No:	7						ı	1			교	ğ	7	Report Format:	ii.	П	S	Standard	ā		П	<u> </u>	TRRP	U	_		NPDES	S	
Sampler	Sampler Signature: Much	4				e-mail:		latt	latta@americansa	me	rica	Sen	fet	fety.net)# <u>.</u>																				
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(lab use only)							- I	ndi le	<u>rreich@americansatety.net</u> mdial@americansatety.net		쭚뜮	ans Sale	ate afet	<u>lfety.net</u> fety. <u>net</u>	딸							ᆲᆲ	TCLP:	" ["		+	+							2 hrs	
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LAB # (lab use only	FIELD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #, of Containers	Ice HNO₃	HCI	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None None	Other (Specify)	DW=Drinking Water SL=S	GW = Greundwater :S=Sol	NP=Nen-Potable Specify	TPH 418.1 8015	TPH: TX 1005 T	Cations (Ca, Mg, Na, K	Aniens (Cl, SO4, Alkali	SAR / ESP / CEC	Metals: As Ag Ba Cd C	Volatiles	Semivolatiles	STEX 802 B/5030 or B	RCI	N.O.R.M.		Chloride	Hold	DUOU TAT	RUSH TAT (Pre-School	Standard TAT
多]	Auger Hole 12		0.0	0.51	7/9/2018	1403	z		×		 	<u> </u>	├	\vdash	┝	(0	S-Grab	lab	7								冷	′				\vdash			
β.	Auger Hole 12		0.5	1.0'	7/9/2018	1405	z	1	×	╀─	┼─		├	├	├─		S-Grab	rab						Γ				 			- D-	*		 	لــا
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Auger Hole 13		0.0	0.5	7/10/2018	950	z	_	×			!	-	\vdash	┝	(0	S-Grab	rab	X								7		 		<u> </u>				
34	Auger Hole 14		0.0	0.5	7/10/2018	955	z		×	├			-	-	H	(0	S-Grab	lab	木							 	-	۲	 	\vdash		~			لييا
8	Auger Hole 15		i O	0.5	7/10/2018	1000	z	1	×	⊢	⊬	├─	-	├	├	(0	S-Grab		75							\vdash	×		 	 	<u> </u>	 		<u> </u>	
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37	Auger Hole 17		0.0	0.5	7/10/2018	1010	z	_	×	-	<u> </u>	-		-	-	(0	S-Grab	ab	75								ス		_					-	
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-39	Auger Hole 19		0.0'	0.5	7/10/2018	1020	z		×	┝╌	-	├-		├	┢╌	(0)	S-Grab	rab	×					\vdash				-	 	 	<u> </u>	 	 	 	
400	Auger Hole 20		0.0	0.5	7/10/2018	1025	z		×	 	-	\vdash		<u> </u>	<u> </u>	-6	S-Grab	ab	8	-		-					ベ	Ť							
Special Instructions:	s:																	j			La Sa	ng og	CO	intal C	Laboratory Comments: Sample Containers Intact?	. <u> </u>	व्य	, 2	#1.35 6/5.31		15		Z.		37.0
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PERMIAN BASIN ENVIRONMENTAL LAB, LP 1400 Rankin Hwy Midland, TX 79701



Analytical Report

Prepared for:

Thomas Franklin
American Safety Services, Inc
8715 Andrews Hwy
Odessa, TEXAS 79765

Project: Mack Energy - North Pole Fed TB

Project Number: [none]
Location: Eddy Co. NM

Lab Order Number: 8G12006



NELAP/TCEQ # T104704516-17-8

Report Date: 07/31/18

American Safety Services, Inc

Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy

Project Number: [none]

Odessa TEXAS, 79765

Project Manager: Thomas Franklin

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Auger Hole 1 (0.0'-0.5')	8G12006-01	Soil	07/09/18 12:30	07-12-2018 08:50
Auger Hole 1 (0.5'-1.0')	8G12006-02	Soil	07/09/18 12:32	07-12-2018 08:50
Auger Hole 1 (1.0'-1.5')	8G12006-03	Soil	07/09/18 12:34	07-12-2018 08:50
Auger Hole 2 (0.0'-0.5')	8G12006-05	Soil	07/09/18 12:41	07-12-2018 08:50
Auger Hole 2 (0.5'-1.0')	8G12006-06	Soil	07/09/18 12:43	07-12-2018 08:50
Auger Hole 2 (1.0'-1.5')	8G12006-07	Soil	07/09/18 12:45	07-12-2018 08:50
Auger Hole 2 (1.5'-2.0')	8G12006-08	Soil	07/09/18 12:47	07-12-2018 08:50
Auger Hole 2 (2.0'-2.5')	8G12006-09	Soil	07/09/18 12:49	07-12-2018 08:50
Auger Hole 3 (0.0'-0.5')	8G12006-11	Soil	07/09/18 12:59	07-12-2018 08:50
Auger Hole 4 (0.0'-0.5')	8G12006-15	Soil	07/09/18 13:07	07-12-2018 08:50
Auger Hole 5 (0.0'-0.5')	8G12006-17	Soil	07/09/18 13:14	07-12-2018 08:50
Auger Hole 6 (0.0'-0.5')	8G12006-19	Soil	07/09/18 13:21	07-12-2018 08:50
Auger Hole 7 (0.0'-0.5')	8G12006-21	Soil	07/09/18 13:28	07-12-2018 08:50
Auger Hole 8 (0.0'-0.5')	8G12006-23	Soil	07/09/18 13:35	07-12-2018 08:50
Auger Hole 9 (0.0'-0.5')	8G12006-25	Soil	07/09/18 13:42	07-12-2018 08:50
Auger Hole 10 (0.0'-0.5')	8G12006-27	Soil	07/09/18 13:49	07-12-2018 08:50
Auger Hole 11 (0.0'-0.5')	8G12006-29	Soil	07/09/18 13:56	07-12-2018 08:50
Auger Hole 12 (0.0'-0.5')	8G12006-31	Soil	07/09/18 14:03	07-12-2018 08:50
Auger Hole 13 (0.0'-0.5')	8G12006-33	Soil	07/10/18 09:50	07-12-2018 08:50
Auger Hole 14 (0.0'-0.5')	8G12006-34	Soil	07/10/18 09:55	07-12-2018 08:50
Auger Hole 15 (0.0'-0.5')	8G12006-35	Soil	07/10/18 10:00	07-12-2018 08:50
Auger Hole 16 (0.0'-0.5')	8G12006-36	Soil	07/10/18 10:05	07-12-2018 08:50
Auger Hole 17 (0.0'-0.5')	8G12006-37	Soil	07/10/18 10:10	07-12-2018 08:50
Auger Hole 18 (0.0'-0.5')	8G12006-38	Soil	07/10/18 10:15	07-12-2018 08:50
Auger Hole 19 (0.0'-0.5')	8G12006-39	Soil	07/10/18 10:20	07-12-2018 08:50
Auger Hole 20 (0.0'-0.5')	8G12006-40	Soil	07/10/18 10:25	07-12-2018 08:50

Fax: (432) 363-0198

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 1 (0.0'-0.5') 8G12006-01 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Per	mian Basin E	nvironment	al Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00106	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0106	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00532	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0213	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0106	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		107 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.8 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA / Sta	ndard Metho	ds							
% Moisture	6.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by E	PA Method 8	8015M							
C6-C12	ND	26.6	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	352	26.6	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	81.9	26.6	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		121 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		137 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	434	26.6	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

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599

Auger Hole 1 (0.5'-1.0') 8G12006-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pern	nian Basin E	nvironme	ntal Lab, I	L.P.				
General Chemistry Parameters by EPA / Sta	ndard Method	ls							
% Moisture	6.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by E	PA Method 80	015M							
C6-C12	ND	26.6	mg/kg dry	1	P8G2704	07/27/18	07/30/18	TPH 8015M	
>C12-C28	468	26.6	mg/kg dry	1	P8G2704	07/27/18	07/30/18	TPH 8015M	

26.6 mg/kg dry

26.6 mg/kg dry

70-130

70-130

125 %

129 %

P8G2704

P8G2704

P8G2704

[CALC]

07/27/18

07/27/18

07/27/18

07/27/18

07/30/18 07/30/18

07/30/18

07/30/18

Permian Basin Environmental Lab, L.P.

>C28-C35

C6-C35

 $Surrogate: \ 1\hbox{-}Chlorooctane$

Total Petroleum Hydrocarbon

Surrogate: o-Terphenyl

TPH 8015M

TPH 8015M

TPH 8015M

calc

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 1 (1.0'-1.5') 8G12006-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Permi	an Basin E	nvironme	ntal Lab, I	L .P.				
General Chemistry Parameters by E	CPA / Standard Methods								
% Moisture	4.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-	C35 by EPA Method 801	5M							
C6-C12	ND	26.0	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M	
>C12-C28	63.7	26.0	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M	

70-130

70-130

P8G2704

P8G2704

[CALC]

07/27/18

07/27/18

07/27/18

07/27/18

07/27/18

07/27/18

TPH 8015M TPH 8015M

calc

94.8 %

95.8 %

63.7

 $26.0 \quad \text{mg/kg dry}$

Surrogate: 1-Chlorooctane

Total Petroleum Hydrocarbon

Surrogate: o-Terphenyl

C6-C35

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 2 (0.0'-0.5') 8G12006-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	Environment	al Lab, l	P.				
Organics by GC									
Benzene	ND	0.00105	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0105	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00526	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0211	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0105	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.0 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EP % Moisture	A / Standard Metho	ds 0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C				-	1001001	07/10/18	07/10/10		
C6-C12	ND	26.3	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	245	26.3	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	49.7	26.3	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		98.2 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		113 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	295	26.3	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

Fax: (432) 363-0198 American Safety Services, Inc Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

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Auger Hole 2 (0.5'-1.0') 8G12006-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			vironm	ental Lab, l	L .P.				
General Chemistry Parameters by EPA / S	<u>tandard Methods</u>								
% Moisture	5.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M C6-C12 ND

P8G1305 TPH 8015M 26.3 mg/kg dry 07/13/18 07/13/18 207 26.3 mg/kg dry 1 P8G1305 TPH 8015M >C12-C28 07/13/18 07/13/18 TPH 8015M 26.3 mg/kg dry P8G1305 >C28-C35 47.3 07/13/18 07/13/18 TPH 8015M $Surrogate: \ 1\hbox{-}Chlorooctane$ 97.0 % 70-130 P8G1305 07/13/18 07/13/18 07/13/18 TPH 8015M Surrogate: o-Terphenyl P8G1305 07/13/18 110 % 70-130

26.3 mg/kg dry

[CALC]

07/13/18

07/13/18

calc

Total Petroleum Hydrocarbon C6-C35

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 2 (1.0'-1.5') 8G12006-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Permi	ian Basin E	nvironme	ental Lab, I	P.				

General Chemistry Parameters by EP	A / Standard Methods	S						
% Moisture	6.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216
Total Petroleum Hydrocarbons C6-C3	5 by EPA Method 80	15M						
C6-C12	ND	26.6	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M
>C12-C28	135	26.6	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M
>C28-C35	ND	26.6	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M
Surrogate: 1-Chlorooctane		95.2 %	70-130		P8G1305	07/13/18	07/13/18	TPH 8015M
Surrogate: o-Terphenyl		109 %	70-130		P8G1305	07/13/18	07/13/18	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	135	26.6	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc

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8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 2 (1.5'-2.0') 8G12006-08 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Permi	an Basin Ei	nvironmo	ental Lab, L	P.				

