



REMEDIATION SUMMARY AND SITE CLOSURE REQUEST

COG Jack Federal #004H (Flowline)

API # 30-015-42134

UNIT LETTER C, SECTION 31, TOWNSHIP 25 SOUTH, RANGE 27 EAST, NMPM

N 32.09125° W 104.23278°

EDDY COUNTY, NEW MEXICO

2RP-5623

Incident ID NAB1926742112

Prepared for:

COG Operating, LLC
600 West Illinois Avenue
Midland, Texas 79701

Ready Oilfield Service, Inc.
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Prepared by:

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June 2020

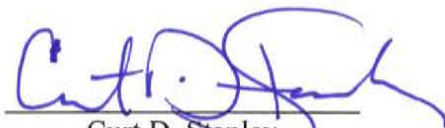

Curt D. Stanley
Senior Project Manager

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1.0 INTRODUCTION AND BACKGROUND

On behalf of COG Operating, LLC (COG) and Ready Oilfield Service, Inc. (Ready Oilfield), TRC Environmental Corporation (TRC) has prepared this *Remediation Summary and Site Closure Request* for the produced water Release Site known as Jack Federal #004H (Flowline). The Release Site is located approximately thirteen (13) miles southwest of Malaga in Eddy County, New Mexico in Unit Letter C, Section 31, Township 25 South, Range 27 East, NMPM. The Release Site GPS coordinates are N 32.09125° W 104.23278°. The Release Site is located on property owned the The United States Department of the Interior and administered by the Bureau of Land Management (BLM). A copy of New Mexico Oil Conservation Division (NMOCD) Release Notification (Form C-141) is provided with this *Remediation Summary and Site Closure Request* as Appendix F. A topographic location map and aerial map are provided as Figure 1 and Figure 2, respectively. Photographic documentation is provided as Appendix A.

On August 13, 2019, a third-party contractor (Ready Oilfield Services, LLC) struck a COG flowline with a backhoe, resulting in the release of fifteen (15) barrels (bbls) of produced water. During initial response activities, a vacuum truck recovered ten (10) bbls of produced water. The Release was located on a lease road and pipeline right-of-way. Following the initial response activities, the flowline was repaired. A New Mexico Oil Conservation Division (NMOCD) Form C-141 was prepared and submitted to the NMOCD on August 15, 2019.

A groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) indicated no water wells were located within a one-half (0.5) mile radius of the release point. The NMOSE database did identify a water well (C04079) in Section 33, Township 25 South, Range 27 E, approximately two (2) miles east of the Release Site. The NMOSE database indicated the depth to water at the water well was twenty (20) feet below ground surface. Depth to Groundwater information is provided as Appendix B.

Based on the depth to groundwater at the Jack Federal #004H (Flowline), the *NMOCD Closure Criteria for Soils Impacted by a Release* are the most stringent closure criteria listed. The Bureau of Land Management (BLM) publicly available *Karst Potential Map* indicates the Jack Federal #004H (Flowline) Release Site, is located in a “critical karst” area. The BLM Karst Potential Map is provided as Figure 3. Based on the NMOCD Closure Criteria for Soils Impacted by a Release, the Closure Criteria for the Jack Federal #004H (Flowline) Release Site are as follows:

- Benzene - 10 mg/kg
- Benzene, Toluene, ethylbenzene, and total xylenes (BTEX) - 50 mg/kg
- Total Petroleum Hydrocarbons (TPH) – 100 mg/kg
- Chloride – 600 mg/kg

2.0 SUMMARY OF EXCAVATION ACTIVITIES

On August 15, 2019, excavation activities commenced at the COG Jack Federal #004H (Flowline) Release Site and excavated soil was stockpiled on-site on a plastic liner pending transportation to an NMOCD approved Landfill.

On August 17 and 19, 2019, thirty-eight (38) soil samples (F-1 @ Sur, F-2 @ Sur, F-3 @ Sur, F-4 @ Sur, F-5 @ 1', F-6 @ 2', WSW-6 @ 2.5', ESW-6 @ 1', F-7 @ 1', F-8 @ Sur, F-9 @ Sur, F-10 @ Sur, F-11 @ 4', WSW-11 @ 2.5', NSW-11 @ 2.5', ESW-11 @ 2.5', F-12 @ 9", F-13 @ 1.5', SSW-13 @ 6", NSW-13 @ 6", F-14 @ 9", F-15 @ 2', NSW-15 @ 6", SSW-15 @ 1', F-16 @ 2', NSW-16 @ 6", SSW-16 @ 1', F-17 @ Sur, F-18 @ 1.5', F-19 @ 2', NSW-19 @ 1', F-20 @ 1.5', SSW-20 @ 1', F-21 @ 9", F-22 @ 9", F-23 @ 9", F-24 @ 9", and F-25 @ 9") were collected from the excavation floor and sidewalls and submitted to Permian Basin Environmental Labs (PBE Labs) in Midland, Texas. The soil samples were analyzed for concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX) using Method SW 846-8021b, Total Petroleum Hydrocarbon (TPH) using Method SW 846-8015M, and Chloride using EPA Method 300.0.

The analytical results indicated benzene concentrations were less than the applicable laboratory reporting limit (RL) for all thirty-eight (38) soil samples. The analytical results indicated BTEX concentrations ranged from less than the applicable laboratory RL for soil samples (F-2 @ Sur, F-3 @ Sur, ESW-6 @ 1', F-7 @ 1', F-11 @ 4', ESW-11 @ 2.5', F-15 @ 2', NSW-16 @ 6", SSW-16 @ 1', F-18 @ 1.5', F-21 @ 9", F-22 @ 9", F-23 @ 9", F-24 @ 9", and F-25 @ 9") to 0.21380 mg/kg for soil sample F-17 @ Sur. The analytical results indicated TPH concentrations were less than the applicable laboratory RL for all thirty-eight (38) soil samples. Chloride concentrations ranged from 3.27 mg/kg for soil sample ESW-6 @ 1' to 563 mg/kg for soil sample F-19 @ 2'.

