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



Analytical Report

Prepared for:

Johnny Titsworth
Burnett Oil Company, Inc.
24 Smith Road Suite 100
Midland, TX 79705

Project: Gissler 'A' 43
Project Number: [none]
Location: Loco Hills ,NM

Lab Order Number: 6I13004



NELAP/TCEQ # T104704156-16-6

Report Date: 09/20/16

Burnett Oil Company, Inc.

Project: Gissler 'A' 43

24 Smith Road Suite 100

Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SP1 (0-1.0)	6I13004-01	Soil	09/13/16 00:00	09-13-2016 11:15
SP1 (1-1.5)	6I13004-02	Soil	09/13/16 00:00	09-13-2016 11:15
SP1 (2-2.5)	6I13004-03	Soil	09/13/16 00:00	09-13-2016 11:15
SP1 (3-3.5)	6I13004-04	Soil	09/13/16 00:00	09-13-2016 11:15
SP1 (4-4.5)	6I13004-05	Soil	09/13/16 00:00	09-13-2016 11:15
SP2 (0-1.0)	6I13004-07	Soil	09/13/16 00:00	09-13-2016 11:15
SP2 (1-1.5)	6I13004-08	Soil	09/13/16 00:00	09-13-2016 11:15
SP3 (0-1.0)	6I13004-12	Soil	09/13/16 00:00	09-13-2016 11:15
SP3 (1-1.5)	6I13004-13	Soil	09/13/16 00:00	09-13-2016 11:15
SP4 (0-1.0)	6I13004-16	Soil	09/13/16 00:00	09-13-2016 11:15
SP5 (0-1.0)	6I13004-20	Soil	09/13/16 00:00	09-13-2016 11:15
SP5 (1-1.5)	6I13004-21	Soil	09/13/16 00:00	09-13-2016 11:15
SP6 (0-1.0)	6I13004-25	Soil	09/13/16 00:00	09-13-2016 11:15
SP7 (0-1.0)	6I13004-29	Soil	09/13/16 00:00	09-13-2016 11:15
SP7 (1-1.5)	6I13004-30	Soil	09/13/16 00:00	09-13-2016 11:15
SP7 (2-2.5)	6I13004-31	Soil	09/13/16 00:00	09-13-2016 11:15
SP7 (3-3.5)	6I13004-32	Soil	09/13/16 00:00	09-13-2016 11:15
SP8 (0-1.0)	6I13004-35	Soil	09/13/16 00:00	09-13-2016 11:15
SP8 (1-1.5)	6I13004-36	Soil	09/13/16 00:00	09-13-2016 11:15

Fax:

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

SP1 (0-1.0) 6I13004-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	Environme	ıtal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.0227	mg/kg dry	20	P6I1901	09/17/16	09/18/16	EPA 8021B	
Toluene	0.242	0.0455	mg/kg dry	20	P6I1901	09/17/16	09/18/16	EPA 8021B	
Ethylbenzene	0.248	0.0227	mg/kg dry	20	P6I1901	09/17/16	09/18/16	EPA 8021B	
Xylene (p/m)	1.52	0.0455	mg/kg dry	20	P6I1901	09/17/16	09/18/16	EPA 8021B	
Xylene (o)	1.46	0.0227	mg/kg dry	20	P6I1901	09/17/16	09/18/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		82.7 %	75-1	25	P6I1901	09/17/16	09/18/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		76.7 %	75-1	25	P6I1901	09/17/16	09/18/16	EPA 8021B	
General Chemistry Parameters by EPA	/ Standard Method	ls							
% Moisture	12.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 80	15M							
C6-C12	1960	284	mg/kg dry	10	P6I1507	09/13/16	09/15/16	TPH 8015M	
>C12-C28	10400	284	mg/kg dry	10	P6I1507	09/13/16	09/15/16	TPH 8015M	
>C28-C35	1750	284	mg/kg dry	10	P6I1507	09/13/16	09/15/16	TPH 8015M	
Surrogate: 1-Chlorooctane		125 %	70-1	30	P6I1507	09/13/16	09/15/16	TPH 8015M	
Surrogate: o-Terphenyl		115 %	70-1	30	P6I1507	09/13/16	09/15/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	14200	284	mg/kg dry	10	[CALC]	09/13/16	09/15/16	calc	

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

2150

5150

SP1 (1-1.5) 6I13004-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes	
Permian Basin Environmental Lab, L.P.										
General Chemistry Parameters b	y EPA / Standard Methods									
% Moisture	17.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation		
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M										