General Chemistry Parameters by EP.	A / Standard Method	ls						
% Moisture	6.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216
Total Petroleum Hydrocarbons C6-C3	5 by EPA Method 80	15M						
C6-C12	ND	26.6	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M
>C12-C28	158	26.6	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M
>C28-C35	35.0	26.6	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M
Surrogate: 1-Chlorooctane		95.2 %	70-130		P8G2704	07/27/18	07/27/18	TPH 8015M
Surrogate: o-Terphenyl		95.9 %	70-130		P8G2704	07/27/18	07/27/18	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	193	26.6	mg/kg dry	1	[CALC]	07/27/18	07/27/18	calc

Fax: (432) 363-0198 American Safety Services, Inc Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 2 (2.0'-2.5') 8G12006-09 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Permi	an Rasin Eı	nvironme	ental Lah. I	. Р				

General Chemistry Parameters by EP	A / Standard Method	s						
% Moisture	4.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216
Total Petroleum Hydrocarbons C6-C3	5 by EPA Method 80	15M						
C6-C12	ND	26.0	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M
>C12-C28	38.0	26.0	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M
>C28-C35	ND	26.0	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M
Surrogate: 1-Chlorooctane		90.2 %	70-130		P8G2704	07/27/18	07/27/18	TPH 8015M
Surrogate: o-Terphenyl		91.2 %	70-130		P8G2704	07/27/18	07/27/18	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	38.0	26.0	mg/kg dry	1	[CALC]	07/27/18	07/27/18	calc

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 3 (0.0'-0.5') 8G12006-11 (Soil)

Analyta	Result	Reporting Limit	Units	Dilution	Batch	Droporod	Analyzad	Method	Notes
Analyte	Result	Limit	Units	Dilution	Ваисп	Prepared	Analyzed	Method	note
	Pern	nian Basin E	invironment	al Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.6 %	75-125	i	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-125	ī	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EP	A / Standard Method	ls							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C3	35 by EPA Method 80	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	56.8	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		94.3 %	70-130)	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		104 %	70-130)	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon	56.8	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
C6-C35									
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 4 (0.0'-0.5') 8G12006-15 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pern	nian Basin E	Environment	al Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		105 %	75-12.	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.5 %	75-12.	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA / S	tandard Metho	ds							
% Moisture	3.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by	EPA Method 8	015M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		92.4 %	70-13	9	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		103 %	70-13	9	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 5 (0.0'-0.5') 8G12006-17 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	Environmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		112 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		92.5 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	3.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		91.8 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		104 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 6 (0.0'-0.5') 8G12006-19 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pern	nian Basin E	Environment	al Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		83.2 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by El	PA / Standard Method	ls							
% Moisture	3.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80)15M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	39.9	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		93.2 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon	39.9	25.8	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
C6-C35									
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 7 (0.0'-0.5') 8G12006-21 (Soil)

		Donostina							
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	nvironmen	al Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		105 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		88.3 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA / St	andard Metho	ds							
% Moisture	3.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by	EPA Method 8	015M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		93.5 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		106 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 8 (0.0'-0.5') 8G12006-23 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Invironmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		112 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		91.5 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		95.9 %	70-13	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-13	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 9 (0.0'-0.5') 8G12006-25 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	nvironmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		89.8 %	75-12	?5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		111 %	75-12	?5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		95.1 %	70-13	80	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		108 %	70-13	80	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 10 (0.0'-0.5') 8G12006-27 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	nian Basin E	Invironmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		112 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.2 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 l	oy EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		89.5 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		102 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 11 (0.0'-0.5') 8G12006-29 (Soil)

		ъ .:							
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	nvironmen	al Lab, l					
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		108 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		73.1 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA / St	andard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by	EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		92.3 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		106 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 12 (0.0'-0.5') 8G12006-31 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Invironmen	tal Lab, l	L.P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		89.3 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		107 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	8015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		94.3 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		102 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 13 (0.0'-0.5') 8G12006-33 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pern	nian Basin E	nvironment	al Lab, I	L .P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		106 %	75-12.	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		85.5 %	75-12.	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EF % Moisture	A / Standard Method 3.0	ds 0.1	9%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 8	015M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	33.9	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		92.0 %	70-13)	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		103 %	70-13)	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	33.9	25.8	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
	ND	0.0300	mg/kg		[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 14 (0.0'-0.5') 8G12006-34 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
·	Pern	nian Basin F	Invironment	al Lab. 1	L. P.	-	-		
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-12:	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.2 %	75-123	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EP	'A / Standard Method	ls							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C.	35 by EPA Method 80)15M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	32.2	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		88.9 %	70-130)	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		98.6 %	70-130)	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	32.2	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 15 (0.0'-0.5') 8G12006-35 (Soil)

		ъ .:							
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	nvironmen	tal Lab, l					
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		89.1 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		107 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA / St	tandard Metho	ds							
% Moisture	3.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by	EPA Method 8	015M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: 1-Chlorooctane		96.7 %	70-13	0	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: o-Terphenyl		106 %	70-13	0	P8G1305	07/13/18	07/14/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	07/13/18	07/14/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 16 (0.0'-0.5') 8G12006-36 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pern	nian Basin E	nvironmenta	ıl Lab, l	L.P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.8 %	75-125		P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		105 %	75-125		P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EI % Moisture	PA / Standard Method 2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80)15M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C12-C28	48.9	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C28-C35	26.2	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: 1-Chlorooctane		91.6 %	70-130)	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: o-Terphenyl		99.9 %	70-130)	P8G1305	07/13/18	07/14/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	75.1	25.5	mg/kg dry	1	[CALC]	07/13/18	07/14/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 17 (0.0'-0.5') 8G12006-37 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Environmen	ıtal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00122	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0122	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00610	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0244	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0122	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		111 %	75-1	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		91.0 %	75-1	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	18.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	30.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C12-C28	ND	30.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C28-C35	ND	30.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: 1-Chlorooctane		95.3 %	70-1	30	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-1	30	P8G1305	07/13/18	07/14/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	30.5	mg/kg dry	1	[CALC]	07/13/18	07/14/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 18 (0.0'-0.5') 8G12006-38 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	nian Basin E	Environmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		107 %	75-12	?5	P8G1702	07/17/18	07/18/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		85.8 %	75-12	?5	P8G1702	07/17/18	07/18/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: 1-Chlorooctane		87.1 %	70-13	80	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: o-Terphenyl		95.7 %	70-13	80	P8G1305	07/13/18	07/14/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/14/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/18/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/18/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 19 (0.0'-0.5') 8G12006-39 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Environmen	tal Lab,	L.P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		104 %	75-1.	25	P8G1702	07/17/18	07/18/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		86.3 %	75-1.	25	P8G1702	07/17/18	07/18/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		96.1 %	70-1.	30	P8G1306	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-1.	30	P8G1306	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/18/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/18/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 20 (0.0'-0.5') 8G12006-40 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	nian Basin E	nvironmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1702	07/17/18	07/19/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/19/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1702	07/17/18	07/19/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1702	07/17/18	07/19/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/19/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		92.3 %	75-12	25	P8G1702	07/17/18	07/19/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		83.0 %	75-12	25	P8G1702	07/17/18	07/19/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 l	oy EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		95.0 %	70-1.	30	P8G1306	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		103 %	70-1.	30	P8G1306	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/19/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/19/18	EPA 8021B	

American Safety Services, Inc Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Fax: (432) 363-0198

Organics by GC - Quality Control Permian Basin Environmental Lab, L.P.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Blank (P8G1701-BLK1)				Prepared &	Analyzed:	07/17/18				
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.0100	"							
Ethylbenzene	ND	0.00500	"							
Xylene (p/m)	ND	0.0200	"							
Xylene (o)	ND	0.0100	"							
Surrogate: 1,4-Difluorobenzene	0.0532		"	0.0600		88.6	75-125			
Surrogate: 4-Bromofluorobenzene	0.0619		"	0.0600		103	75-125			
LCS (P8G1701-BS1)				Prepared &	Analyzed:	07/17/18				
Benzene	0.119	0.00100	mg/kg wet	0.100		119	70-130			
Toluene	0.114	0.0100	"	0.100		114	70-130			
Ethylbenzene	0.115	0.00500	"	0.100		115	70-130			
Xylene (p/m)	0.199	0.0200	"				70-130			
Xylene (o)	0.107	0.0100	"				70-130			
Surrogate: 1,4-Difluorobenzene	0.0593		"	0.0600		98.9	75-125			
Surrogate: 4-Bromofluorobenzene	0.0606		"	0.0600		101	75-125			
LCS Dup (P8G1701-BSD1)				Prepared &	Analyzed:	07/17/18				
Benzene	0.118	0.00100	mg/kg wet	0.100		118	70-130	0.371	20	
Toluene	0.119	0.0100	"	0.100		119	70-130	4.75	20	
Ethylbenzene	0.118	0.00500	"	0.100		118	70-130	3.10	20	
Xylene (p/m)	0.200	0.0200	"				70-130		20	
Xylene (o)	0.109	0.0100	"				70-130		20	
Surrogate: 4-Bromofluorobenzene	0.0597		"	0.0600		99.5	75-125			
Surrogate: 1,4-Difluorobenzene	0.0600		"	0.0600		100	75-125			
Matrix Spike (P8G1701-MS1)	Sour	ce: 8G16001	1-02	Prepared &	Analyzed:	07/17/18				
Benzene	0.0908	0.00102	mg/kg dry	0.102	ND	89.0	80-120			
Γoluene	0.0877	0.0102	"	0.102	ND	85.9	80-120			
Ethylbenzene	0.104	0.00510	"	0.102	ND	102	80-120			
Xylene (p/m)	0.160	0.0204	"		ND		80-120			
Xylene (o)	0.0817	0.0102	"		ND		80-120			
Surrogate: 1,4-Difluorobenzene	0.0623		"	0.0612		102	75-125			
Surrogate: 4-Bromofluorobenzene	0.0686		"	0.0612		112	75-125			

8715 Andrews Hwy

Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Organics by GC - Quality Control Permian Basin Environmental Lab, L.P.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P8G1701 - General Preparation (GC)										
Matrix Spike Dup (P8G1701-MSD1)	Sou	rce: 8G16001	-02	Prepared &	Analyzed:	07/17/18				
Benzene	0.103	0.00102	mg/kg dry	0.102	ND	101	80-120	12.4	20	
Toluene	0.0972	0.0102	"	0.102	ND	95.2	80-120	10.3	20	
Ethylbenzene	0.114	0.00510	"	0.102	ND	111	80-120	9.17	20	
Xylene (p/m)	0.173	0.0204	"		ND		80-120		20	
Xylene (o)	0.0940	0.0102	"		ND		80-120		20	
Surrogate: 1,4-Difluorobenzene	0.0647		"	0.0612		106	75-125			
Surrogate: 4-Bromofluorobenzene	0.0715		"	0.0612		117	75-125			
Batch P8G1702 - General Preparation (GC) Blank (P8G1702-BLK1)				Prepared: 0	07/17/10 A	makuzadi 07	1/10/10			
Benzene	ND	0.00100	mg/kg wet	Prepared. C)//1//10 A	naryzeu. 07	/10/10			
Toluene	ND	0.0100	mg/kg wet							
Ethylbenzene	ND	0.00500	"							
Xylene (p/m)	ND	0.0200	"							
Xylene (o)	ND	0.0100	"							
Surrogate: 4-Bromofluorobenzene	0.0577		"	0.0600		96.2	75-125			
Surrogate: 1,4-Difluorobenzene	0.0458		"	0.0600		76.4	75-125			
LCS (P8G1702-BS1)				Prepared: 0)7/17/18 A	nalyzed: 07	//18/18			
Benzene	0.0953	0.00100	mg/kg wet	0.100		95.3	70-130			
Toluene	0.0948	0.0100	"	0.100		94.8	70-130			
Ethylbenzene	0.110	0.00500	"	0.100		110	70-130			
Xylene (p/m)	0.193	0.0200	"				70-130			
Xylene (o)	0.103	0.0100	"				70-130			
Surrogate: 4-Bromofluorobenzene	0.0583		"	0.0600		97.2	75-125			
Surrogate: 1,4-Difluorobenzene	0.0605		"	0.0600		101	75-125			

American Safety Services, Inc

Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy

Project Number: [none]

Odessa TEXAS, 79765

Project Manager: Thomas Franklin

Organics by GC - Quality Control Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P8G1702 - General Preparation (GC)									-	
LCS Dup (P8G1702-BSD1)				Prepared: 0)7/17/18 A	nalyzed: 07	7/18/18			
Benzene	0.102	0.00100	mg/kg wet	0.100		102	70-130	6.40	20	
Toluene	0.105	0.0100	"	0.100		105	70-130	10.4	20	
Ethylbenzene	0.121	0.00500	"	0.100		121	70-130	9.54	20	
Xylene (p/m)	0.206	0.0200	"				70-130		20	
Xylene (o)	0.104	0.0100	"				70-130		20	
Surrogate: 1,4-Difluorobenzene	0.0627		"	0.0600		104	75-125			
Surrogate: 4-Bromofluorobenzene	0.0649		"	0.0600		108	75-125			
Matrix Spike (P8G1702-MS1)	Sou	rce: 8G12006	5-38	Prepared: 0	07/17/18 A	nalyzed: 07	7/19/18			
Benzene	0.0663	0.00102	mg/kg dry	0.102	ND	65.0	80-120			QM-0:
Toluene	0.0648	0.0102	"	0.102	ND	63.5	80-120			QM-0:
Ethylbenzene	0.0766	0.00510	"	0.102	ND	75.1	80-120			QM-0:
Xylene (p/m)	0.130	0.0204	"		ND		80-120			
Xylene (o)	0.0655	0.0102	"		ND		80-120			
Surrogate: 4-Bromofluorobenzene	0.0688		"	0.0612		112	75-125			
Surrogate: 1,4-Difluorobenzene	0.0671		"	0.0612		110	75-125			
Matrix Spike Dup (P8G1702-MSD1)	Sou	rce: 8G12006	5-38	Prepared: 0)7/17/18 A	nalyzed: 07	7/19/18			
Benzene	0.0915	0.00102	mg/kg dry	0.102	ND	89.7	80-120	31.9	20	QM-0:
Toluene	0.0847	0.0102	"	0.102	ND	83.0	80-120	26.6	20	QM-0:
Ethylbenzene	0.100	0.00510	"	0.102	ND	98.0	80-120	26.5	20	QM-0:
Xylene (p/m)	0.167	0.0204	"		ND		80-120		20	
Xylene (o)	0.0896	0.0102	"		ND		80-120		20	
Surrogate: 4-Bromofluorobenzene	0.0628		"	0.0612		103	75-125			
Surrogate: 1,4-Difluorobenzene	0.0642		"	0.0612		105	75-125			