On October 17, 2019, additional excavation activities were completed and fourteen (14) soil samples (ESW-5 @ 6", SSW-6 @ 4", ESW-13 @ 9", WSW-16 @ 6", WSW-7 @ 3", SSW-19 @ 10", WSW-20 @ 9", F-26 @ 1.5', ESW-18 @ 9", ESW-21 @ 4", ESW-22 @ 5", NSW-23 @ 5", SSW-24 @ 5", and WSW-25 @ 5") were collected and submitted to the laboratory for analysis.

The analytical results indicated benzene, BTEX, and TPH concentrations were less than the applicable laboratory RL for all fourteen (14) soil samples. Chloride concentrations ranged from 2.51 mg/kg for soil sample SSW-6 @ 4" to 14,100 mg/kg for soil sample WSW-7 @ 3". The analytical results indicated the areas represented by soil samples ESW-5 @ 6", WSW-7 @ 3", and ESW-18 @ 9" exhibited chloride concentrations of 2,350 mg/kg, 14,100 mg/kg, and 820 mg/kg, respectively and warranted additional excavation.

On December 19, 2019, impacted soil represented by soil samples ESW-5 @ 6", WSW-7 @ 3", and ESW-18 @ 9" was excavated laterally and added to the impacted soil stockpile. Following the excavation activities, three (3) soil samples (WSW-7A @ 3", ESW-5A @ 6", and ESW-18A @ 9") were collected and submitted to the laboratory.

The analytical results indicated benzene, BTEX, and TPH concentrations were less than the applicable laboratory RL for all three (3) soil samples. Chloride concentrations ranged from 148 mg/kg for soil sample ESW-5A @ 6" to 425 mg/kg for soil sample ESW-18A @ 9".

An Excavation and Sample Location Map is provided as Figure 4. An Excavation and Sample Location Map with aerial photographic imagery is provided as Figure 5. A Summary of Concentrations of Benzene, BTEX, TPH and Chloride is provided as Table 1 and chloride field test results are provided in Appendix C. Laboratory Analytical Reports are provided as Appendix D. A copy of the NMOCD (*Request for Approval to Accept Solid Waste*) Form C-138 is provided as Appendix E.

On May 6-7, 2020, approximately one hundred eighty (180) cubic yards of impacted soil was transported under manifest to the Lea Land disposal facility located northeast of Carlsbad, New Mexico. Backfill material was purchased from Lea Land and the Site was contoured to fit the local topography. Copies of the Lea Land Disposal Manifests will be available upon request.

3.0 SITE CLOSURE REQUEST

Based on the analytical results of confirmation soil samples obtained from the floor and sidewalls of the excavation, TRC recommends COG provide the NMOCD and BLM a copy of this Remediation Summary and Site Closure Request and request the NMOCD and BLM grant soil closure status to the Jack Federal #004H (Flowline).

4.0 LIMITATIONS

TRC has prepared this Remediation Summary and Site Closure Request to the best of its ability. No other warranty, expressed or implied, is made or intended.

TRC has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. TRC has not conducted an independent examination of the facts contained in referenced materials and statements. We have presumed the genuineness of the documents and that the information provided in documents or statements is true and accurate. TRC has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. TRC also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

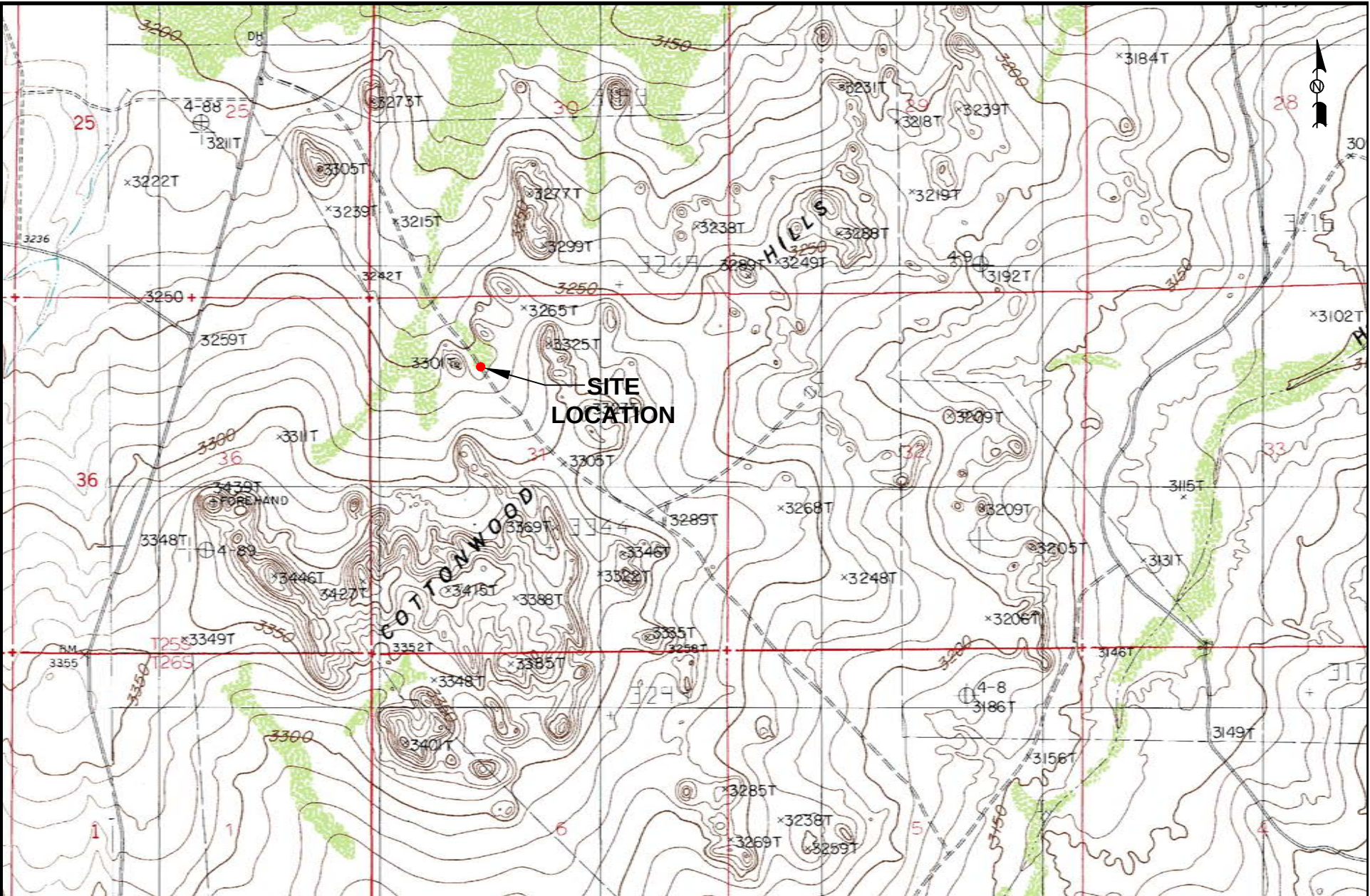
This report has been prepared for the benefit of COG and/or Ready Oilfield. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of TRC, and/or COG, and/or Ready Oilfield.