151 mg/kg dry

151 mg/kg dry

5

5

P6I1507

P6I1507

09/13/16

09/13/16

09/15/16

09/15/16

TPH 8015M

TPH 8015M

mg/kg dry P6I1507 TPH 8015M >C28-C35 809 151 09/13/16 09/15/16 $Surrogate: \ 1\hbox{-}Chlorooctane$ 111 % 70-130 P6I150709/13/16 09/15/16 TPH 8015M Surrogate: o-Terphenyl 97.8 % 70-130 P6I1507 09/13/16 09/15/16 TPH 8015M

Total Petroleum Hydrocarbon 8120 151 mg/kg dry 5 [CALC] 09/13/16 09/15/16 calc **C6-C35**

C6-C12

>C12-C28

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

SP1 (2-2.5) 6I13004-03 (Soil)

	D 1	Reporting	TT 1.	D11 - 1	D . 1	ъ .		36.4.1	N
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods									
% Moisture	17.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation	
Total Petroleum Hydrocarbons C6-C3	35 by EPA Method 801	5M							
C6-C12	3530	151	mg/kg dry	5	P6I1507	09/13/16	09/15/16	TPH 8015M	
>C12-C28	8220	151	mg/kg dry	5	P6I1507	09/13/16	09/15/16	TPH 8015M	
>C28-C35	1270	151	mg/kg dry	5	P6I1507	09/13/16	09/15/16	TPH 8015M	
Surrogate: 1-Chlorooctane		120 %	70-130		P6I1507	09/13/16	09/15/16	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-130		P6I1507	09/13/16	09/15/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	13000	151	mg/kg dry	5	[CALC]	09/13/16	09/15/16	calc	

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

SP1 (3-3.5) 6I13004-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes	
Permian Basin Environmental Lab, L.P.										
Canaral Chamistry Daramators by EDA / Standard Mothads										

General Chemistry Parameters by EPA / Standard Methods												
% Moisture	17.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation				
Total Petroleum Hydrocarbons C6-C35 by EP	Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M											
C6-C12	1170	151	mg/kg dry	5	P6I1507	09/13/16	09/15/16	TPH 8015M				
>C12-C28	3910	151	mg/kg dry	5	P6I1507	09/13/16	09/15/16	TPH 8015M				
>C28-C35	628	151	mg/kg dry	5	P6I1507	09/13/16	09/15/16	TPH 8015M				
Surrogate: 1-Chlorooctane		118 %	70-130)	P6I1507	09/13/16	09/15/16	TPH 8015M				
Surrogate: o-Terphenyl		119 %	70-130)	P6I1507	09/13/16	09/15/16	TPH 8015M				
Total Petroleum Hydrocarbon	5710	151	mg/kg dry	5	[CALC]	09/13/16	09/15/16	calc				

C6-C35

Fax: Burnett Oil Company, Inc. Project: Gissler 'A' 43

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

SP1 (4-4.5) 6I13004-05 (Soil)

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

eneral Chemistr	y Parameters by	EPA / Standard Methods	

General Chemistry Parameters by EPA / Standard Methods											
% Moisture	13.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation			
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M											
C6-C12	ND	28.7	mg/kg dry	1	P6I1507	09/13/16	09/15/16	TPH 8015M			
>C12-C28	81.6	28.7	mg/kg dry	1	P6I1507	09/13/16	09/15/16	TPH 8015M			
>C28-C35	ND	28.7	mg/kg dry	1	P6I1507	09/13/16	09/15/16	TPH 8015M			
Surrogate: 1-Chlorooctane		125 %	70-130		P6I1507	09/13/16	09/15/16	TPH 8015M			
Surrogate: o-Terphenyl		121 %	70-130		P6I1507	09/13/16	09/15/16	TPH 8015M			
Total Petroleum Hydrocarbon C6-C35	81.6	28.7	mg/kg dry	1	[CALC]	09/13/16	09/15/16	calc			

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

14700

2000

21400

SP2 (0-1.0) 6I13004-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes	
Permian Basin Environmental Lab, L.P.										
General Chemistry Parameters by	y EPA / Standard Methods									
% Moisture	8.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation		
Total Petroleum Hydrocarbons Co	6-C35 by EPA Method 8015M	М								
C6-C12	4690	272	mg/kg dry	10	P6I1508	09/14/16	09/14/16	TPH 8015M		

272 mg/kg dry

272 mg/kg dry

272

110 %

93.4 %

mg/kg dry

70-130

70-130

P6I1508

P6I1508

P6I1508

P6I1508

[CALC]