Fax: (432) 363-0198

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P8G1604 - *** DEFAULT PREP ***										
Blank (P8G1604-BLK1)				Prepared &	Analyzed:	07/16/18				
% Moisture	ND	0.1	%							
Duplicate (P8G1604-DUP1)	Sou	ce: 8G12006-	13	Prepared &	Analyzed:	07/16/18				
% Moisture	3.0	0.1	%		3.0			0.00	20	
Duplicate (P8G1604-DUP2)	Sou	ce: 8G12006-	40	Prepared &	Analyzed:	07/16/18				
% Moisture	4.0	0.1	%		2.0			66.7	20	
Duplicate (P8G1604-DUP3)	Sou	ce: 8G13002-	13	Prepared &	: Analyzed:	07/16/18				
% Moisture	6.0	0.1	%		6.0			0.00	20	
Duplicate (P8G1604-DUP4)	Sou	ce: 8G13004-	04	Prepared &	Analyzed:	07/16/18				
% Moisture	3.0	0.1	%		3.0			0.00	20	
Duplicate (P8G1604-DUP5)	Sou	ce: 8G12022-	02	Prepared &	Analyzed:	07/16/18				
% Moisture	10.0	0.1	%		10.0			0.00	20	
Duplicate (P8G1604-DUP6)	Sou	ce: 8G12022-	08	Prepared &	Analyzed:	07/16/18				
% Moisture	14.0	0.1	%		13.0			7.41	20	
Duplicate (P8G1604-DUP7)	Sou	rce: 8G13001-	13	Prepared &	Analyzed:	07/16/18				
% Moisture	3.0	0.1	%		3.0			0.00	20	
Duplicate (P8G1604-DUP8)	Sou	ce: 8G12006-	40	Prepared &	: Analyzed:	07/16/18				
% Moisture	4.0	0.1	%		2.0			66.7	20	

8715 Andrews Hwy

Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab, L.P.

		D (g 7			0/BEG		DDD	
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
y	-100411	Ziiiit		20.01	100011	,,,,,,,	2			
Batch P8G1305 - General Preparation (GC)										
Blank (P8G1305-BLK1)				Prepared &	Analyzed:	07/13/18				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	95.8		"	100		95.8	70-130			
Surrogate: o-Terphenyl	55.4		"	50.0		111	70-130			
LCS (P8G1305-BS1)				Prepared &	: Analyzed:	07/13/18				
C6-C12	937	25.0	mg/kg wet	1000		93.7	75-125			
>C12-C28	1000	25.0	"	1000		100	75-125			
Surrogate: 1-Chlorooctane	118		"	100		118	70-130			
Surrogate: o-Terphenyl	51.2		"	50.0		102	70-130			
LCS Dup (P8G1305-BSD1)				Prepared &	: Analyzed:	07/13/18				
C6-C12	930	25.0	mg/kg wet	1000		93.0	75-125	0.769	20	
>C12-C28	985	25.0	"	1000		98.5	75-125	1.52	20	
Surrogate: 1-Chlorooctane	117		"	100		117	70-130			
Surrogate: o-Terphenyl	50.1		"	50.0		100	70-130			
Matrix Spike (P8G1305-MS1)	Sou	ırce: 8G1200	5-38	Prepared: (07/13/18 A:	nalyzed: 07	//14/18			
C6-C12	978	25.5	mg/kg dry	1020	10.1	94.9	75-125			
>C12-C28	1020	25.5	"	1020	ND	99.6	75-125			
Surrogate: 1-Chlorooctane	131		"	102		129	70-130			
Surrogate: o-Terphenyl	57.4		"	51.0		113	70-130			
Matrix Spike Dup (P8G1305-MSD1)	Sor	ırce: 8G1200	5-38	Prepared: (07/13/18 A	nalvzed: 07	//14/18			
C6-C12	1010	25.5	mg/kg dry	1020	10.1	98.4	75-125	3.65	20	
>C12-C28	1030	25.5	"	1020	ND	101	75-125	1.24	20	
Surrogate: 1-Chlorooctane	126		"	102		123	70-130			

8715 Andrews Hwy

Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab, L.P.

Batch P8G1306 - General Preparation (GC)			Reporting		Spike	Source		%REC		RPD	
Prepared Record	Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
ND	Batch P8G1306 - General Preparation (GC)										
ND 25.0 "	Blank (P8G1306-BLK1)				Prepared &	Analyzed:	07/13/18				
ND 25.0	C6-C12	ND	25.0	mg/kg wet							
Surrogate: I-Chlorooctane 109 " 100 109 70-130 109 70-130 109 70-130 109 70-130 109 70-130 109 70-130 109 70-130 109 70-130 109 70-130 109 70-130 109 70-130 109 70-130 109 70-125	>C12-C28	ND	25.0	"							
Surrogate: 0-Terphenyl 60,7 " 50,0 121 70-130 7	>C28-C35	ND	25.0	"							
No. Prepared & Analyzed: 07/13/18	Surrogate: 1-Chlorooctane	109		"	100		109	70-130			
C6-C12	Surrogate: o-Terphenyl	60.7		"	50.0		121	70-130			
Color Colo	LCS (P8G1306-BS1)				Prepared &	Analyzed:	07/13/18				
Surrogate: I-Chlorooctane 103	C6-C12	1020	25.0	mg/kg wet	1000		102	75-125			
Surrogate: o-Terphenyl So.1 " So.0 100 70-130	>C12-C28	1090	25.0	"	1000		109	75-125			
Column C	Surrogate: 1-Chlorooctane	103		"	100		103	70-130			
C6-C12	Surrogate: o-Terphenyl	50.1		"	50.0		100	70-130			
Surrogate: 1-Chlorooctane 100 25.0 " 1000 110 75-125 0.832 20	LCS Dup (P8G1306-BSD1)				Prepared &	Analyzed:	07/13/18				
Surrogate: 1-Chlorooctane 102 " 100 102 70-130 Surrogate: o-Terphenyl 50.0 " 50.0 99.9 70-130 Matrix Spike (P8G1306-MS1) Source: 8G12006-39 Prepared: 07/13/18 Analyzed: 07/14/18 C6-C12 1040 25.5 mg/kg dry 1020 22.7 100 75-125 Surrogate: 1-Chlorooctane 115 " 102 112 70-130 Surrogate: o-Terphenyl 57.5 " 51.0 113 70-130 Matrix Spike Dup (P8G1306-MSD1) Source: 8G12006-39 Prepared: 07/13/18 Analyzed: 07/14/18 C6-C12 1090 25.5 mg/kg dry 1020 22.7 105 75-125 4.97 20 C12-C28 1130 25.5 " 1020 13.9 109 75-125 4.92 20 Surrogate: 1-Chlorooctane 119 " 102 116 70-130 To a control of the control	C6-C12	1020	25.0	mg/kg wet	1000		102	75-125	0.495	20	
Source: 8G12006-39 Prepared: 07/13/18 Analyzed: 07/14/18	>C12-C28	1100	25.0	"	1000		110	75-125	0.832	20	
Matrix Spike (P8G1306-MS1) Source: 8G12006-39 Prepared: 07/13/18 Analyzed: 07/14/18 C6-C12 1040 25.5 mg/kg dry 1020 22.7 100 75-125 >C12-C28 1070 25.5 " 1020 13.9 104 75-125 Surrogate: I-Chlorooctane 115 " 102 112 70-130 Surrogate: o-Terphenyl 57.5 " 51.0 113 70-130 Matrix Spike Dup (P8G1306-MSD1) Source: 8G12006-39 Prepared: 07/13/18 Analyzed: 07/14/18 C6-C12 1090 25.5 mg/kg dry 1020 22.7 105 75-125 4.97 20 >C12-C28 1130 25.5 " 1020 13.9 109 75-125 4.92 20 Surrogate: I-Chlorooctane 119 " 102 116 70-130	Surrogate: 1-Chlorooctane	102		"	100		102	70-130			
C6-C12	Surrogate: o-Terphenyl	50.0		"	50.0		99.9	70-130			
Note	Matrix Spike (P8G1306-MS1)	Sou	rce: 8G12000	6-39	Prepared: (07/13/18 A	nalyzed: 07	/14/18			
Surrogate: I-Chlorooctane	C6-C12	1040	25.5	mg/kg dry	1020	22.7	100	75-125			
Matrix Spike Dup (P8G1306-MSD1) Source: 8G12006-39 Prepared: 07/13/18 Analyzed: 07/14/18 C6-C12 1090 25.5 mg/kg dry 1020 22.7 105 75-125 4.97 20 >C12-C28 1130 25.5 " 1020 13.9 109 75-125 4.92 20 Surrogate: 1-Chlorooctane 119 " 102 116 70-130	>C12-C28	1070	25.5	"	1020	13.9	104	75-125			
Matrix Spike Dup (P8G1306-MSD1) Source: 8G12006-39 Prepared: 07/13/18 Analyzed: 07/14/18 C6-C12 1090 25.5 mg/kg dry 1020 22.7 105 75-125 4.97 20 >C12-C28 1130 25.5 " 1020 13.9 109 75-125 4.92 20 Surrogate: 1-Chlorooctane 119 " 102 116 70-130	Surrogate: 1-Chlorooctane	115		"	102		112	70-130			
C6-C12 1090 25.5 mg/kg dry 1020 22.7 105 75-125 4.97 20 >C12-C28 1130 25.5 " 1020 13.9 109 75-125 4.92 20 Surrogate: 1-Chlorooctane 119 " 102 116 70-130	Surrogate: o-Terphenyl	57.5		"	51.0		113	70-130			
>C12-C28 1130 25.5 " 1020 13.9 109 75-125 4.92 20 Surrogate: I-Chlorooctane 119 " 102 116 70-130	Matrix Spike Dup (P8G1306-MSD1)	Sou	rce: 8G12000	6-39	Prepared: (07/13/18 A	nalyzed: 07	/14/18			
Surrogate: 1-Chlorooctane 119 " 102 116 70-130	C6-C12	1090	25.5	mg/kg dry	1020	22.7	105	75-125	4.97	20	
Surrogate. 1-Chioroccune 119 102 110 /0-130	>C12-C28	1130	25.5	"	1020	13.9	109	75-125	4.92	20	
Surrogate: o-Terphenyl 56.7 " 51.0 111 70-130	Surrogate: 1-Chlorooctane	119		"	102		116	70-130			
	Surrogate: o-Terphenyl	56.7		"	51.0		111	70-130			