5.0 DISTRIBUTION

- Copy 1: Mike Bratcher
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, District 2
811 S. First Street
Artesia, NM 88210
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cdstanley@trccompanies.com

Figures

DRAWING NAME: H:\Nova\Project Files\Plains\New Mexico\Jack Federal 004H Flowline - Ready Oilfield\ Figure 1 Site Location.dwg --- PLOT DATE: June 10, 2020 - 12:28PM --- LAYOUT: Layout1



LEGEND:

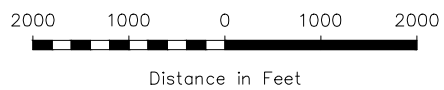
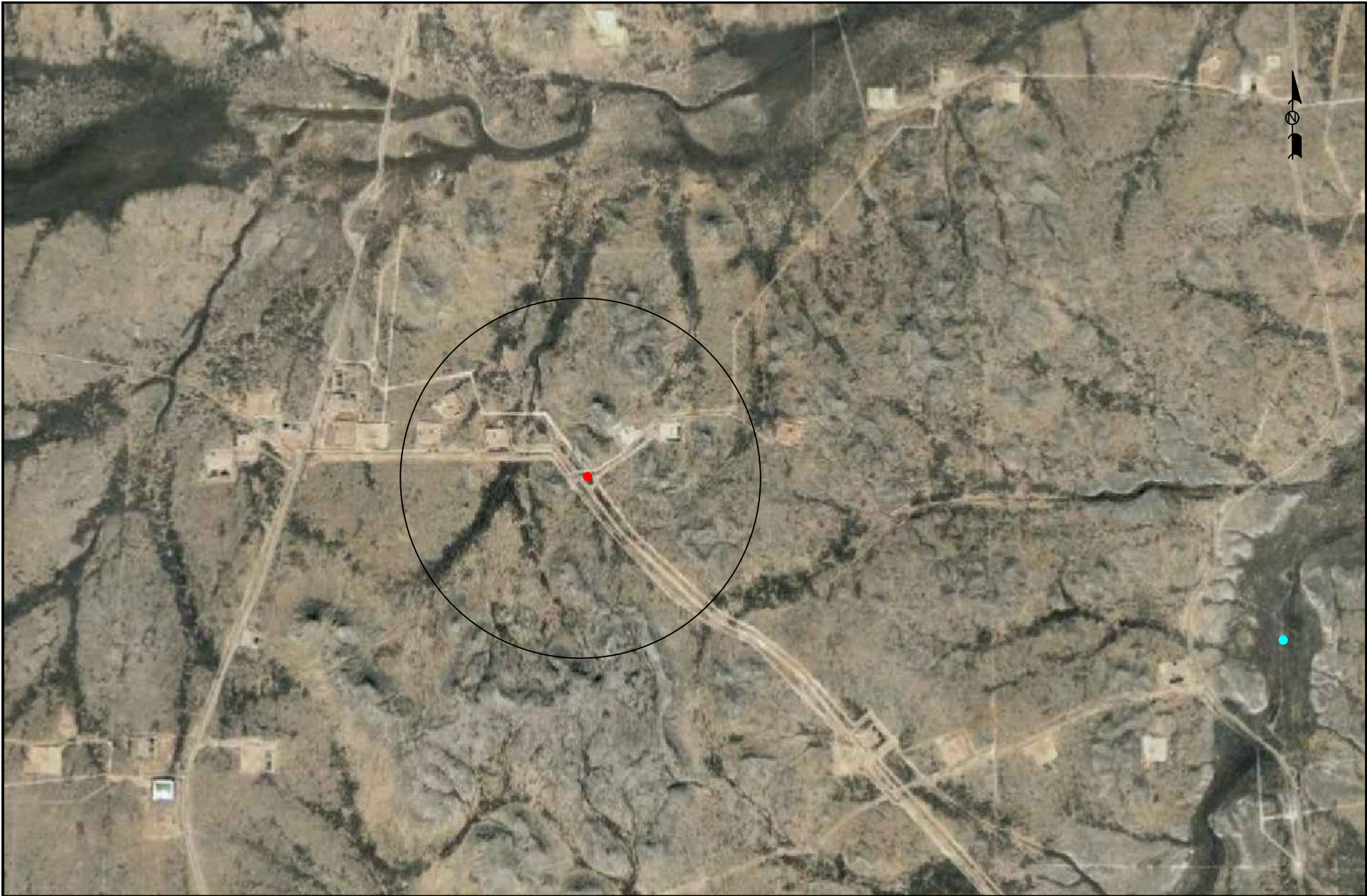


Figure 1
Site Location Map
COG Operating, LLC
Ready Oilfield Services, Inc.
COG Jack Federal #004H (Flowline)
Eddy County, NM

Scale: 1" = 2000'	
CAD By: CS	Checked By: CS
Draft: May 14, 2020	
Lat. N 32.09125° , Long. W 104.23278°	
ULT C, Sec 31 T25S R27E	
TRC Proj. No.: 358143	

10 Desta Drive, Suite 150E
Midland, Texas 79705
432.520.7720



LEGEND:

- Site Location
- 1/2 Mile Radius
- Water Well

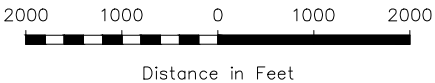
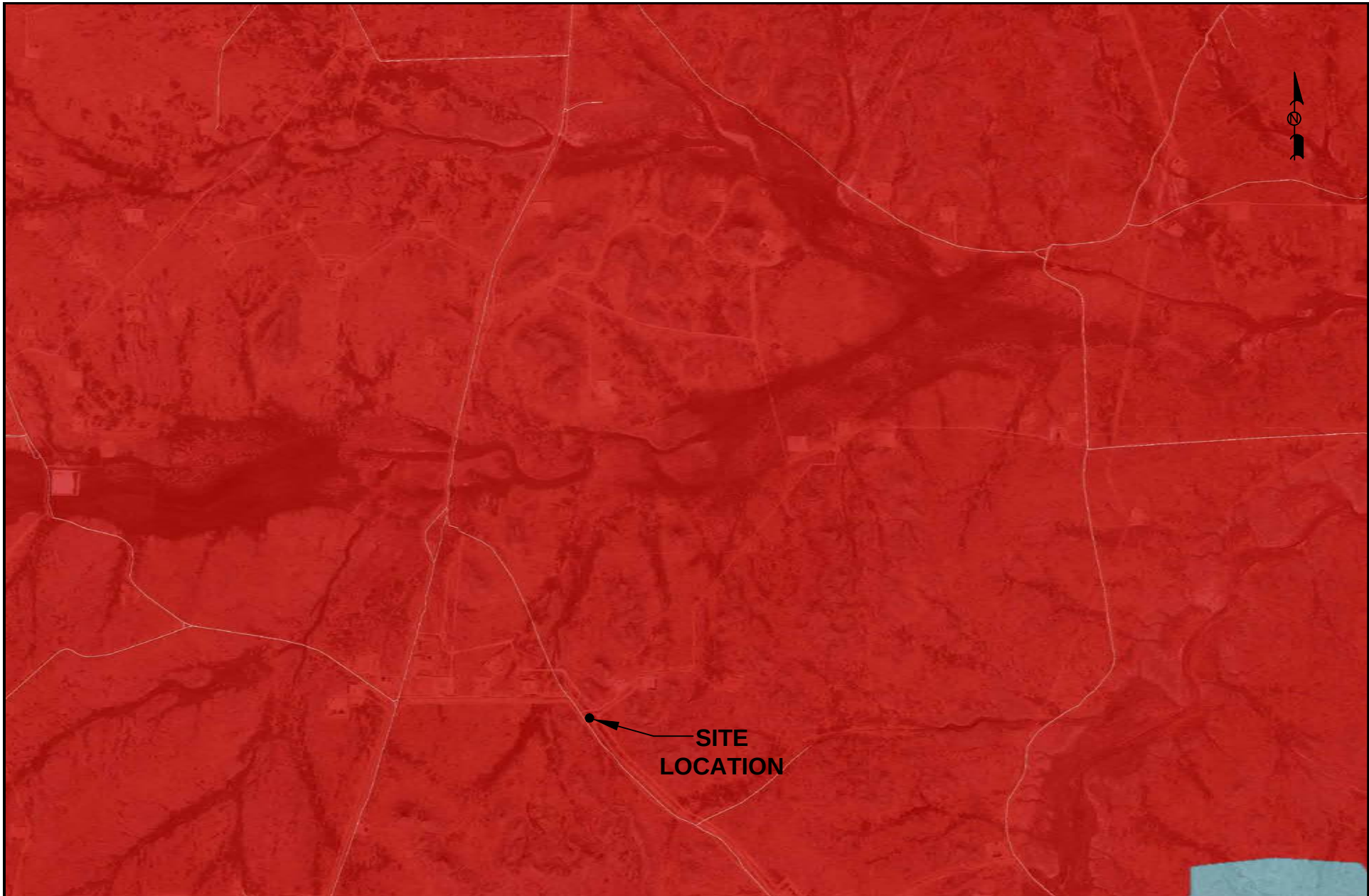


Figure 2
Aerial Map
COG Operating, LLC
Ready Oilfield Services, Inc.
COG Jack Federal #004H (Flowline)
Eddy County, NM

Scale: 1" = 2,000'
CAD By: CS
Checked By: CS
Draft: May 14, 2020
Lat. N 32.09125° Long. W 104.23278°
ULT C, Sec 31, T25S R27E



10 Desta Drive, Suite 150E
Midland, Texas 79703
432.520.7720



LEGEND:

-  Low Karst Potential
-  Medium Karst Potential
-  Critical Karst Potential

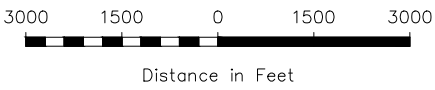
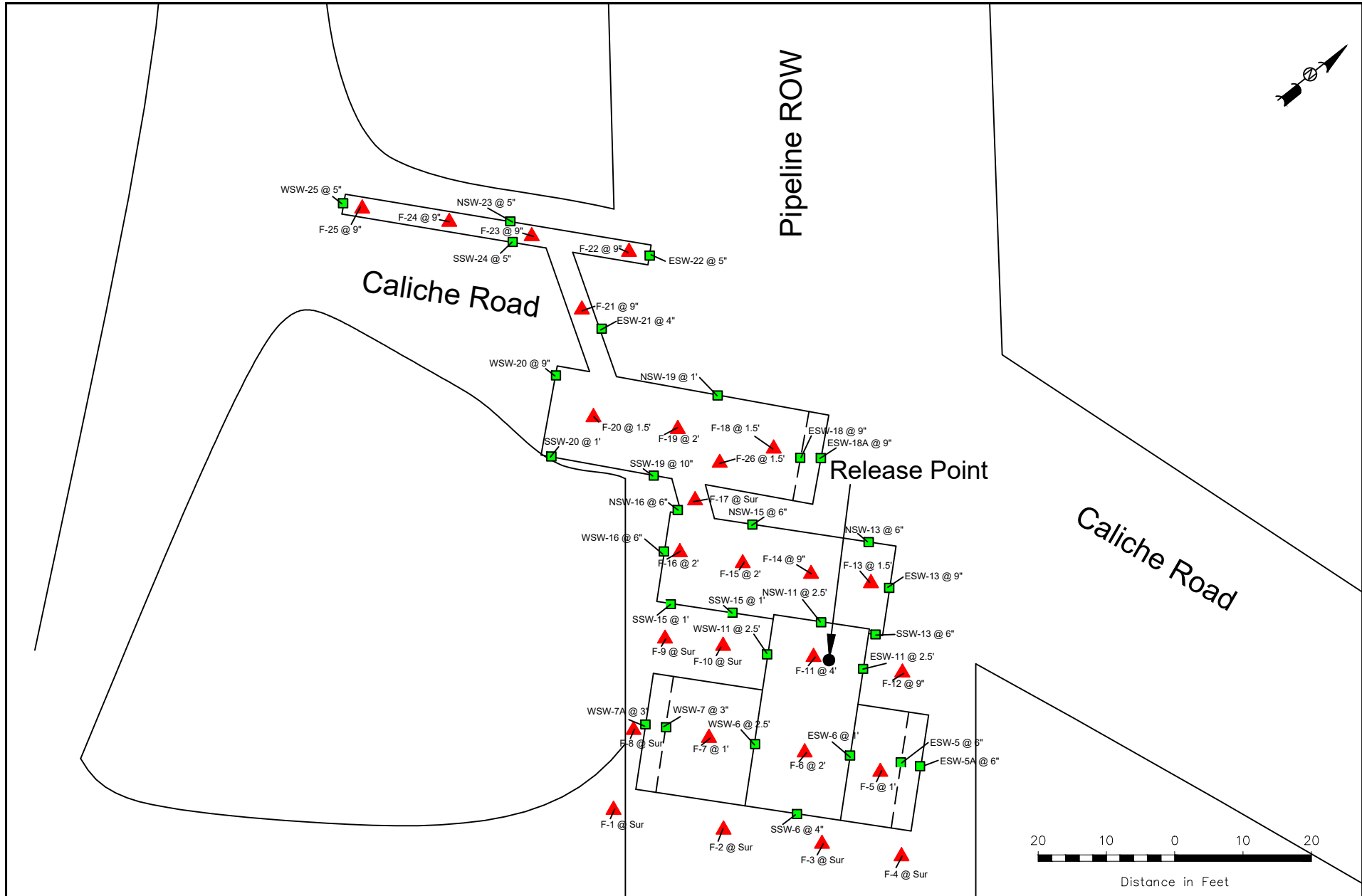


Figure 3
Karst Potential Map
COG Operating, LLC
Ready Oilfield Services, Inc.
COG Jack Federal #004H (Flowline)
Eddy County, NM

Scale: 1" = 3000'
CAD By: CS
Checked By: CS
Draft: May 14, 2020
Lat. N 32.09125° Long. W 104.23278°
ULT C, Sec 31, T25S R27E



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Midland, Texas 79703
432.520.7720



LEGEND:

- ▲ Excavation Floor Sample
- Excavation Sidewall Sample

Figure 4
Excavation and Sample Location Map
COG Operating, LLC
Ready Oilfield Services, Inc.
COG Jack Federal #004H (Flowline)
Eddy County, NM

Scale: 1" = 20'