09/14/16

09/14/16

09/14/16

09/14/16

09/14/16

09/14/16

09/14/16

09/14/16

09/14/16

09/14/16

10

10

10

TPH 8015M

TPH 8015M

TPH 8015M

TPH 8015M

calc

Total Petroleum Hydrocarbon C6-C35

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

Surrogate: o-Terphenyl

>C12-C28

>C28-C35

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

SP2 (1-1.5) 6I13004-08 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA	A / Standard Method	s						
% Moisture	3.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation
Total Petroleum Hydrocarbons C6-C3 :	5 by EPA Method 801	15M						
C6-C12	63.0	25.8	mg/kg dry	1	P6I1508	09/14/16	09/14/16	TPH 8015M
>C12-C28	257	25.8	mg/kg dry	1	P6I1508	09/14/16	09/14/16	TPH 8015M
>C28-C35	43.5	25.8	mg/kg dry	1	P6I1508	09/14/16	09/14/16	TPH 8015M
Surrogate: 1-Chlorooctane		83.3 %	70-130		P6I1508	09/14/16	09/14/16	TPH 8015M
Surrogate: o-Terphenyl		89.9 %	70-130		P6I1508	09/14/16	09/14/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	363	25.8	mg/kg dry	1	[CALC]	09/14/16	09/14/16	calc

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

SP3 (0-1.0) 6I13004-12 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pern	nian Basin E	Environmen	ıtal Lab, I	L .P.				
Organics by GC									
Benzene	ND	0.00109	mg/kg dry	1	P6I1901	09/17/16	09/18/16	EPA 8021B	
Toluene	ND	0.00217	mg/kg dry	1	P6I1901	09/17/16	09/18/16	EPA 8021B	
Ethylbenzene	ND	0.00109	mg/kg dry	1	P6I1901	09/17/16	09/18/16	EPA 8021B	
Xylene (p/m)	0.00265	0.00217	mg/kg dry	1	P6I1901	09/17/16	09/18/16	EPA 8021B	
Xylene (o)	0.00229	0.00109	mg/kg dry	1	P6I1901	09/17/16	09/18/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		103 %	75-1	25	P6I1901	09/17/16	09/18/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		77.3 %	75-1	25	P6I1901	09/17/16	09/18/16	EPA 8021B	
General Chemistry Parameters by EI	PA / Standard Method	ls							
% Moisture	8.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation	
Total Petroleum Hydrocarbons C6-C3	35 by EPA Method 80	15M							
C6-C12	996	136	mg/kg dry	5	P6I1508	09/14/16	09/14/16	TPH 8015M	
>C12-C28	7210	136	mg/kg dry	5	P6I1508	09/14/16	09/14/16	TPH 8015M	
>C28-C35	845	136	mg/kg dry	5	P6I1508	09/14/16	09/14/16	TPH 8015M	
Surrogate: 1-Chlorooctane		93.7 %	70-1	30	P6I1508	09/14/16	09/14/16	TPH 8015M	
Surrogate: o-Terphenyl		95.4 %	70-1	30	P6I1508	09/14/16	09/14/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	9050	136	mg/kg dry	5	[CALC]	09/14/16	09/14/16	calc	

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

SP3 (1-1.5) 6I13004-13 (Soil)

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

Permian Basin Environmental Lab, L.P.

% Moisture	2.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation
Total Petroleum Hydrocarbons C6-C35	by EPA Method 80	15M						
C6-C12	118	25.5	mg/kg dry	1	P6I1508	09/14/16	09/14/16	TPH 8015M
>C12-C28	239	25.5	mg/kg dry	1	P6I1508	09/14/16	09/14/16	TPH 8015M
>C28-C35	41.1	25.5	mg/kg dry	1	P6I1508	09/14/16	09/14/16	TPH 8015M
Surrogate: 1-Chlorooctane		88.9 %	70-130		P6I1508	09/14/16	09/14/16	TPH 8015M
Surrogate: o-Terphenyl		94.7 %	70-130		P6I1508	09/14/16	09/14/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	398	25.5	mg/kg dry	1	[CALC]	09/14/16	09/14/16	calc