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab, L.P.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
D 11 D0C2704 C 1D 2 (CC)										
Batch P8G2704 - General Preparation (GC)										
Blank (P8G2704-BLK1)				Prepared &	Analyzed:	07/27/18				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	89.0		"	100		89.0	70-130			
Surrogate: o-Terphenyl	44.7		"	50.0		89.5	70-130			
LCS (P8G2704-BS1)				Prepared &	: Analyzed:	07/27/18				
C6-C12	877	25.0	mg/kg wet	1000		87.7	75-125			
>C12-C28	944	25.0	"	1000		94.4	75-125			
Surrogate: 1-Chlorooctane	114		"	100		114	70-130			
Surrogate: o-Terphenyl	41.7		"	50.0		83.4	70-130			
LCS Dup (P8G2704-BSD1)				Prepared &	Analyzed:	07/27/18				
C6-C12	914	25.0	mg/kg wet	1000		91.4	75-125	4.15	20	
>C12-C28	961	25.0	"	1000		96.1	75-125	1.77	20	
Surrogate: 1-Chlorooctane	118		"	100		118	70-130			
Surrogate: o-Terphenyl	42.2		"	50.0		84.5	70-130			
Matrix Spike (P8G2704-MS1)	Sou	rce: 8G1200'	7-06	Prepared: 0)7/27/18 Aı	nalyzed: 07	/28/18			
C6-C12	1030	28.4	mg/kg dry	1140	23.8	88.7	75-125			
>C12-C28	1060	28.4	"	1140	15.4	92.2	75-125			
Surrogate: 1-Chlorooctane	133		"	114		117	70-130			
Surrogate: o-Terphenyl	50.4		"	56.8		88.7	70-130			
Maria C. H. D. (DOCOMOA MCD4)	Sou	rce: 8G1200	7-06	Prepared: 0)7/27/18 Aı	nalyzed: 07	/28/18			
Matrix Spike Dup (P8G2704-MSD1)		20.4	mg/kg dry	1140	23.8	86.4	75-125	2.67	20	
Matrix Spike Dup (P8G2/04-MSD1) C6-C12	1010	28.4	mg/kg ury	1110						
	1010 1060	28.4	mg/kg ury	1140	15.4	91.9	75-125	0.310	20	
C6-C12						91.9	75-125 70-130	0.310	20	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were

within acceptance limits showing that the laboratory is in control and the data is acceptable.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

	Drew	Darron			
Report Approved By:			Date:	7/31/2018	

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

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CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

City/State/Zip: Company Address: 8715 Andrews Hwy. Company Name Project Manager: American Safety Services Inc. Jay Latta Odessa, TX 79765 Permian Basin Environmental Lab, LP 10014 S. County Road 1213 Midland, Texas 79706 Project Name: Mack Energy-North Pole Fed TB Project Loc: Eddy Co. 200 Project #: PO#: Phone: 432-686-7235 Page 40 of 40

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PERMIAN BASIN ENVIRONMENTAL LAB, LP 1400 Rankin Hwy Midland, TX 79701



Analytical Report

Prepared for:

Thomas Franklin
American Safety Services, Inc
8715 Andrews Hwy
Odessa, TEXAS 79765

Project: Mack Energy - North Pole Fed TB

Project Number: [none]
Location: Eddy Co. NM

Lab Order Number: 8G13001



NELAP/TCEQ # T104704516-17-8

Report Date: 07/24/18

American Safety Services, Inc

Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy

Project Number: [none]

Odessa TEXAS, 79765

Project Manager: Thomas Franklin

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Auger Hole 1 (0.0'-0.5')	8G13001-01	Soil	07/09/18 12:30	07-12-2018 08:50
Auger Hole 1 (0.5'-1.0')	8G13001-02	Soil	07/09/18 12:32	07-12-2018 08:50
Auger Hole 2 (0.0'-0.5')	8G13001-05	Soil	07/09/18 12:41	07-12-2018 08:50
Auger Hole 3 (0.0'-0.5')	8G13001-11	Soil	07/09/18 12:59	07-12-2018 08:50
Auger Hole 4 (0.0'-0.5')	8G13001-15	Soil	07/09/18 13:07	07-12-2018 08:50
Auger Hole 5 (0.0'-0.5')	8G13001-17	Soil	07/09/18 13:14	07-12-2018 08:50
Auger Hole 6 (0.0'-0.5')	8G13001-19	Soil	07/09/18 13:21	07-12-2018 08:50
Auger Hole 7 (0.0'-0.5')	8G13001-21	Soil	07/09/18 13:28	07-12-2018 08:50
Auger Hole 8 (0.0'-0.5')	8G13001-23	Soil	07/09/18 13:35	07-12-2018 08:50
Auger Hole 9 (0.0'-0.5')	8G13001-25	Soil	07/09/18 13:42	07-12-2018 08:50
Auger Hole 10 (0.0'-0.5')	8G13001-27	Soil	07/09/18 13:49	07-12-2018 08:50
Auger Hole 11 (0.0'-0.5')	8G13001-29	Soil	07/09/18 13:56	07-12-2018 08:50
Auger Hole 12 (0.0'-0.5')	8G13001-31	Soil	07/09/18 14:03	07-12-2018 08:50
Auger Hole 13 (0.0'-0.5')	8G13001-33	Soil	07/09/18 09:50	07-12-2018 08:50
Auger Hole 14 (0.0'-0.5')	8G13001-34	Soil	07/09/18 09:55	07-12-2018 08:50
Auger Hole 15 (0.0'-0.5')	8G13001-35	Soil	07/09/18 10:00	07-12-2018 08:50
Auger Hole 16 (0.0'-0.5')	8G13001-36	Soil	07/09/18 10:05	07-12-2018 08:50
Auger Hole 17 (0.0'-0.5')	8G13001-37	Soil	07/09/18 10:10	07-12-2018 08:50
Auger Hole 18 (0.0'-0.5')	8G13001-38	Soil	07/09/18 10:15	07-12-2018 08:50
Auger Hole 19 (0.0'-0.5')	8G13001-39	Soil	07/09/18 10:20	07-12-2018 08:50
Auger Hole 20 (0.0'-0.5')	8G13001-40	Soil	07/09/18 10:25	07-12-2018 08:50

Fax: (432) 363-0198

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 1 (0.0'-0.5') 8G13001-01 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	295	1.06 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	6.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 1 (0.5'-1.0') 8G13001-02 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	161	1.06 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	6.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 2 (0.0'-0.5') 8G13001-05 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	190	1.05 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	5.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 3 (0.0'-0.5') 8G13001-11 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	3.53	1.02 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 4 (0.0'-0.5') 8G13001-15 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.03 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	3.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 5 (0.0'-0.5') 8G13001-17 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.03 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	3.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 6 (0.0'-0.5') 8G13001-19 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.03 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	3.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 7 (0.0'-0.5') 8G13001-21 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.03 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	3.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 8 (0.0'-0.5') 8G13001-23 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 9 (0.0'-0.5') 8G13001-25 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 10 (0.0'-0.5') 8G13001-27 (Soil)

		Reporting								
Analyte	Regult	Limit	Unite	Dilution	Ratch	Prepared	Analyzed	Method	Notes	

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 11 (0.0'-0.5') 8G13001-29 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 12 (0.0'-0.5') 8G13001-31 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 13 (0.0'-0.5') 8G13001-33 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.03 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	3.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 14 (0.0'-0.5') 8G13001-34 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 15 (0.0'-0.5') 8G13001-35 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.03 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	3.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 16 (0.0'-0.5') 8G13001-36 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 17 (0.0'-0.5') 8G13001-37 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	36.8	1.22 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	18.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 18 (0.0'-0.5') 8G13001-38 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 19 (0.0'-0.5') 8G13001-39 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 20 (0.0'-0.5') 8G13001-40 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

American Safety Services, Inc Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy

Odessa TEXAS, 79765 Project Manager: Thomas Franklin Fax: (432) 363-0198

Project Number: [none]

General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab, L.P.

		Reporting		Spike	Source	0/855	%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P8G1604 - *** DEFAULT PREP ***										
Blank (P8G1604-BLK1)				Prepared &	Analyzed:	07/16/18				
% Moisture	ND	0.1	%							
Duplicate (P8G1604-DUP1)	Sou	rce: 8G12006-	-13	Prepared &	Analyzed:	07/16/18				
% Moisture	3.0	0.1	%		3.0			0.00	20	
Duplicate (P8G1604-DUP2)	Sou	rce: 8G12006-	40	Prepared &	Analyzed:	07/16/18				
% Moisture	4.0	0.1	%		2.0			66.7	20	
Duplicate (P8G1604-DUP3)	Sou	rce: 8G13002-	-13	Prepared &	Analyzed:	07/16/18				
% Moisture	6.0	0.1	%		6.0			0.00	20	
Duplicate (P8G1604-DUP4)	Sou	rce: 8G13004-	-04	Prepared &	Analyzed:	07/16/18				
% Moisture	3.0	0.1	%		3.0			0.00	20	
Duplicate (P8G1604-DUP5)	Sou	rce: 8G12022-	-02	Prepared &	Analyzed:	07/16/18				
% Moisture	10.0	0.1	%		10.0			0.00	20	
Duplicate (P8G1604-DUP6)	Sou	rce: 8G12022-	-08	Prepared &	Analyzed:	07/16/18				
% Moisture	14.0	0.1	%		13.0			7.41	20	
Duplicate (P8G1604-DUP7)	Sou	rce: 8G13001-	-13	Prepared &	Analyzed:	07/16/18				
% Moisture	3.0	0.1	%		3.0			0.00	20	
Duplicate (P8G1604-DUP8)	Sou	rce: 8G12006-	-40	Prepared &	Analyzed:	07/16/18				
% Moisture	4.0	0.1	%		2.0			66.7	20	
Batch P8G1706 - *** DEFAULT PREP ***										
Blank (P8G1706-BLK1)				Prepared: 0	7/17/18 A	nalyzed: 07	/18/18			
Chloride	ND	1.00	mg/kg wet	i						

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab, L.P.

	•	Reporting		Spike	Source	•	%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P8G1706 - *** DEFAULT PREP ***										
LCS (P8G1706-BS1)				Prepared: (07/17/18 A	nalyzed: 07	7/18/18			
Chloride	378	1.00	mg/kg wet	400		94.6	80-120			
LCS Dup (P8G1706-BSD1)				Prepared: (07/17/18 A	nalyzed: 07	7/18/18			
Chloride	380	1.00	mg/kg wet	400		95.1	80-120	0.525	20	
Duplicate (P8G1706-DUP1)	Sou	rce: 8G12007	7-12	Prepared: (07/17/18 A	nalyzed: 07	7/18/18			
Chloride	ND	1.04	mg/kg dry		ND				20	
Duplicate (P8G1706-DUP2)	Sou	rce: 8G13001	1-08	Prepared: (07/17/18 A	nalyzed: 07	7/18/18			
Chloride	397	1.06	mg/kg dry		398			0.0963	20	
Matrix Spike (P8G1706-MS1)	Sou	rce: 8G12007	7-12	Prepared: (07/17/18 A	nalyzed: 07	7/18/18			
Chloride	1040	1.04	mg/kg dry	1040	ND	99.8	80-120			
Batch P8G1707 - *** DEFAULT PREP ***										
Blank (P8G1707-BLK1)				Prepared: (07/17/18 A	nalyzed: 07	7/18/18			
Chloride	ND	1.00	mg/kg wet							
LCS (P8G1707-BS1)				Prepared: (07/17/18 A	nalyzed: 07	7/18/18			
Chloride	396	1.00	mg/kg wet	400		99.0	80-120			
LCS Dup (P8G1707-BSD1)				Prepared: (07/17/18 A	nalyzed: 07	7/18/18			
Chloride	399	1.00	mg/kg wet	400		99.7	80-120	0.742	20	
Duplicate (P8G1707-DUP1)	Sou	rce: 8G13001	l -27	Prepared: (07/17/18 A	nalyzed: 07	7/18/18			
Chloride	ND	1.02	mg/kg dry		ND				20	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab, L.P.