CAD By: CS

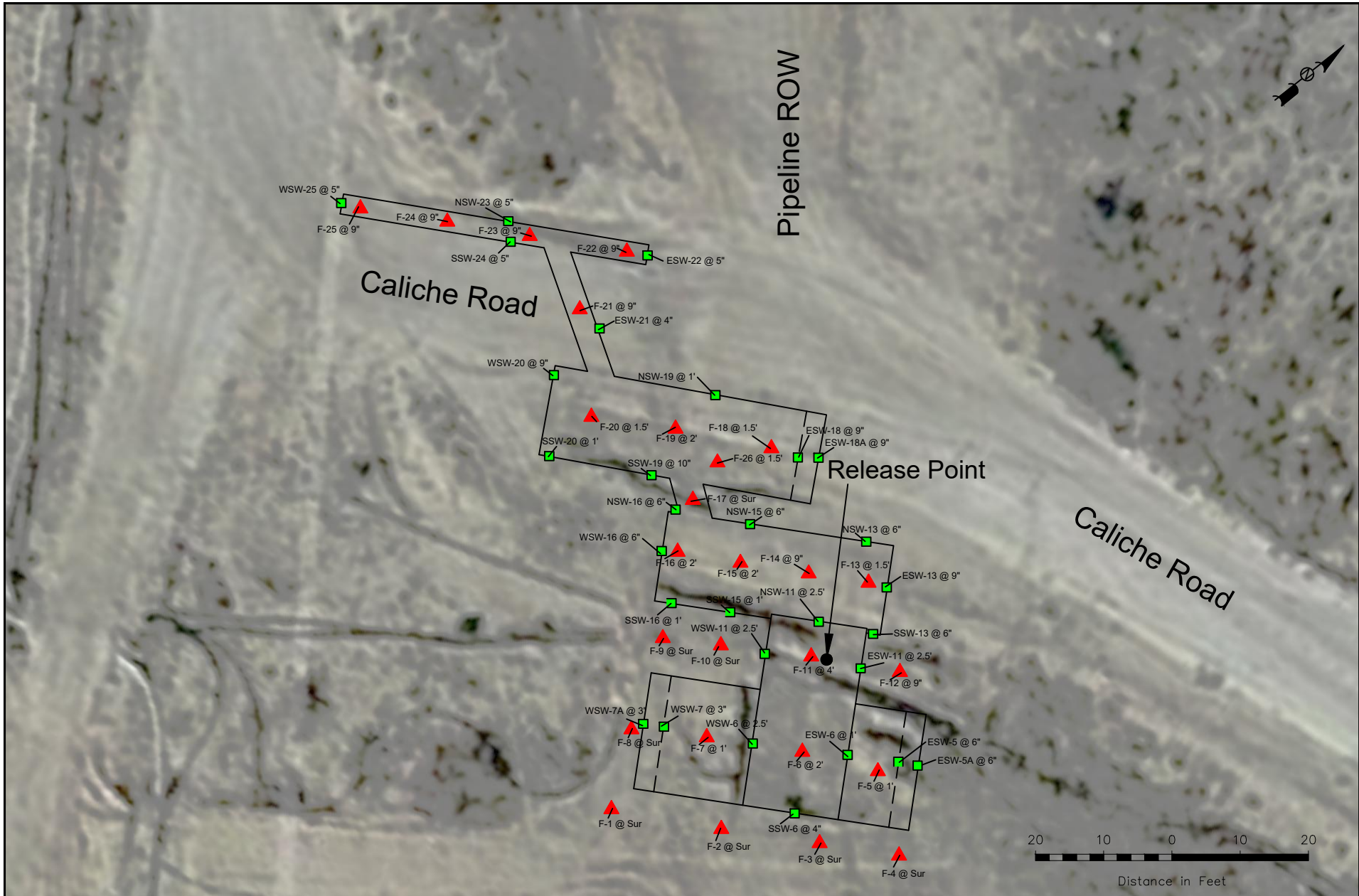
Checked By: CS

Draft: May 14, 2020

Lat. N 32.09125° Long. W 104.23278°

ULT C, Sec 31, T25S R27E





LEGEND:

- ▲ Excavation Floor Sample
- Excavation Sidewall Sample

Figure 5
 Excavation and Sample Location Map
 with Aerial Photographic Imagery
 COG Operating, LLC
 Ready Oilfield Services, Inc.
 COG Jack Federal #004H (Flowline)
 Eddy County, NM

Scale: 1" = 20'

CAD By: CS

Checked By: CS

Draft: May 14, 2020

Lat. N 32.09125° Long. W 104.23278°

ULT C, Sec 31, T25S R27E



Table

TABLE 1
CONCENTRATIONS OF BTEX, TPH, AND CHLORIDE IN SOIL

COG JACK FEDERAL #004H
COG OPERATING, LLC
EDDY COUNTY, NM
Incident ID NAB1926742112
NMOCD REFERENCE 2RP-5623

SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH (feet)	Methods: EPA SW 846-8021B, 5030						Method: SW 846-8015M				Method: E 300.0
			BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	m,p XYLENE (mg/kg)	o XYLENE (mg/kg)	TOTAL BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	TOTAL TPH (mg/kg)	CHLORIDE (mg/kg)
NMOCD Regulatory Guideline			10	-	-	-	-	50	-	-	-	100	600
F-1 @ Sur	8/17/2019	Surface	<0.00101	0.00214	0.00503	0.0124	0.00560	0.02517	<25.3	<25.3	<25.3	<25.3	23.7
F-2 @ Sur	8/17/2019	Surface	<0.00100	<0.00100	<0.00100	<0.00200	<0.00100	<0.00200	<25.0	<25.0	<25.0	<25.0	204
F-3 @ Sur	8/17/2019	Surface	<0.00104	<0.00104	<0.00104	<0.00208	<0.00104	<0.00208	<26.0	<26.0	<26.0	<26.0	413
F-4 @ Sur	8/17/2019	Surface	<0.00105	0.00113	0.00625	0.0102	0.00382	0.02140	<26.3	<26.3	<26.3	<26.3	52.0
F-5 @ 1'	8/17/2019	1' bgs	<0.00105	<0.00105	0.00275	0.00421	0.00291	0.00987	<26.3	<26.3	<26.3	<26.3	44.2
F-6 @ 2'	8/17/2019	2' bgs	<0.00104	0.00114	0.00216	0.00506	0.00267	0.01103	<26.0	<26.0	<26.0	<26.0	168
WSW-6 @ 2.5'	8/17/2019	2.5' bgs	<0.00112	0.00138	0.00337	0.00738	0.00496	0.01709	<28.1	<28.1	<28.1	<28.1	5.85
ESW-6 @ 1'	8/19/2019	1' bgs	<0.00100	<0.00100	<0.00100	<0.00200	<0.00100	<0.00200	<26.3	<26.3	<26.3	<26.3	3.27
F-7 @ 1'	8/19/2019	1' bgs	<0.00100	<0.00100	<0.00100	<0.00200	<0.00100	<0.00200	<26.6	<26.6	<26.6	<26.6	26.6
F-8 @ Sur	8/17/2019	Surface	<0.00109	0.00650	0.00989	0.02420	0.01090	0.05149	<27.2	<27.2	<27.2	<27.2	32.0
F-9 @ Sur	8/17/2019	Surface	<0.00108	0.00178	0.00526	0.0101	0.00468	0.02182	<26.9	<26.9	<26.9	<26.9	81.6
F-10 @ Sur	8/17/2019	Surface	<0.00108	<0.00108	0.00159	0.00331	0.00117	0.00607	<26.9	<26.9	<26.9	<26.9	47.4
F-11 @ 4'	8/17/2019	4' bgs	<0.00103	<0.00103	<0.00103	<0.00206	<0.00103	<0.00206	<25.8	<25.8	<25.8	<25.8	36.8
WSW-11 @ 2.5'	8/17/2019	2.5' bgs	<0.00104	0.00372	0.00759	0.0136	0.00759	0.03250	<26.0	<26.0	<26.0	<26.0	34.2
NSW-11 @ 2.5'	8/17/2019	2.5 bgs	<0.00106	0.00684	0.0120	0.0296	0.0108	0.05924	<26.6	<26.6	<26.6	<26.6	32.7
ESW-11 @ 2.5'	8/17/2019	2.5' bgs	<0.00104	<0.00104	<0.00104	<0.00208	<0.00104	<0.00208	<26.0	<26.0	<26.0	<26.0	246
F-12 @ 9"	8/17/2019	9 inches bgs	<0.00105	0.00157	0.00199	0.00539	0.00305	0.01200	<26.3	<26.3	<26.3	<26.3	4.55
F-13 @ 1.5'	8/17/2019	1.5' bgs	<0.00100	0.00560	0.0105	0.0235	0.00882	0.04842	<25.0	<25.0	<25.0	<25.0	8.83
SSW-13 @ 6"	8/17/2019	6 inches bgs	<0.00106	<0.00106	0.00136	0.00278	<0.00106	0.00414	<26.6	<26.6	<26.6	<26.6	17.5
NSW-13 @ 6"	8/17/2019	6 inches bgs	<0.00100	0.00208	0.00649	0.0135	0.00493	0.02700	<25.0	<25.0	<25.0	<25.0	38.4
F-14 @ 9"	8/17/2019	9 inches bgs	<0.00106	0.00511	0.00757	0.0226	0.00744	0.04272	<26.6	<26.6	<26.6	<26.6	6.33
F-15 @ 2'	8/17/2019	2' bgs	<0.00109	<0.00109	<0.00109	<0.00217	<0.00109	<0.00217	<27.2	<27.2	<27.2	<27.2	59.0
NSW-15 @ 6"	8/17/2019	6" inches bgs	<0.00108	0.00212	0.00543	0.00929	0.00380	0.02064	<26.9	<26.9	<26.9	<26.9	39.7
SSW-15 @ 1'	8/17/2019	1' bgs	<0.00103	0.00421	0.00732	0.0134	0.00637	0.03130	<25.8	<25.8	<25.8	<25.8	13.7
F-16 @ 2'	8/17/2019	2' bgs	<0.00114	0.00152	0.00169	0.00342	<0.00114	0.00663	<28.4	<28.4	<28.4	<28.4	29.3
NSW-16 @ 6"	8/17/2019	6 inches bgs	<0.00110	<0.00110	<0.00110	<0.00220	<0.00110	<0.00220	<27.5	<27.5	<27.5	<27.5	345