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

SP4 (0-1.0) 6I13004-16 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA/S	tandard Methods	S						
% Moisture	13.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation
Total Petroleum Hydrocarbons C6-C35 by	EPA Method 801	15M						
C6-C12	ND	28.7	mg/kg dry	1	P6I1508	09/14/16	09/14/16	TPH 8015M
>C12-C28	ND	28.7	mg/kg dry	1	P6I1508	09/14/16	09/14/16	TPH 8015M
>C28-C35	ND	28.7	mg/kg dry	1	P6I1508	09/14/16	09/14/16	TPH 8015M
Surrogate: 1-Chlorooctane		86.8 %	70-130		P6I1508	09/14/16	09/14/16	TPH 8015M
Surrogate: o-Terphenyl		96.6 %	70-130		P6I1508	09/14/16	09/14/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	28.7	mg/kg dry	1	[CALC]	09/14/16	09/14/16	calc

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

SP5 (0-1.0) 6I13004-20 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pern	nian Basin E	Environme	ıtal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.0215	mg/kg dry	20	P6I1901	09/17/16	09/18/16	EPA 8021B	
Toluene	0.0447	0.0430	mg/kg dry	20	P6I1901	09/17/16	09/18/16	EPA 8021B	
Ethylbenzene	1.47	0.0215	mg/kg dry	20	P6I1901	09/17/16	09/18/16	EPA 8021B	
Xylene (p/m)	2.54	0.0430	mg/kg dry	20	P6I1901	09/17/16	09/18/16	EPA 8021B	
Xylene (o)	1.13	0.0215	mg/kg dry	20	P6I1901	09/17/16	09/18/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		116 %	75-1	25	P6I1901	09/17/16	09/18/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		120 %	75-1	25	P6I1901	09/17/16	09/18/16	EPA 8021B	
General Chemistry Parameters by EP	A / Standard Method	ls							
% Moisture	7.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation	
Total Petroleum Hydrocarbons C6-C3	5 by EPA Method 80	15M							
C6-C12	1980	269	mg/kg dry	10	P6I1508	09/14/16	09/14/16	TPH 8015M	
>C12-C28	6950	269	mg/kg dry	10	P6I1508	09/14/16	09/14/16	TPH 8015M	
>C28-C35	841	269	mg/kg dry	10	P6I1508	09/14/16	09/14/16	TPH 8015M	
Surrogate: 1-Chlorooctane		101 %	70-1	30	P6I1508	09/14/16	09/14/16	TPH 8015M	
Surrogate: o-Terphenyl		86.0 %	70-1	30	P6I1508	09/14/16	09/14/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	9770	269	mg/kg dry	10	[CALC]	09/14/16	09/14/16	calc	

Fax: Burnett Oil Company, Inc. Project: Gissler 'A' 43

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

SP5 (1-1.5) 6I13004-21 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Permia	n Basin E	nvironmei	ıtal Lab, I	L.P.				
General Chemistry Parameters by	EPA / Standard Methods								
% Moisture	7.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation	
Total Petroleum Hydrocarbons Co	5-C35 by EPA Method 8015	М							
C6-C12	ND	26.9	mg/kg dry	1	P6I1508	09/14/16	09/14/16	TPH 8015M	

70-130

P6I1508

[CALC]

09/14/16

09/14/16

09/14/16

09/14/16

>C12-C28

90.0 26.9 mg/kg dry P6I1508 TPH 8015M 09/14/16 09/14/16 P6I1508 TPH 8015M mg/kg dry >C28-C35 ND 26.9 09/14/16 09/14/16 TPH 8015M Surrogate: 1-Chlorooctane 86.2 % 70-130 P6I150809/14/16 09/14/16

97.7 %

Total Petroleum Hydrocarbon 90.0 $26.9 \quad mg/kg \; dry$

C6-C35

Surrogate: o-Terphenyl

TPH 8015M

calc

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

SP6 (0-1.0) 6I13004-25 (Soil)

		D .:							
A 1.	D 1	Reporting	TT 1	D'L C	D . 1	D 1		3.6.4.1	NT.
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Permi	an Basin F	Environmen	tal Lab, l	L.P.				
General Chemistry Parameters by E	EPA / Standard Methods								
% Moisture	9.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation	
Total Petroleum Hydrocarbons C6-C	C35 by EPA Method 801	5M							
C6-C12	150	27.5	mg/kg dry	1	P6I1508	09/14/16	09/15/16	TPH 8015M	
>C12-C28	818	27.5	mg/kg dry	1	P6I1508	09/14/16	09/15/16	TPH 8015M	
>C28-C35	87.9	27.5	mg/kg dry	1	P6I1508	09/14/16	09/15/16	TPH 8015M	
Surrogate: 1-Chlorooctane		94.6 %	70-13	80	P6I1508	09/14/16	09/15/16	TPH 8015M	

70-130

P6I1508

[CALC]