	Re	porting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Duplicate (P8G1707-DUP2)	Source: 8	G13001-40	Prepared: 0	7/17/18 A	nalyzed: 07	/18/18	
Chloride	ND	1.02 mg/kg dry		ND			20
Matrix Spike (P8G1707-MS1)	Source: 8	G13001-27	Prepared: 0'	7/17/18 A	nalyzed: 07	/18/18	
Chloride	952	1.02 mg/kg dry	1020	ND	93.3	80-120	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Notes and Definitions

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

	Drew	Darron			
Report Approved By:			Date:	7/24/2018	

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

AND ANALYSIS REQUEST

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ORDER# (lab use only) Special Instructions: Relinquished by: Relinquished by: Relinquished by: Company Name Project Manager: Sampler Signature: Telephone No: City/State/Zip: Company Address: Auger Hole 10 Auger Hole 10 Auger Hole 11 Auger Hole 11 Auger Hole 9 Auger Hole 7 Auger Hole 9 Auger Hole 8 Auger Hole 7 Auger Hole 8 FIELD CODE 8715 Andrews Hwy. American Safety Services Inc. 432-557-9868/432-552-7625 Jay Latta Odessa, TX 79765 miller. CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST 7/12/18 Date Date 0220 0.0 0.5 0.0 0.5 0.0 0 0.0 <u>0</u>1 0 0.0 Beginning Depth me Time Ime 0.5 0.5 1.0' . 0 1.0' 0.5 1.Q <u>1</u>0 0.5 1. Q Ending Depth Received by Received by: Received by: 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 Date Sampled 1337 1356 1351 1349 1344 1342 1335 1330 1328 1358 Fax No: Time Sampled e-mail: ield Filtered Permian Basin Environmental Lab, LP z z Z Z z Z Z Z Z Z Midiand, Texas 79706 10014 S. County Road 1213 4 Total #. of Containers latta@americansafety.net zimmerman@americansafety.net. ndial@americansafety.net eich@americansafety.net されている × × × × × × tce × l× HNO₃ HCI H₂SO₄ NaOH Na₂S₂O₃ None Other (Specify) Date Date S-Grab S-Grab S-Grab S-Grab S-Grab S-Grab S-Grab S-Grab S-Grab S-Grab DW≃Drinking Water SL=Sludge Matrix Report Format: GW = Groundwater S=Soil/Solid Project Name: Mack Energy-North Pole Fed TB 2000 NP≕Non-Potable Specify Othe Project Loc: Eddy Co. Car E me ime TPH: 418.1 8015M 8015B Project #: TPH: TX 1005 TX 1006 PO #: by Sampler(Client Rep.?)
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Sample Hand Delivered VOCs Free of Headspace?
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Sample Containers Intact? Cations (Ca, Mg, Na, K) Anions (CI, SO4, Alkalinity) TOTAL ☐ Standard TCLP: SAR / ESP / CEC Phone: 432-686-7235 Metais: As Ag Ba Cd Cr Pb Hg Se Analyze Volatiles 11 Semivolatiles 8 °C Factor BTEX 8021B/5030 or BTEX 8260 TAP RCI N.O.R.M. 3/2/ × Chloride 300 × × O S × C Hold ZZ NPDES Lone Star RUSH TAT (Pre-Schedule) 24, 48, 72 hrs Standard TAT Page 30 of 31

AB # (lab use only)

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

| NaOH NaOH Na_2S_2O_3 None None Other (Specify) Other (| ### Midland, Texas 79706 Fax No: | Project Name | Project Name | Project Name | Project Name | Project Name | Project Name Proj | Fax No: | Fax No: | Fax No: | Frayed Hard Fray No. Fray N | Frayed Hard Fray No. Fray N | Project Name: Mack Energy-North Pole Fed TB Project Name: Mack Energy-North Pole Fed TB | Frage Foundation Foundati | Project Name: Mack Energy-North Pole Fed TB Project Name: Mack Energy-North Pole Fed TB | Relinquished by: Date Time R | Time | 6 0,550 | Date Time | Special Instructions: | - | | - 궁 Auger Hole 18 0.0' 0.5' | -37 Auger Hole 17 0.0' 0.5' | 5 | ! | Auger Hole 14 0.0* | Auger Hole 13 0.0' | | ろ Auger Hole 12 0.0' 0.5' | LAB # (lab use only) FIELD CODE Beginning Depth Ending Depth | | ORDER #: 8 (2) 10 10 10 10 10 10 10 10 10 10 10 10 10 | (lab use only) (300) | | Sampler Signature: March | Telephone No: 432-557-9868/432-552-7625 | City/State/Zip: Odessa, TX 79765 | Company Address: 8715 Andrews Hwy. | Company Name American Safety Services Inc. | Project Manager: Jay Latta | |

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PERMIAN BASIN ENVIRONMENTAL LAB, LP 1400 Rankin Hwy Midland, TX 79701



Revised Analytical Report

Prepared for:

Thomas Franklin
American Safety Services, Inc
8715 Andrews Hwy
Odessa, TEXAS 79765

Project: Mack Energy - North Pole Fed TB

Project Number: [none]

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Location: Eddy County, New Mexico

Lab Order Number: 8L05002



NELAP/TCEQ # T104704516-18-9

Report Date: 04/30/19

American Safety Services, Inc

Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy

Project Number: [none]

Odessa TEXAS, 79765

Project Manager: Thomas Franklin

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
South Sidewall @ Auger Hole-1	8L05002-01	Soil	12/04/18 13:00	12-05-2018 10:25
East Sidewall @ Auger Hole-1	8L05002-02	Soil	12/04/18 13:05	12-05-2018 10:25
West Sidewall @ Auger Hole-1	8L05002-03	Soil	12/04/18 13:10	12-05-2018 10:25
North Sidewall @ Auger Hole-2	8L05002-04	Soil	12/04/18 13:15	12-05-2018 10:25
East Sidewall @ Auger Hole-2	8L05002-05	Soil	12/04/18 13:20	12-05-2018 10:25
West Sidewall @ Auger Hole-2	8L05002-06	Soil	12/04/18 13:25	12-05-2018 10:25
Stockpile-1 @ Auger Hole-1	8L05002-07	Soil	12/04/18 13:30	12-05-2018 10:25
Stockpile-2 @ Auger Hole-1	8L05002-08	Soil	12/04/18 13:35	12-05-2018 10:25
Stockpile-3 @ Auger Hole-1	8L05002-09	Soil	12/04/18 13:40	12-05-2018 10:25
Stockpile-1 @ Auger Hole-2	8L05002-10	Soil	12/04/18 13:45	12-05-2018 10:25
Stockpile-2 @ Auger Hole-2	8L05002-11	Soil	12/04/18 13:50	12-05-2018 10:25
Stockpile-3 @ Auger Hole-2	8L05002-12	Soil	12/04/18 13:55	12-05-2018 10:25

Fax: (432) 363-0198

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

South Sidewall @ Auger Hole-1 8L05002-01 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perm	ian Basin E	nvironmer	ıtal Lab, l	L.P.				
General Chemistry Parameters by EPA /	Standard Method	S							
% Moisture	6.0	0.1	%	1	P8L0704	12/07/18	12/07/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 b	y EPA Method 80	15M							
C6-C12	ND	26.6	mg/kg dry	1	P8L0802	12/08/18	12/09/18	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P8L0802	12/08/18	12/09/18	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P8L0802	12/08/18	12/09/18	TPH 8015M	
Surrogate: 1-Chlorooctane		101 %	70-1	30	P8L0802	12/08/18	12/09/18	TPH 8015M	
Surrogate: o-Terphenyl		108 %	70-1	30	P8L0802	12/08/18	12/09/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	12/08/18	12/09/18	calc	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

ND

East Sidewall @ Auger Hole-1 8L05002-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Permi	an Basin E	Environment	al Lab, l	L.P.				
General Chemistry Parameters by	EPA / Standard Methods	3							
% Moisture	3.0	0.1	%	1	P8L0704	12/07/18	12/07/18	ASTM D2216	
Total Petroleum Hydrocarbons C6	6-C35 by EPA Method 801	15M							
C6-C12	ND	25.8	mg/kg dry	1	P8L0802	12/08/18	12/09/18	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P8L0802	12/08/18	12/09/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8L0802	12/08/18	12/09/18	TPH 8015M	
Surrogate: 1-Chlorooctane		99.8 %	70-13	0	P8L0802	12/08/18	12/09/18	TPH 8015M	
Surrogate: o-Terphenyl		106 %	70-13	0	P8L0802	12/08/18	12/09/18	TPH 8015M	

25.8 mg/kg dry

[CALC]

12/08/18

12/09/18

calc

Total Petroleum Hydrocarbon C6-C35

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

ND

ND

West Sidewall @ Auger Hole-1 8L05002-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Permi	an Basin E	nvironme	ntal Lab, I	P.				
General Chemistry Parameter	rs by EPA / Standard Methods	1							
% Moisture	8.0	0.1	%	1	P8L0704	12/07/18	12/07/18	ASTM D2216	
Total Petroleum Hydrocarbon	as C6-C35 by EPA Method 801	15M							
C6-C12	ND	27.2	mg/kg dry	1	P8L0802	12/08/18	12/09/18	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P8L0802	12/08/18	12/09/18	TPH 8015M	

27.2 mg/kg dry

27.2 mg/kg dry

70-130

70-130

95.2 %

103 %

P8L0802

P8L0802

P8L0802

[CALC]

12/08/18

12/08/18

12/08/18

12/08/18

12/09/18

12/09/18

12/09/18

12/09/18

TPH 8015M

TPH 8015M

TPH 8015M

calc

>C28-C35

Surrogate: 1-Chlorooctane

Total Petroleum Hydrocarbon C6-C35

Surrogate: o-Terphenyl

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

ND

North Sidewall @ Auger Hole-2 8L05002-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Permi	an Basin E	nvironment	al Lab, l	L .P.				
General Chemistry Parameters by	EPA / Standard Methods								
% Moisture	6.0	0.1	%	1	P8L0704	12/07/18	12/07/18	ASTM D2216	
Total Petroleum Hydrocarbons C6	5-C35 by EPA Method 801	5M							
C6-C12	ND	26.6	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	
Surrogate: 1-Chlorooctane		95.6 %	70-13	0	P8L0803	12/08/18	12/08/18	TPH 8015M	
Surrogate: o-Terphenyl		99.6 %	70-13	0	P8L0803	12/08/18	12/08/18	TPH 8015M	

26.6 mg/kg dry

[CALC]

12/08/18

12/08/18

calc

Total Petroleum Hydrocarbon C6-C35

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

ND

ND

ND

East Sidewall @ Auger Hole-2 8L05002-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Consul Charitan Donor Assa ka ED		n Basin E	nvironmen	ıtal Lab, I	L.P.				
General Chemistry Parameters by EPA Moisture	4.0	0.1	%	1	P8L0704	12/07/18	12/07/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C3:	5 by EPA Method 8015	M							
C6-C12	ND	26.0	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	

 $26.0 \,\,$ mg/kg dry

26.0 mg/kg dry

mg/kg dry

70-130

70-130

26.0

93.8 %

98.5 %

P8L0803

P8L0803

P8L0803

P8L0803

[CALC]

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

TPH 8015M

TPH 8015M

TPH 8015M

TPH 8015M

calc

>C12-C28

>C28-C35

Surrogate: 1-Chlorooctane

Total Petroleum Hydrocarbon C6-C35

Surrogate: o-Terphenyl

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

West Sidewall @ Auger Hole-2 8L05002-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Permia	an Basin En	vironm	ental Lab, I	л.Р.				
General Chemistry Parameters by EPA / S	Standard Methods								
% Moisture	5.0	0.1	%	1	P8L0704	12/07/18	12/07/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by E	EPA Method 80	15M							
C6-C12	ND	26.3	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	
Surrogate: 1-Chlorooctane		94.4 %	70-130		P8L0803	12/08/18	12/08/18	TPH 8015M	
Surrogate: o-Terphenyl		98.5 %	70-130		P8L0803	12/08/18	12/08/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	12/08/18	12/08/18	calc	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Stockpile-1 @ Auger Hole-1 8L05002-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Tillingto	resur	Limit	Cints	Dilution	Butch	Trepureu	rinaryzea	Method	110103
	Permi	an Basin E	Environme	ntal Lab, l	L.P.				
General Chemistry Parameters by	EPA / Standard Methods	3							
% Moisture	5.0	0.1	%	1	P8L0704	12/07/18	12/07/18	ASTM D2216	
Total Petroleum Hydrocarbons C6	5-C35 by EPA Method 80	15M							
C6-C12	ND	26.3	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	
Surrogate: 1-Chlorooctane		83.3 %	70-	130	P8L0803	12/08/18	12/08/18	TPH 8015M	

70-130

P8L0803

[CALC]

12/08/18

12/08/18

12/08/18

12/08/18

TPH~8015M

calc

85.7%

26.3 mg/kg dry

ND

Surrogate: o-Terphenyl

Total Petroleum Hydrocarbon C6-C35

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

ND

ND

ND

ND

Stockpile-2 @ Auger Hole-1 8L05002-08 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			vironm	ental Lab, I	Р.				
General Chemistry Parameters by I			0/	1	DOI 0704	10/07/10	12/07/10	A STM D2216	
% Moisture	5.0	0.1	%	1	P8L0704	12/07/18	12/07/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-	C35 by EPA Method 801	5M							

 $26.3 \quad \text{mg/kg dry} \\$

26.3 mg/kg dry

26.3 mg/kg dry

26.3 mg/kg dry

70-130

70-130

102 %

105 %

P8L0803

P8L0803

P8L0803

P8L0803

P8L0803

[CALC]