TABLE 1
CONCENTRATIONS OF BTEX, TPH, AND CHLORIDE IN SOIL

COG JACK FEDERAL #004H
COG OPERATING, LLC
EDDY COUNTY, NM
Incident ID NAB1926742112
NMOCD REFERENCE 2RP-5623

SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH (feet)	Methods: EPA SW 846-8021B, 5030						Method: SW 846-8015M				Method: E 300.0
			BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	m,p XYLENE (mg/kg)	o XYLENE (mg/kg)	TOTAL BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	TOTAL TPH (mg/kg)	CHLORIDE (mg/kg)
NMOCD Regulatory Guideline			10	-	-	-	-	50	-	-	-	100	600
SSW-16 @ 1'	8/17/2019	1' bgs	<0.00106	<0.00106	<0.00106	<0.00213	<0.00106	<0.00213	<26.6	<26.6	<26.6	<26.6	36.4
F-17 @ Sur	8/17/2019	Surface	<0.00100	0.0253	0.0418	0.110	0.0367	0.21380	<25.8	<25.8	<25.8	<25.8	162
F-18 @ 1.5'	8/17/2019	1.5' bgs	<0.00100	<0.00100	<0.00100	<0.00200	<0.00100	<0.00200	<28.1	<28.1	<28.1	<28.1	140
F-19 @ 2'	8/17/2019	2' bgs	<0.00100	<0.00100	0.00153	0.00309	0.00316	0.00778	<28.1	<28.1	<28.1	<28.1	563
NSW-19 @ 1'	8/17/2019	1' bgs	<0.00100	0.00621	0.00750	0.0165	0.00547	0.03568	<26.6	<26.6	<26.6	<26.6	104
F-20 @ 1.5'	8/17/2019	1.5' bgs	<0.00100	<0.00100	0.00249	0.00441	0.00130	0.00820	<27.5	<27.5	<27.5	<27.5	14.1
SSW-20 @ 1'	8/17/2019	1' bgs	<0.00100	<0.00100	0.00248	0.00613	0.00389	0.01250	<26.6	<26.6	<26.6	<26.6	78.5
F-21 @ 9"	8/19/2019	9 inches bgs	<0.00100	<0.00100	<0.00100	<0.00200	<0.00100	<0.00200	<26.9	<26.9	<26.9	<26.9	236
F-22 @ 9"	8/19/2019	9 inches bgs	<0.00100	<0.00100	<0.00100	<0.00200	<0.00100	<0.00200	<26.0	<26.0	<26.0	<26.0	435
F-23 @ 9"	8/19/2019	9 inches bgs	<0.00100	<0.00100	0.00113	<0.00200	<0.00100	<0.00200	<25.8	<25.8	<25.8	<25.8	219
F-24 @ 9"	8/19/2019	9 inches bgs	<0.00100	<0.00100	<0.00100	<0.00200	<0.00100	<0.00200	<26.0	<26.0	<26.0	<26.0	133
F-25 @ 9"	8/19/2019	9 inches bgs	<0.00100	<0.00100	<0.00100	<0.00200	<0.00100	<0.00200	<25.5	<25.5	<25.5	<25.5	403
ESW-5 @ 6"	10/17/2019	6 inches bgs	<0.00103	<0.00103	<0.00103	<0.00206	<0.00103	<0.00206	<25.8	<25.8	<25.8	<25.8	2,350
SSW-6 @ 4"	10/17/2019	4 inches bgs	<0.00111	<0.00111	<0.00111	<0.00222	<0.00111	<0.00222	<27.8	<27.8	<27.8	<27.8	2.51
ESW-13 @ 9"	10/17/2019	9 inches bgs	<0.00106	<0.00106	<0.00106	<0.00213	<0.00106	<0.00213	<26.6	<26.6	<26.6	<26.6	6.72
WSW-16 @ 6"	10/17/2019	6 inches bgs	<0.00112	<0.00112	<0.00112	<0.00225	<0.00112	<0.00225	<28.1	<28.1	<28.1	<28.1	2.84
WSW-7 @ 3"	10/17/2019	3 inches bgs	<0.00104	<0.00104	<0.00104	<0.00208	<0.00104	<0.00208	<26.0	<26.0	<26.0	<26.0	14,100
SSW-19 @ 10"	10/17/2019	10 inches bgs	<0.00109	<0.00109	<0.00109	<0.00217	<0.00109	<0.00217	<27.2	<27.2	<27.2	<27.2	156
WSW-20 @ 9"	10/17/2019	9 inches bgs	<0.00111	<0.00111	<0.00111	<0.00222	<0.00111	<0.00222	<27.8	<27.8	<27.8	<27.8	134
F-26 @ 1.5'	10/17/2019	1.5 feet bgs	<0.00115	<0.00115	<0.00115	<0.00230	<0.00115	<0.00230	<28.7	<28.7	<28.7	<28.7	18.6
ESW-18 @ 9"	10/17/2019	9 inches bgs	<0.00110	<0.00110	<0.00110	<0.00220	<0.00110	<0.00220	<27.5	<27.5	<27.5	<27.5	820
ESW-21 @ 4"	10/17/2019	4 inches bgs	<0.00106	<0.00106	<0.00106	<0.00213	<0.00106	<0.00213	<26.6	<26.6	<26.6	<26.6	281
ESW-22 @ 5"	10/17/2019	5 inches bgs	<0.00109	<0.00109	<0.00109	<0.00217	<0.00109	<0.00217	<27.2	<27.2	<27.2	<27.2	159
NSW-23 @ 5"	10/17/2019	5 inches bgs	<0.00106	<0.00106	<0.00106	<0.00213	<0.00106	<0.00213	<26.6	<26.6	<26.6	<26.6	19.9
SSW-24 @ 5"	10/17/2019	5 inches bgs	<0.00108	<0.00108	<0.00108	<0.00215	<0.00108	<0.00215	<26.9	<26.9	<26.9	<26.9	223