09/14/16

09/14/16

09/15/16

09/15/16

TPH 8015M

calc

104 %

27.5 mg/kg dry

1060

Surrogate: o-Terphenyl

C6-C35

Total Petroleum Hydrocarbon

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

SP7 (0-1.0) 6I13004-29 (Soil)

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

General Chemistry Parameters by EP	A / Standard Methods	S							
% Moisture	13.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation	
Total Petroleum Hydrocarbons C6-C3	5 by EPA Method 801	15M							
C6-C12	1860	144	mg/kg dry	5	P6I1510	09/14/16	09/15/16	TPH 8015M	
>C12-C28	5120	144	mg/kg dry	5	P6I1510	09/14/16	09/15/16	TPH 8015M	
>C28-C35	644	144	mg/kg dry	5	P6I1510	09/14/16	09/15/16	TPH 8015M	
Surrogate: 1-Chlorooctane		85.6 %	70-130		P6I1510	09/14/16	09/15/16	TPH 8015M	
Surrogate: o-Terphenyl		88.4 %	70-130		P6I1510	09/14/16	09/15/16	TPH 8015M	
Total Petroleum Hydrocarbon	7620	144	mg/kg dry	5	[CALC]	09/14/16	09/15/16	calc	

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

SP7 (1-1.5) 6I13004-30 (Soil)

		Reporting							
Analyte	Result	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								
% Moisture	15.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 801	5M							
C6-C12	1930	147	mg/kg dry	5	P6I1510	09/14/16	09/15/16	TPH 8015M	
>C12-C28	4150	147	mg/kg dry	5	P6I1510	09/14/16	09/15/16	TPH 8015M	
>C28-C35	609	147	mg/kg dry	5	P6I1510	09/14/16	09/15/16	TPH 8015M	
Surrogate: 1-Chlorooctane		91.4 %	70-1	30	P6I1510	09/14/16	09/15/16	TPH 8015M	
Surrogate: o-Terphenyl		92.7 %	70-1	30	P6I1510	09/14/16	09/15/16	TPH 8015M	
Total Petroleum Hydrocarbon	6680	147	mg/kg dry	5	[CALC]	09/14/16	09/15/16	calc	

C6-C35

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

3240

SP7 (2-2.5) 6I13004-31 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perm	ian Basin I	Environment	al Lab,	L.P.				
General Chemistry Parameters by	EPA / Standard Methods	3							
% Moisture	10.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation	
Total Petroleum Hydrocarbons C6	6-C35 by EPA Method 801	5M							
C6-C12	880	139	mg/kg dry	5	P6I1510	09/14/16	09/15/16	TPH 8015M	
>C12-C28	2040	139	mg/kg dry	5	P6I1510	09/14/16	09/15/16	TPH 8015M	
>C28-C35	320	139	mg/kg dry	5	P6I1510	09/14/16	09/15/16	TPH 8015M	
Surrogate: 1-Chlorooctane		103 %	70-13	0	P6I1510	09/14/16	09/15/16	TPH 8015M	
Surrogate: o-Terphenyl		97.9 %	70-13	0	P6I1510	09/14/16	09/15/16	TPH 8015M	

139 mg/kg dry

[CALC]

09/14/16

09/15/16

calc

Total Petroleum Hydrocarbon

C6-C35

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

SP7 (3-3.5) 6I13004-32 (Soil)

Reporting
Analyte Result Limit Units Dilution Batch Prepared Analyzed Method Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

% Moisture 10.0 0.1 % 1 P6I1509 09/15/16 09/15/16 % calculation

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

SP8 (0-1.0) 6I13004-35 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pern	nian Basin E	Environmen	ital Lab, l	P.				
Organics by GC									
Benzene	ND	0.0215	mg/kg dry	20	P6I1901	09/17/16	09/18/16	EPA 8021B	•
Toluene	0.359	0.0430	mg/kg dry	20	P6I1901	09/17/16	09/18/16	EPA 8021B	
Ethylbenzene	0.697	0.0215	mg/kg dry	20	P6I1901	09/17/16	09/18/16	EPA 8021B	
Xylene (p/m)	2.55	0.0430	mg/kg dry	20	P6I1901	09/17/16	09/18/16	EPA 8021B	
Xylene (o)	3.25	0.0215	mg/kg dry	20	P6I1901	09/17/16	09/18/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		110 %	75-1	25	P6I1901	09/17/16	09/18/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		98.5 %	75-1	25	P6I1901	09/17/16	09/18/16	EPA 8021B	
General Chemistry Parameters by EPA	./ Standard Method	ls							
% Moisture	7.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 80	15M							
C6-C12	1540	134	mg/kg dry	5	P6I1510	09/14/16	09/15/16	TPH 8015M	
>C12-C28	5470	134	mg/kg dry	5	P6I1510	09/14/16	09/15/16	TPH 8015M	
>C28-C35	824	134	mg/kg dry	5	P6I1510	09/14/16	09/15/16	TPH 8015M	
Surrogate: 1-Chlorooctane		82.1 %	70-1	30	P6I1510	09/14/16	09/15/16	TPH 8015M	
Surrogate: o-Terphenyl		92.0 %	70-1	30	P6I1510	09/14/16	09/15/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	7830	134	mg/kg dry	5	[CALC]	09/14/16	09/15/16	calc	