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

TPH 8015M

TPH 8015M

TPH 8015M

TPH 8015M

TPH 8015M

calc

C6-C12

>C12-C28

>C28-C35

Surrogate: 1-Chlorooctane

Total Petroleum Hydrocarbon C6-C35

Surrogate: o-Terphenyl

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

31.0

ND

31.0

Stockpile-3 @ Auger Hole-1 8L05002-09 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		n Basin E	nvironmer	ıtal Lab, I	P.				
General Chemistry Parameters by EPA		0.1	0/		DOI 0704	10.05/10	40.00.00	A STM D2216	
% Moisture	6.0	0.1	%	1	P8L0704	12/07/18	12/07/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	5 by EPA Method 801:	5M							
C6-C12	ND	26.6	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	

26.6 mg/kg dry

26.6 mg/kg dry

 $26.6 \quad \text{mg/kg dry}$

70-130

70-130

93.5 %

100 %

P8L0803

P8L0803

P8L0803

P8L0803

[CALC]

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

12/08/18

TPH 8015M

TPH 8015M

TPH 8015M

TPH 8015M

calc

Total Petroleum Hydrocarbon C6-C35

>C12-C28

>C28-C35

Surrogate: 1-Chlorooctane

Surrogate: o-Terphenyl

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Stockpile-1 @ Auger Hole-2 8L05002-10 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Permian	Basin Er	nvironme	ental Lab, I	P.				
General Chemistry Parameters I	by EPA / Standard Methods								
% Moisture	5.0	0.1	%	1	P8L0704	12/07/18	12/07/18	ASTM D2216	

% Moisture	5.0	0.1	%	1	P8L0704	12/07/18	12/07/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EP	A Method 8	015M							
C6-C12	ND	26.3	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	
Surrogate: 1-Chlorooctane		93.9 %	70-130		P8L0803	12/08/18	12/08/18	TPH 8015M	
Surrogate: o-Terphenyl		101 %	70-130		P8L0803	12/08/18	12/08/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	12/08/18	12/08/18	calc	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Stockpile-2 @ Auger Hole-2 8L05002-11 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Permia	an Basin En	vironm	ental Lab, I	P.				
General Chemistry Parameters by EPA / S	tandard Methods								
% Moisture	2.0	0.1	%	1	P8L0704	12/07/18	12/07/18	ASTM D2216	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

120

Stockpile-3 @ Auger Hole-2 8L05002-12 (Soil)

			(-,					
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perm	ian Basin F	Environme	ıtal Lab, l	L.P.				
General Chemistry Parameters by	EPA / Standard Methods	5							
% Moisture	6.0	0.1	%	1	P8L0704	12/07/18	12/07/18	ASTM D2216	
Total Petroleum Hydrocarbons C6	5-C35 by EPA Method 80	15M							
C6-C12	ND	26.6	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	
>C12-C28	86.9	26.6	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	
>C28-C35	33.5	26.6	mg/kg dry	1	P8L0803	12/08/18	12/08/18	TPH 8015M	
Surrogate: 1-Chlorooctane		69.6 %	70-1	30	P8L0803	12/08/18	12/08/18	TPH 8015M	S-09
Surrogate: o-Terphenyl		73.9 %	70-1	30	P8L0803	12/08/18	12/08/18	TPH 8015M	

26.6 mg/kg dry

[CALC]

12/08/18

12/08/18

calc

Total Petroleum Hydrocarbon

C6-C35

American Safety Services, Inc Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab, L.P.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P8L0704 - *** DEFAULT PREP ***										
Blank (P8L0704-BLK1)				Prepared &	Analyzed	12/07/18				
% Moisture	ND	0.1	%							
Duplicate (P8L0704-DUP1)	Sour	ce: 8L04028-	25	Prepared &	Analyzed	12/07/18				
% Moisture	16.0	0.1	%		16.0			0.00	20	
Duplicate (P8L0704-DUP2)	Sour	ce: 8L04029-	17	Prepared &	Analyzed	12/07/18				
% Moisture	9.0	0.1	%		9.0			0.00	20	
Duplicate (P8L0704-DUP3)	Sour	ce: 8L06001-	02	Prepared &	Analyzed	12/07/18				
% Moisture	8.0	0.1	%		8.0			0.00	20	
Duplicate (P8L0704-DUP4)	Sour	ce: 8L06006-	05	Prepared &	Analyzed	12/07/18				
% Moisture	5.0	0.1	%		5.0			0.00	20	

Fax: (432) 363-0198

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P8L0802 - TX 1005	Result	Limit	Cinto	Levei	Rosuit	, under	Lillito	шъ	Limit	110103
Blank (P8L0802-BLK1)				Prepared &	À Analyzed:	12/08/18				
C6-C12	ND	25.0	mg/kg wet	1 repared e	e / maryzea.	. 12/00/10				
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	93.9		"	100		93.9	70-130			
Surrogate: o-Terphenyl	49.7		"	50.0		99.3	70-130			
LCS (P8L0802-BS1)				Prepared &	& Analyzed	12/08/18				
C6-C12	933	25.0	mg/kg wet	1000		93.3	75-125			
>C12-C28	934	25.0	"	1000		93.4	75-125			
Surrogate: 1-Chlorooctane	113		"	100		113	70-130			
Surrogate: o-Terphenyl	52.7		"	50.0		105	70-130			
LCS Dup (P8L0802-BSD1)				Prepared &	& Analyzed:	12/08/18				
C6-C12	754	25.0	mg/kg wet	1000		75.4	75-125	21.2	20	R2
>C12-C28	939	25.0	"	1000		93.9	75-125	0.527	20	
Surrogate: 1-Chlorooctane	114		"	100		114	70-130			
Surrogate: o-Terphenyl	52.1		"	50.0		104	70-130			
Matrix Spike (P8L0802-MS1)	Sou	rce: 8L05002	-03	Prepared:	12/08/18 A	nalyzed: 12	2/09/18			
C6-C12	832	27.2	mg/kg dry	1090	20.7	74.6	75-125			QM-07
>C12-C28	1110	27.2	"	1090	ND	102	75-125			
Surrogate: 1-Chlorooctane	132		"	109		122	70-130			
Surrogate: o-Terphenyl	60.3		"	54.3		111	70-130			
Batch P8L0803 - TX 1005										
Blank (P8L0803-BLK1)				Prepared &	k Analyzed	12/08/18				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	106		"	100		106	70-130			
Surrogate: o-Terphenyl	54.5		"	50.0		109	70-130			

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab, L.P.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P8L0803 - TX 1005										
LCS (P8L0803-BS1)				Prepared &	ኔ Analyzed:	12/08/18				
C6-C12	898	25.0	mg/kg wet	1000		89.8	75-125			
>C12-C28	1070	25.0	"	1000		107	75-125			
Surrogate: 1-Chlorooctane	113		"	100		113	70-130			
Surrogate: o-Terphenyl	51.4		"	50.0		103	70-130			
LCS Dup (P8L0803-BSD1)				Prepared &	ኔ Analyzed:	12/08/18				
C6-C12	887	25.0	mg/kg wet	1000		88.7	75-125	1.21	20	
>C12-C28	1050	25.0	"	1000		105	75-125	2.07	20	
Surrogate: 1-Chlorooctane	111		"	100		111	70-130			
Surrogate: o-Terphenyl	50.7		"	50.0		101	70-130			
Matrix Spike (P8L0803-MS1)	Sou	rce: 8L05002	2-04	Prepared:	12/08/18 A	nalyzed: 12	2/09/18			
C6-C12	948	26.6	mg/kg dry	1060	ND	89.1	75-125			
>C12-C28	1100	26.6	"	1060	10.3	103	75-125			
Surrogate: 1-Chlorooctane	117		"	106		110	70-130			
Surrogate: o-Terphenyl	53.0		"	53.2		99.7	70-130			
Matrix Spike Dup (P8L0803-MSD1)	Sou	rce: 8L05002	2-04	Prepared:	12/08/18 A	nalyzed: 12	2/09/18			
C6-C12	956	26.6	mg/kg dry	1060	ND	89.9	75-125	0.843	20	
>C12-C28	1130	26.6	"	1060	10.3	105	75-125	1.87	20	
Surrogate: 1-Chlorooctane	121		"	106		114	70-130			
Surrogate: o-Terphenyl	53.9		"	53.2		101	70-130			

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Notes and Definitions

S-09 Surrogate recovery limits have been exceeded.

R2 The RPD exceeded the acceptance limit.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS

recovery.

BULK Samples received in Bulk soil containers

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:

Kun Burron
K T NAM
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Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

4/30/2019

Date:

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

(lab usé only)	(lab use only) ORDER #: \(\S\) () \(\S(\))	Sampler Signature: DP	Telephone No:	City/State/Zip:	Company Address: 8715 Andrews Hwy.	Company Name	Project Manager:	
	902	: DP	432-557-9868/432-557-7963	Odessa, TX 79765	8715 Andrews Hwy.	American Safety Services Inc.	Thomas Franklin	SAFETY 8715 Andrews Hwy SERVICES Odessa, TX 79768
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Report Format:

Standard

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NPDES

Standard TAT

Project Loc: Eddy Co.

Z

P0#:

Project #:

Special Instructions: Relinquished by: Relinquished by: Relinquished by: South Sidewall @ Auger Hole - 2 West Sidewall @ Auger Hole - 1 North Sidewall @ Auger Hole -West Sidewall @ Auger Hole - 2 East Sidewall @ Auger Hole - 2 East Sidewall @ Auger Hole - 1 Stockpile - 1 @ Auger Hole - 1 Stockpile - 1 @ Auger Hole - 2 Stockpile - 3 @ Auger Hole - 1 Stockpile - 2 @ Auger Hole - 1 FIELD CODE *Invoice to Matt Buckles* 1250 Date Date Date Begin Ous me me Time Endin Received by PBEI Received by: Received by: 12/4/2018 12/4/2018 12/4/2018 12/4/2018 12/4/2018 12/4/2018 12/4/2018 12/4/2018 12/4/2018 2/4/2018 Date Sampled 1310 1345 1340 1335 1305 1330 1325 1315 1300 1320 Time Sampled e-mail: Z Z Z Z Field Filtered Z Z z z Z _ <u>...</u> Total #. of Containers dpayne@americansafety.net tranklin@americansafety.net immerman@americansafety.net × × × × × × × × HNQ₃ HCI H₂SO₄ NaOH Na₂S₂O₃ None Other (Specify) Date Date S-Comp S-Comp S-Comp S-Grab S-Grab S-Grab S-Grab S-Grab S-Grab S-Comp DW=Drinking Water SL=Sludge Se.nl Time 8015M> TPH: 418.1 8015B TX 1005 TPH: TX 1006 by Sampler/Client Rep. ?
by Courier? UPS DI
Temperature Upon Receipt.
Received: 3 7 °C
Adjusted: 47 7 °C Fac Sample Hand Delivered Sample Containers Intact? Labels on container(s)
Custody seals on container(s)
Custody seals on conteiner(s) VOCs Free of Headspace? Cations (Ca, Mg, Na, K) _aboratory Comments: Anions (Cl, SO4, Alkalinity) TOTAL TCLP: SAR / ESP / CEC Metals: As Ag Ba Cd Cr Pb Hg Se Analyze For: Volatiles Semivotatiles ိုင် CFactor BTEX 8021B/5030 or BTEX 8260 RCI N.O.R.M. Chloride 2 Lone Star ZZ z RUSH TAT (Pre-Schedulo) 24, 48, 72 hrs

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Phone: 432-552-7625

Project Name: Mack Energy - North Pole Fed

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Page 20 of 21

INC Odessa, TX 79768	SAFETY 8715 Andrews Hwy
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PERMIAN BASIN ENVIRONMENTAL LAB, LP 1400 Rankin Hwy Midland, TX 79701



Analytical Report

Prepared for:

Josh Talley
American Safety Services, Inc
8715 Andrews Hwy
Odessa, TEXAS 79765

Project: Mack Energy - North Pole Fed TB

Project Number: [none]

Location: Eddy County, New Mexico

Lab Order Number: 9B15008



NELAP/TCEQ # T104704516-18-9

Report Date: 02/21/19

American Safety Services, Inc

Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy Odessa TEXAS, 79765 Project Number: [none]
Project Manager: Josh Talley

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Stockpile 3 @ Auger Hole 2	9B15008-01	Soil	02/14/19 13:30	02-15-2019 12:00