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

SP8 (1-1.5) 6I13004-36 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Permia	ın Basin Eı	nvironm	ental Lab, L	P.				

General Chemistry Parameters by EPA / Stan	dard Method	s						
% Moisture	6.0	0.1	%	1	P6I1509	09/15/16	09/15/16	% calculation
Total Petroleum Hydrocarbons C6-C35 by EF	A Method 80	15M						
C6-C12	1670	133	mg/kg dry	5	P6I1510	09/14/16	09/15/16	TPH 8015M
>C12-C28	2750	133	mg/kg dry	5	P6I1510	09/14/16	09/15/16	TPH 8015M
>C28-C35	475	133	mg/kg dry	5	P6I1510	09/14/16	09/15/16	TPH 8015M
Surrogate: 1-Chlorooctane		120 %	70-130)	P6I1510	09/14/16	09/15/16	TPH 8015M
Surrogate: o-Terphenyl		92.2 %	70-130)	P6I1510	09/14/16	09/15/16	TPH 8015M
Total Petroleum Hydrocarbon	4900	133	mg/kg dry	5	[CALC]	09/14/16	09/15/16	calc

C6-C35

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

0.0531

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 (P6I1901-BLK1)				Prepared: 09	9/17/16 A	nalyzed: 09	9/18/16			
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	0.0621		"	0.0500		124	75-125			
Surrogate: 1,4-Difluorobenzene	0.0570		"	0.0500		114	75-125			
LCS (P6I1901-BS1)				Prepared: 09	9/17/16 A	nalyzed: 09	9/18/16			
Benzene	0.0917	0.00100	mg/kg wet	0.100		91.7	70-130			
Toluene	0.0894	0.00200	"	0.100		89.4	70-130			
Ethylbenzene	0.102	0.00100	"	0.100		102	70-130			
Xylene (p/m)	0.217	0.00200	"	0.200		109	70-130			
Xylene (o)	0.109	0.00100	"	0.100		109	70-130			
Surrogate: 1,4-Difluorobenzene	0.0471		"	0.0500		94.2	75-125			
Surrogate: 4-Bromofluorobenzene	0.0609		"	0.0500		122	75-125			
LCS Dup (P6I1901-BSD1)				Prepared: 09	9/17/16 A	nalyzed: 09	9/18/16			
Benzene	0.104	0.00100	mg/kg wet	0.100		104	70-130	12.8	20	
Toluene	0.102	0.00200	"	0.100		102	70-130	13.5	20	
Ethylbenzene	0.109	0.00100	"	0.100		109	70-130	6.50	20	
Xylene (p/m)	0.230	0.00200	"	0.200		115	70-130	5.43	20	
Xylene (o)	0.114	0.00100	"	0.100		114	70-130	4.83	20	
Surrogate: 1,4-Difluorobenzene	0.0525		"	0.0500		105	75-125			,
Surrogate: 4-Bromofluorobenzene	0.0591		"	0.0500		118	75-125			
Matrix Spike (P6I1901-MS1)	Sour	rce: 6I13007-	-09	Prepared: 09	9/17/16 A	nalyzed: 09	9/18/16			
Benzene	0.169	0.00101	mg/kg dry	0.202	ND	83.5	80-120			
Toluene	0.130	0.00202	"	0.202	ND	64.6	80-120			QM-07
Ethylbenzene	0.0503	0.00101	"	0.202	ND	24.9	80-120			QM-07
Xylene (p/m)	0.176	0.00202	"	0.404	ND	43.6	80-120			QM-07
Xylene (o)	0.118	0.00101	"	0.202	ND	58.5	80-120			QM-07
Surrogate: 4-Bromofluorobenzene	0.0603		"	0.0505		119	75-125			

Surrogate: 1,4-Difluorobenzene

105

75-125

0.0505

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

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	l

Batch P6I1901 - General Preparation (GC)

Matrix Spike Dup (P6I1901-MSD1)	Sour	Source: 6I13007-09			9/17/16 A	nalyzed: 09				
Benzene	0.163	0.00101	mg/kg dry	0.202	ND	80.8	80-120	3.24	20	_
Toluene	0.128	0.00202	"	0.202	ND	63.4	80-120	1.82	20	QM-07
Ethylbenzene	0.0494	0.00101	"	0.202	ND	24.4	80-120	1.84	20	QM-07
Xylene (p/m)	0.167	0.00202	"	0.404	ND	41.4	80-120	5.20	20	QM-07
Xylene (o)	0.102	0.00101	"	0.202	ND	50.7	80-120	14.3	20	QM-07
Surrogate: 4-Bromofluorobenzene	0.0642		"	0.0505		127	75-125			S-GC
Surrogate: 1,4-Difluorobenzene	0.0549		"	0.0505		109	75-125			

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

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 P6I1509 - *** DEFAULT PREP ***										
Blank (P6I1509-BLK1)				Prepared &	Analyzed:	09/15/16				
% Moisture	ND	0.1	%							
Blank (P611509-BLK2)				Prepared &	z Analyzed:	09/15/16				
% Moisture	ND	0.1	%							
Duplicate (P6I1509-DUP1)	Sou	rce: 6I13003-0	1	Prepared &	z Analyzed:	09/15/16				
% Moisture	6.0	0.1	%		6.0			0.00	20	
Duplicate (P6I1509-DUP2)	Sou	rce: 6I13004-2	:7	Prepared &	z Analyzed:	09/15/16				
% Moisture	16.0	0.1	%		15.0			6.45	20	
Duplicate (P6I1509-DUP3)	Sou	rce: 6I13007-0	7	Prepared &	z Analyzed:	09/15/16				
% Moisture	5.0	0.1	%		5.0			0.00	20	
Duplicate (P6I1509-DUP4)	Sou	rce: 6I13011-1	9	Prepared &	z Analyzed:	09/15/16				
% Moisture	2.0	0.1	%		2.0			0.00	20	
Duplicate (P6I1509-DUP5)	Sou	rce: 6I13011-4	4	Prepared &	z Analyzed:	09/15/16				
% Moisture	11.0	0.1	%		11.0			0.00	20	
Duplicate (P6I1509-DUP6)	Sou	rce: 6I13011-4	6	Prepared &	. Analyzed:	09/15/16				
% Moisture	9.0	0.1	%		10.0			10.5	20	

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

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 P6I1507 - TX 1005										
Blank (P6I1507-BLK1)				Prepared: (09/13/16 Aı	nalyzed: 09	/15/16			
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	113		"	100		113	70-130			
Surrogate: o-Terphenyl	52.7		"	50.0		105	70-130			
LCS (P6I1507-BS1)				Prepared: (09/13/16 Aı	nalyzed: 09	/15/16			
C6-C12	1060	25.0	mg/kg wet	1000		106	75-125			
>C12-C28	1200	25.0	"	1000		120	75-125			
Surrogate: 1-Chlorooctane	129		"	100		129	70-130			
Surrogate: o-Terphenyl	53.1		"	50.0		106	70-130			
LCS Dup (P6I1507-BSD1)				Prepared: (09/13/16 Aı	nalyzed: 09	/15/16			
C6-C12	1100	25.0	mg/kg wet	1000		110	75-125	4.05	20	
>C12-C28	1100	25.0	"	1000		110	75-125	8.25	20	
Surrogate: 1-Chlorooctane	108		"	100		108	70-130			
Surrogate: o-Terphenyl	56.0		"	50.0		112	70-130			
Duplicate (P6I1507-DUP1)	Sou	rce: 6I13004-	-06	Prepared: (09/13/16 Aı	nalyzed: 09	/15/16			
C6-C12	147	147	mg/kg dry		166			11.6	20	
>C12-C28	1580	147	"		1560			1.27	20	
Surrogate: 1-Chlorooctane	136		"	118		116	70-130			
Surrogate: o-Terphenyl	66.2		"	58.8		112	70-130			
Batch P6I1508 - TX 1005										
Blank (P6I1508-BLK1)				Prepared &	Analyzed:	09/14/16				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	73.4		"	100		73.4	70-130			
Surrogate: o-Terphenyl	39.9		"	50.0		79.8	70-130			