Fax: (432) 363-0198

8715 Andrews Hwy Project Number: [none]
Odessa TEXAS, 79765 Project Manager: Josh Talley

Stockpile 3 @ Auger Hole 2 9B15008-01 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Permi	an Basin E	Environmen	tal Lab, l	L.P.				
General Chemistry Parameters by EPA	A / Standard Methods	i							
% Moisture	6.0	0.1	%	1	P9B1912	02/19/19	02/19/19	ASTM D2216	
Total Petroleum Hydrocarbons C6-C3	5 by EPA Method 801	15M							
C6-C12	ND	26.6	mg/kg dry	1	P9B1803	02/15/19	02/17/19	TPH 8015M	
>C12-C28	105	26.6	mg/kg dry	1	P9B1803	02/15/19	02/17/19	TPH 8015M	
>C28-C35	30.3	26.6	mg/kg dry	1	P9B1803	02/15/19	02/17/19	TPH 8015M	
Surrogate: 1-Chlorooctane		120 %	70-1.	30	P9B1803	02/15/19	02/17/19	TPH 8015M	
Surrogate: o-Terphenyl		134 %	70-1.	30	P9B1803	02/15/19	02/17/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	136	26.6	mg/kg dry	1	[CALC]	02/15/19	02/17/19	cale	

8715 Andrews Hwy Project Number: [none]
Odessa TEXAS, 79765 Project Manager: Josh Talley

General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab, L.P.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P9B1912 - *** DEFAULT PREP ***										
Blank (P9B1912-BLK1)				Prepared &	k Analyzed	: 02/19/19				
% Moisture	ND	0.1	%							
Duplicate (P9B1912-DUP1)	Sour	ce: 9B15001-	06	Prepared &	t Analyzed:	: 02/19/19				
% Moisture	8.0	0.1	%		9.0			11.8	20	

American Safety Services, Inc

Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy
Odessa TEXAS, 79765
Project Manage

Fax: (432) 363-0198

Project Number: [none]
Project Manager: Josh Talley

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab, L.P.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P9B1803 - TX 1005										
Blank (P9B1803-BLK1)				Prepared: (02/15/19 A	nalyzed: 02	/17/19			
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	96.5		"	100		96.5	70-130			
Surrogate: o-Terphenyl	52.3		"	50.0		105	70-130			
LCS (P9B1803-BS1)				Prepared: (02/15/19 A	nalyzed: 02	/16/19			
C6-C12	1140	25.0	mg/kg wet	1000		114	75-125			
>C12-C28	1170	25.0	"	1000		117	75-125			
Surrogate: 1-Chlorooctane	122		"	100		122	70-130			
Surrogate: o-Terphenyl	64.5		"	50.0		129	70-130			
LCS Dup (P9B1803-BSD1)				Prepared: (02/15/19 A	nalyzed: 02	/16/19			
C6-C12	940	25.0	mg/kg wet	1000		94.0	75-125	19.4	20	
>C12-C28	965	25.0	"	1000		96.5	75-125	19.3	20	
Surrogate: 1-Chlorooctane	110		"	100		110	70-130			
Surrogate: o-Terphenyl	53.5		"	50.0		107	70-130			
Duplicate (P9B1803-DUP1)	Sou	rce: 9B15008	3-01	Prepared: (02/15/19 A	nalyzed: 02	/17/19			
C6-C12	ND	26.6	mg/kg dry		11.1				20	
>C12-C28	27.2	26.6	"		105			118	20	
Surrogate: 1-Chlorooctane	133		"	106		125	70-130			
Surrogate: o-Terphenyl	75.5		"	53.2		142	70-130			S-G

8715 Andrews Hwy Project Number: [none]
Odessa TEXAS, 79765 Project Manager: Josh Talley

Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

	Burnon		
Report Approved By:		Date:	2/21/2019

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

Project Manager:

Josh Talley/Ryan Reich

Company Name

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

10014 S. County Road 1213 Permian Basin Environmental Lab, LP

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Page 7 of 7

Midland, Texas 79706 Phone: 432-686-7235

Josh Lalleyiryan Reich		Project Name: Mack Energy- North Pole Fed TB	North Pole Fe	d TB
American Safety Services Inc.	٠.	Project #:		
8715 Andrews Hwy.		Project Loc: Eddy Co. TX		
Odessa, TX 79765		PO#:		÷
432-557-9868/432-552-7625	Fax No:	Report Format: Standard	TRRP	
.0				

ORDER#:

AB # (lab use only)

Beginning Depth

Stockpile 3 @ Auger Hole 2 FIELD CODE (lab use only)

Telephone No:

City/State/Zip:

Company Address: 8715 Andrews Hwy.

Sampler Signature:

mich

Ending Depth 2/14/2019 Date Sampled 1330 Time Sampled e-mail: Field Filtered Z Total # of Containers zimmerman@americansafety.net tfranklin@americansafety.net Ice Preservation & # of Containers HNO₃ **HCI** H₂SO₄ NaOH Na₂S₂O₃ None Other (Specify) S-Comp DW=Drinking Water St=Sludge Matrix NP=Non-Potable Specify Other TPH: 418.1 80150 8015B TPH: TX 1005 TX 1006 Sample Containers Intact? aboratory Comments: Cations (Ca, Mg, Na, K) Anions (Cl, SO4, Alkalinity) TOTAL 덛 SAR / ESP / CEC Metals: As Ag Ba Cd Cr Pb Hg Se Analyze Volatiles Semivolatiles 9 BTEX 8021B/5030 or BTEX 8260 RCI N.O.R.M. Chloride Hold Z RUSH TAT (Pre-Schedule) 24, 48, 72 hrs Standard TAT

Relinquished by:

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12:60

Time

12-15-18

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Adjusted:

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Date

Temperature Upon Receipt:

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ZZZ

by Sampler/Client Rep. ?

2/14/19

18:00 ime

Custody seals on cooler(s)
Custody seals on cooler(s)
Sample Hand Delivered

Labels on container(s)

zz

VOCs Free of Headspace?

Time

Received by:

11/1/19

18:00

Time

Received by

Special Instructions:



SUMMARY REPORT

1400 Rankin Hwy Midland, Tx 79701 Phone: 432-686-7235

Page 1 of 1

8715 Andrews Hwy											
			Project Number:								
Odessa TEXAS, 79765			Project Manager:	Josh Talley							
SAMPLED: 02/14/19 RECEIVED: 02-15-201			REPORTED:	02/21/19 13:2	1						
LAB #		9B15008-01	-	-	-	-	-				
MATRIX	Minimum	Soil	-	-	-	-	-				
SAMPLE ID	eporting Limit	Stockpile 3 @ Auger Hole 2	-	_	-	-	-				
General Chemistry Parameters by E	PA / Standard M	ethods (Soil)									
% Moisture	0.1 %	6.0	-	-	-	-	-				
Total Petroleum Hydrocarbons C6-C	35 by EPA Meth	od 8015M (Soil)									
C6-C12	25.0 mg/kg dry	<26.6	-	-	-	-	-				
Total Petroleum Hydrocarbon C6-C35	26.6 mg/kg dry	136	-	-	-	-	-				
>C12-C28	25.0 mg/kg dry	105	-	-	-	-	-				
>C28-C35	25.0 mg/kg dry	30.3	-	-	-	-	-				
1-Chlorooctane	130 [surr]	120%	-	-	-	-	-				
o-Terphenyl	130 [surr]	134% [1]	-	-	-	-	-				

Special Notes

1 = Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

Permian Basin Environmental Lab, L.P.

Sara Gotcher For Brent Barron

Technical Director

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

PERMIAN BASIN ENVIRONMENTAL LAB, LP 1400 Rankin Hwy Midland, TX 79701



Analytical Report

Prepared for:

Thomas Franklin
American Safety Services, Inc
8715 Andrews Hwy
Odessa, TEXAS 79765

Project: Mack Energy - North Pole Fed TB

Project Number: [none]
Location: Eddy County, NM

Lab Order Number: 9D02012



NELAP/TCEQ # T104704516-18-9

Report Date: 04/09/19

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Stockpile 3 @ Auger Hole 2	9D02012-01	Soil	04/02/19 11:30	04-02-2019 16:30

Upon sending the final report PBELAB Staff was informed that this sample was clean dirt and the client did not expect any detections. Upon further review of the data, it was found that the sample preceding this sample had results greater than 20000 ppm for TPH. The samples after this sample were also high. This sample was reanalyzed and the resulting data was indeed non-detect. I have issued a Non-Conformance Corrective action (SY040519b01) to investigate the root cause, and will be retraining the analyst on data review and manual integration. This revised report reflects the correct results.

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Stockpile 3 @ Auger Hole 2 9D02012-01RE1 (Soil)

Austra	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Analyte	Result	Limit	Units	Dilution	Datcii	riepaieu	Allaryzeu	Method	Notes
	Perm	ian Basin E	Environmen	tal Lab, l	L .P.				
Total Petroleum Hydrocarbons C6-C35 by	y EPA Method 80	15M							
C6-C12	ND	25.0	mg/kg dry	1	P9D0304	04/03/19	04/05/19	TPH 8015M	
>C12-C28	ND	25.0	mg/kg dry	1	P9D0304	04/03/19	04/05/19	TPH 8015M	
>C28-C35	ND	25.0	mg/kg dry	1	P9D0304	04/03/19	04/05/19	TPH 8015M	
Surrogate: 1-Chlorooctane		155 %	70-13	80	P9D0304	04/03/19	04/05/19	TPH 8015M	S-HII
Surrogate: o-Terphenyl		158 %	70-13	80	P9D0304	04/03/19	04/05/19	TPH 8015M	S-HII
Total Petroleum Hydrocarbon C6-C35	ND	25.0	mg/kg dry	1	[CALC]	04/03/19	04/05/19	calc	

8715 Andrews Hwy

Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab, L.P.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P9D0304 - TX 1005										
Blank (P9D0304-BLK1)				Prepared: (04/03/19 Aı	nalyzed: 04	-/04/19			
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	94.5		"	100		94.5	70-130			
Surrogate: o-Terphenyl	52.9		"	50.0		106	70-130			
LCS (P9D0304-BS1)				Prepared: (04/03/19 Aı	nalyzed: 04	-/04/19			
C6-C12	808	25.0	mg/kg wet	1000		80.8	75-125			
>C12-C28	1110	25.0	"	1000		111	75-125			
Surrogate: 1-Chlorooctane	110		"	100		110	70-130			
Surrogate: o-Terphenyl	47.4		"	50.0		94.8	70-130			
LCS Dup (P9D0304-BSD1)				Prepared: (04/03/19 Aı	nalyzed: 04	-/04/19			
C6-C12	848	25.0	mg/kg wet	1000		84.8	75-125	4.91	20	
>C12-C28	1130	25.0	"	1000		113	75-125	1.77	20	
Surrogate: 1-Chlorooctane	113		"	100		113	70-130			
Surrogate: o-Terphenyl	48.7		"	50.0		97.3	70-130			
Calibration Blank (P9D0304-CCB1)				Prepared: (04/03/19 Aı	nalyzed: 04	-/04/19			
C6-C12	5.79		mg/kg wet							
>C12-C28	22.1		"							
Surrogate: 1-Chlorooctane	95.2		"	100		95.2	70-130			
Surrogate: o-Terphenyl	53.1		"	50.0		106	70-130			
Calibration Blank (P9D0304-CCB2)				Prepared: (04/03/19 Aı	nalyzed: 04	-/04/19			
C6-C12	6.26		mg/kg wet							
>C12-C28	15.4		"							
Surrogate: 1-Chlorooctane	95.1		"	100		95.1	70-130			
Surrogate: o-Terphenyl	52.8		"	50.0		106	70-130			

8715 Andrews Hwy

Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Analyte	Result	Lillit	Units	LEVEI	Result	/OKEC	Lillits	KFD	LIIIII	notes
Batch P9D0304 - TX 1005										
Calibration Check (P9D0304-CCV1)				Prepared: (04/03/19 A	nalyzed: 04	-/04/19			
C6-C12	470	25.0	mg/kg wet	500		93.9	85-115			
>C12-C28	561	25.0	"	500		112	85-115			
Surrogate: 1-Chlorooctane	108		"	100		108	70-130			
Surrogate: o-Terphenyl	50.4		"	50.0		101	70-130			
Calibration Check (P9D0304-CCV2)				Prepared: (04/03/19 A	nalyzed: 04	/04/19			
C6-C12	465	25.0	mg/kg wet	500		93.0	85-115			
>C12-C28	437	25.0	"	500		87.4	85-115			
Surrogate: 1-Chlorooctane	104		"	100		104	70-130			
Surrogate: o-Terphenyl	49.6		"	50.0		99.2	70-130			
Calibration Check (P9D0304-CCV3)				Prepared: (04/03/19 A	nalyzed: 04	/04/19			
C6-C12	476	25.0	mg/kg wet	500		95.2	85-115			
>C12-C28	559	25.0	"	500		112	85-115			
Surrogate: 1-Chlorooctane	111		"	100		111	70-130			
Surrogate: o-Terphenyl	53.6		"	50.0		107	70-130			
Duplicate (P9D0304-DUP1)	Sou	rce: 9D03002	2-03	Prepared: (04/03/19 A	nalyzed: 04	/04/19			
C6-C12	13.1	27.8	mg/kg dry		15.3			15.0	20	
>C12-C28	46.8	27.8	"		84.0			56.8	20	
Surrogate: 1-Chlorooctane	129		"	111		116	70-130			
Surrogate: o-Terphenyl	72.0		"	55.6		130	70-130			

American Safety Services, Inc Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Notes and Definitions

S-HII Both Surrogate recoveries were above the acceptance limits, however, the sample the sample was non-detect for the compounds of

interest.