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

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
-	Result	Linit	Cints	Level	Result	70KEC	Limits	МЪ	Limit	Trotes
Batch P6I1508 - TX 1005										
LCS (P6I1508-BS1)					& Analyzed:					
C6-C12	692	25.0	mg/kg wet	700		98.8	75-125			
>C12-C28	700	25.0	"	700		99.9	75-125			
Surrogate: 1-Chlorooctane	79.4		"	100		79.4	70-130			
Surrogate: o-Terphenyl	36.2		"	50.0		72.4	70-130			
LCS Dup (P6I1508-BSD1)				Prepared &	& Analyzed:	09/14/16				
C6-C12	687	25.0	mg/kg wet	700		98.2	75-125	0.584	20	
>C12-C28	779	25.0	"	700		111	75-125	10.7	20	
Surrogate: 1-Chlorooctane	93.5		"	100		93.5	70-130			
Surrogate: o-Terphenyl	44.7		"	50.0		89.5	70-130			
Duplicate (P6I1508-DUP1)	Sou	rce: 6I13004	-26	Prepared: (09/14/16 A:	nalyzed: 09	/15/16			
C6-C12	ND	29.4	mg/kg dry	•	19.2	<u> </u>			20	
>C12-C28	ND	29.4	"		24.9				20	
Surrogate: 1-Chlorooctane	119		"	118		101	70-130			
Surrogate: o-Terphenyl	65.0		"	58.8		110	70-130			
Batch P6I1510 - TX 1005										
Blank (P6I1510-BLK1)				Prepared: (09/14/16 A:	nalyzed: 09	/15/16			
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	73.5		"	100		73.5	70-130			
Surrogate: o-Terphenyl	39.2		"	50.0		78.4	70-130			
LCS (P6I1510-BS1)				Prepared: (09/14/16 A	nalyzed: 09	/15/16			
C6-C12	737	25.0	mg/kg wet	700		105	75-125			
>C12-C28	833	25.0	"	700		119	75-125			
Surrogate: 1-Chlorooctane	78.4		"	100		78.4	70-130			
Surrogate: o-Terphenyl	37.0		"	50.0		73.9	70-130			

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

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 P6I1510 - TX 1005										
LCS Dup (P6I1510-BSD1)				Prepared: (09/14/16 A	nalyzed: 09	9/15/16			
C6-C12	759	25.0	mg/kg wet	700		108	75-125	2.95	20	
>C12-C28	796	25.0	"	700		114	75-125	4.59	20	
Surrogate: 1-Chlorooctane	76.0		"	100		76.0	70-130			
Surrogate: o-Terphenyl	35.4		"	50.0		70.9	70-130			
Duplicate (P6I1510-DUP1)	Sour	rce: 6I13020-	-05	Prepared: (09/14/16 A	nalyzed: 09	0/15/16			
C6-C12	34.2	28.4	mg/kg dry		28.6			18.1	20	
>C12-C28	147	28.4	"		116			23.7	20	
Surrogate: 1-Chlorooctane	104		"	114		91.2	70-130			
Surrogate: o-Terphenyl	57.8		"	56.8		102	70-130			

24 Smith Road Suite 100 Project Number: [none]

Midland TX, 79705 Project Manager: Johnny Titsworth

Notes and Definitions

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

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

recovery.

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

	Bren Barron		
Report Approved By:		Date:	9/20/2016

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:

Johnny Titsworth

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP 1400 Rankin Hwy Midland, Texas 79701

Project Name:

Gissler 'A' 43

Phone: 432-686-7235

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of	Received by	Received by:	Date	eds 10 mg/kg -run deeper sample		09/13/16	09/43/16	09/13/16	09/43/16	09/13/13	09/23/26	09/13/48	331346	08/13/16	\$\frac{1}{4}\text{\$\frac{1}{2}\text{\$\frac{1}\text{\$\frac{1}{2}\text{\$\frac{1}{2}\text{\$\frac{1}{2}\text{\$\frac{1}{2}\text{\$\frac{1}{2}\text{\$\frac{1}{2}\text{\$\frac{1}{2}\text{\$\frac{1}{2}\text{\$\frac{1}\text{\$\frac{1}\text{\$\frac{1}\text{\$\frac{1}\text{\$\frac{1}\text{\$\frac{1}\text{\$\frac{1}	Time Sampled Field Filtered Total #. of Containers HNO _{3 250,ml, Poly} HCI H ₂ SC ₂ NaOH. Na ₂ S ₂ C ₃ NaOH. NaCH/ZnAC Dyy-Linnking Water SL ² Sludge	Preservation & # of Containers Mi	Inettoil.com engrow.us spengrow.us				Midland, Texas 79701
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