ROI Received on Ice

BULK Samples received in Bulk soil containers

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

	Drew	Davior C			
Report Approved By:			Date:	4/9/2019	

Brent Barron, Laboratory Director/Technical Director

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If you have received this material in error, please notify us immediately at 432-686-7235.

Fax: (432) 363-0198

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APPENDIX E

C-141

NM OIL CONSERVATION

ARTESIA DISTRICT

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

MAR 28 2018

Form C-141 Revised April 3, 2017

Submit 1 Copy to appropriate District Office in **RECEIVED** redance with 19.15.29 NMAC.

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

		r ()	Rele	ase Notific	ation	and Co	rrective A	ction				
nable	3 0 435	5413				OPERA	TOR	1	☐ Initia	ıl Report	П	Final Report
Name of Co			Corporat	ion 1383	71	Contact Ma	tt Buckles					•
		gton Highwa					lo. 575-748-128	38				
Facility Nan	ne Nort	h Pole Fed T	В		F	Facility Typ	e Tank Battery					
Surface Own	ner BLM			Mineral O	wner E	BLM			API No	. 30-015-	36079	
				LOCA	TION	OF REI	FASE	_				
Unit Letter	Section	Township	Range			South Line	Feet from the	East/W	est Line	County		
M	15	16S	28E	330		South	330		/est	Eddy		
10.00,000								_				
		La	titude:	32.916374	L	ongitude_	104.17129	05_ N	AD83			
				NAT	URE	OF RELI	EASE					
Type of Relea							Release 25 bbls			ecovered		3
Source of Rel	lease Heat	er Treater				Date and H 3/21/2018	lour of Occurrenc	e	Date and 3/21/2018	Hour of Di	scovery	
Was Immedia	te Notice (Given?		• •		If YES, To			3/21/2010	7.00 am		
		\boxtimes	Yes	No Not Rec	quired	Mike Brate	ther and Shelly Tu	ucker				
By Whom? M							lour 3/21/18 7:42					
Was a Watero	course Read		Yes 🗵	No		If YES, Vo	lume Impacting t	he Wate	rcourse.			
If a Watercou	rce was Im											
ii u watereou	ise was iii	pacied, Descr.	ioc i uny.									
Describe Cau	se of Probl	em and Reme	dial Action	Taken.*								
A gasket on an 8' x 20' heater treater developed a leak on the top side of the clean out plate. Immediately upon discovery we dug out and hauled any saturated oily dirt to an approved disposal site to prevent further leaching.												
saturated only	dirt to an a	ipproved dispo	osal site to	prevent further le	aching.							
Dagariha Ana	a A GGo at a 1	1 Cl	A -4' T-1									
Describe Area The area affect				en." Pole TB. The oil f	ollowed	l a path of 24	0 vards northeast	less than	ı 1 vard wi	de and an a	irea nort	hwest of the
heater treater	65 yards by	y 35 yards. Tl		orthwest was cause								
and discuss re	emediation	plans.										
				is true and compl								
				nd/or file certain re se of a C-141 repo								
should their c	perations l	nave failed to a	adequately	investigate and re	mediate	e contaminati	on that pose a thr	eat to gr	ound water	, surface w	ater, hu	man health
should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.												
rederar, state,	or local la	ws and/or regu	mations.		1		OIL CON	SERV	ATION	DIVISION	ON	
									7	el	<u> </u>	
Signature: Ma	att Buckles						Signed			DATE COL	#10	
Printed Name	: Matt Buc	kles		_	4	Approved by	Environmental S	pecialist	:			
Title: Enviro	nmental					Approval Da	te: 4/2/18	1	Expiration	Date: K	IIA	
THE EHVIRO	micital								apiration	Date.	<u> </u>	
E-mail Addre	ess: mattbu	ckles@mec.co	om	_	(Conditions o	f Approval:	11		Attache	d₄□	11.50
Date: 3/	28/2017		Ph	one: 575-748-1288	8		Bee at	tuci	<i>rea</i>		ZRP	.4485

District I 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

			Res	ponsil	ble Part	ty		
Responsible	Party Mack	Energy Corporat	ion 13837	1	OGRID			
Contact Nam	ne Matt Bu	ckles		1	Contact Te	lephone 575-7	48-1288	
Contact emai	il mattbucl	kles@mec.com			Incident #	NAB18093559	913	
Contact mail	ing address	11344 Lovington	n Highway	•				
			Location	n of R	elease S	Source		
Latitude 32.	<u>916374</u>		(NAD 83 in d		Longitude grees to 5 deci	-104.171295 imal places)		
Site Name	North Pole	Fed TB			Site Type	Tank Battery		
Date Release	e Discovered	d 3/21/2018			API# 30	0-015-36079		
Unit Letter	Section	Township	Range		Count	ty		
M	15	16S	28E	Eddy				
Surface Owner: State Federal Tribal Private (Name:)								
			Nature an	d Vol	ume of	Release		
	Mater			ch calculati	ons or specific		volumes provided below)	
Crude Oil		Volume Release				Volume Recov	,	
Produced	Water	Volume Release	, ,			Volume Recov		
		Is the concentrate produced water	ion of dissolved c >10,000 mg/l?	hloride i	n the	Yes No		
Condensa	ite	Volume Release				Volume Recov	ered (bbls)	
Natural G	as	Volume Release	d (Mcf)			Volume Recov	ered (Mcf)	
Other (de	scribe)	Volume/Weight	Released (provide	e units)		Volume/Weigh	nt Recovered (provide units)	
Cause of Rele A gasket on a		neater treater deve	loped a leak on the	e top side	e of the clea	an out plate. Imi	mediately upon discovery we dug out	

and hauled any saturated oily dirt to an approved disposal site to prevent further leaching.

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?	If YES, for what reason(s) does the responsible party consider this a major release? 25 bbl release
⊠ Yes □ No	
	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? like Bratcher and Shelly Tucker on 3/21/2018 @ 7:42 pm. Email
	Initial Response
The responsible	e party must undertake the following actions immediately unless they could create a safety hazard that would result in injury
☐ The source of the rele	ease has been stopped.
☐ The impacted area ha	s been secured to protect human health and the environment.
Released materials ha	ave been contained via the use of berms or dikes, absorbent pads, or other containment devices.
All free liquids and re	ecoverable materials have been removed and managed appropriately.
If all the actions described	d above have <u>not</u> been undertaken, explain why:
has begun, please attach a	IAC the responsible party may commence remediation immediately after discovery of a release. If remediation a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred at area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
regulations all operators are public health or the environment failed to adequately investigation	rmation given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and required to report and/or file certain release notifications and perform corrective actions for releases which may endanger ment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have atte and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In f a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws
Printed Name:	Matt Buckles Title:Project Manager
Signature:Matt	Buckles Date:10/15/2018
email:mattbuckles	@ mec.com Telephone:575-748-1288
OCD Only	
Received by:	Date:

State of New Mexico Oil Conservation Division

What is the shallowest depth to groundwater beneath the area affected by the release?

Did this release impact groundwater or surface water?

☐ Laboratory data including chain of custody

Incident ID	
District RP	
Facility ID	
Application ID	

24' (ft bgs)

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ⊠ No				
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ⊠ No				
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?					
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?					
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ⊠ No				
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ⊠ No				
Are the lateral extents of the release within 300 feet of a wetland?					
Are the lateral extents of the release overlying a subsurface mine?					
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ⊠ No				
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ⊠ No				
Did the release impact areas not on an exploration, development, production, or storage site?	⊠ Yes □ No				
Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.					
Characterization Report Checklist: Each of the following items must be included in the report.					
 Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells. Field data Data table of soil contaminant concentration data Depth to water determination 					
 Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release Boring or excavation logs Photographs including date and GIS information Topographic/Aerial maps 					

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.					
Printed Name:Matt BucklesTitle: _	Project Manager				
Signature:Matt Buckles	Date:10/15/2018				
email:mattbuckles@mec.com					
OCD Only					
Received by:	Date:				

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: Each of the following items must be included in the plan.					
 Detailed description of proposed remediation technique Scaled sitemap with GPS coordinates showing delineation points Estimated volume of material to be remediated Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required) 					
<u>Deferral Requests Only</u> : Each of the following items must be confirmed as part of any request for deferral of remediation.					
Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.					
Extents of contamination must be fully delineated.					
Contamination does not cause an imminent risk to human health, the environment, or groundwater.					
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. Printed Name:Matt Buckles Title:Project Manager					
Signature:Matt Buckles Date:10/15/2018					
email:mattbuckles@mec.com Telephone:575-748-1288					
OCD Only					
Received by: Date:					
☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved					
Signature: Date:					

State of New Mexico Oil Conservation Division

Closure Report Attachment Checklist: Each of the following items must be included in the closure report.

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

☐ A scaled site and sampling diagram as described in 19.15.29.11 NMAC				
Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)				
☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)				
☐ Description of remediation activities				
I hereby certify that the information given above is true and complete to the and regulations all operators are required to report and/or file certain release may endanger public health or the environment. The acceptance of a C-141 should their operations have failed to adequately investigate and remediate of human health or the environment. In addition, OCD acceptance of a C-141 compliance with any other federal, state, or local laws and/or regulations. To restore, reclaim, and re-vegetate the impacted surface area to the conditions accordance with 19.15.29.13 NMAC including notification to the OCD wheelength of the Name:Matt Buckles	enotifications and perform corrective actions for releases which report by the OCD does not relieve the operator of liability contamination that pose a threat to groundwater, surface water, report does not relieve the operator of responsibility for the responsible party acknowledges they must substantially that existed prior to the release or their final land use in the reclamation and re-vegetation are complete. Project Manager			
OCD Only				
Received by:	Date:			
Closure approval by the OCD does not relieve the responsible party of lial and remediate contamination that poses a threat to groundwater, surface responsible party of compliance with any other federal, state, or local laws a	water, human health, or the environment nor does not relieve the			
Closure Approved by:	Date:			
Printed Name:	Title:			



APPENDIX F

Groundwater Data



USGS Home Contact USGS Search USGS

GO

National Water Information System: Web Interface

USGS Water Resources	Data Category:	Geographic Area:
obdo water neboarees	Groundwater	▼ United States

Click to hideNews Bulletins

- Please see news on new formats
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

• 325448104071801

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

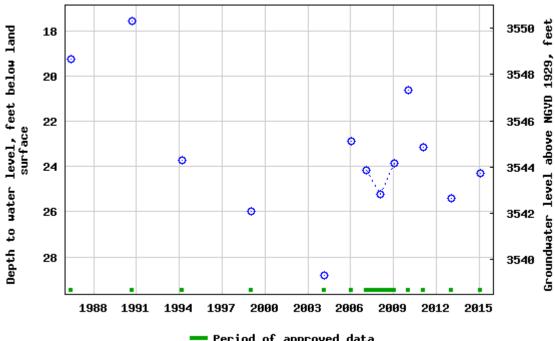
USGS 325448104071801 16S.28E.24.22423A

Available data for this site	Groundwater:	Field measurements	▼	GO		
Eddy County, New Mexico						
Hydrologic Unit Code 1306	0011					
Latitude 32°54'48", Longi	tude 104°0	7'18" NAD27				
Land-surface elevation 3,5	68 feet abo	ve NGVD29				
This well is completed in th	າe Alluvium	, Bolson Deposits	and	d Othei	⁻ Surface	Deposits
(110AVMB) local aquifer.						

Output formats

Table of data	
<u>Tab-separated data</u>	
Graph of data	
Reselect period	

USGS 325448104071801 16S.28E.24.22423A



- Period of approved data

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 <u>Help</u> **Data Tips Explanation of terms** Subscribe for system changes **News**

Accessibility Plug-Ins **FOIA** Privacy Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey

Title: Groundwater for USA: Water Levels

URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: <u>USGS Water Data Support Team</u>

Page Last Modified: 2018-07-12 10:09:47 EDT

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