TABLE 1
CONCENTRATIONS OF BTEX, TPH, AND CHLORIDE IN SOIL

COG JACK FEDERAL #004H
COG OPERATING, LLC
EDDY COUNTY, NM
Incident ID NAB1926742112
NMOCD REFERENCE 2RP-5623

SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH (feet)	Methods: EPA SW 846-8021B, 5030						Method: SW 846-8015M				Method: E 300.0
			BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	m,p XYLENE (mg/kg)	o XYLENE (mg/kg)	TOTAL BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	TOTAL TPH (mg/kg)	CHLORIDE (mg/kg)
NMOCD Regulatory Guideline			10	-	-	-	-	50	-	-	-	100	600
WSW-25 @ 5"	10/17/2019	5 inches bgs	<0.00105	<0.00105	<0.00105	<0.00211	<0.00105	<0.00211	<26.3	<26.3	<26.3	<26.3	52.8
WSW-7A @ 3"	12/19/2019	3 inches bgs	<0.00112	<0.00112	<0.00112	<0.00225	<0.00112	<0.00225	<28.1	<28.1	<28.1	<28.1	413
ESW-5A @ 6"	12/19/2019	6 inches bgs	<0.00109	<0.00109	<0.00109	<0.00217	<0.00109	<0.00217	<27.2	<27.2	<27.2	<27.2	148
ESW-18A @ 9"	12/19/2019	9 inches bgs	<0.00115	<0.00115	<0.00115	<0.00230	<0.00115	<0.00230	<28.7	<28.7	<28.7	<28.7	425

Appendix A

Photographic Documentation



Photographic Documentation

Client: COG Operating, LLC / Ready Oilfield Serv.
Project Name: COG Jack Federal #004H (Flowline)

Prepared by: TRC Environmental Corp.
Location: Lea County, New Mexico

Photograph No. 1

Date:
August 14, 2019

Direction:
Looking west

Description:
Initial release
response.





Photographic Documentation

Client: COG Operating, LLC / Ready Oilfield Serv.
Project Name: COG Jack Federal #004H (Flowline)

Prepared by: TRC Environmental Corp.
Location: Lea County, New Mexico

Photograph No. 2

Date:
August 15, 2019

Direction:
Looking north

Description:
Area of impact
prior to excavation
activities.





Photographic Documentation

Client: COG Operating, LLC / Ready Oilfield Serv.
Project Name: COG Jack Federal #004H (Flowline)

Prepared by: TRC Environmental Corp.
Location: Lea County, New Mexico

Photograph No. 3

Date:
August 19, 2019

Direction:
Looking north

Description:
Area of impact
following initial
excavation
activities.





Photographic Documentation

Client: COG Operating, LLC / Ready Oilfield Serv.
Project Name: COG Jack Federal #004H (Flowline)

Prepared by: TRC Environmental Corp.
Location: Lea County, New Mexico

Photograph No. 4

Date:
August 19, 2019

Direction:
Looking north

Description:
Area of impact
following initial
excavation
activities.





Photographic Documentation

Client: COG Operating, LLC / Ready Oilfield Serv.
Project Name: COG Jack Federal #004H (Flowline)

Prepared by: TRC Environmental Corp.
Location: Lea County, New Mexico

Photograph No. 5

Date:
December 19, 2019

Direction:
Looking southeast

Description:
Following final
excavation and
sampling activities
at the Site.



19Dec19 15:01 Ad-hoc
Carlsbad, NM 88220, United States © 19-Dec-19 15:01:53



Photographic Documentation

Client: COG Operating, LLC / Ready Oilfield Serv.
Project Name: COG Jack Federal #004H (Flowline)

Prepared by: TRC Environmental Corp.
Location: Lea County, New Mexico

Photograph No. 6

Date:
May 8, 2020

Direction:
Looking southwest

Description:
Backfill activities
completed.



WGS84 ±95ft 32.09140, -104.23267 N 3260 °T SW252

08May20 10:34 Ad-hoc
Carlsbad, NM 88220, United States © 08-May-20 10:34:49

Appendix B

Depth to Groundwater Information



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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)
No records found.

PLSS Search:

Section(s): 31 **Township:** 25S **Range:** 27E

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

6/10/20 11:18 AM

WATER COLUMN/ AVERAGE
DEPTH TO WATER



New Mexico Office of the State Engineer Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)							
		(quarters are smallest to largest)		(NAD83 UTM in meters)					
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
NA	C 04079 POD1	1	2	3	33	25S	27E	575658	3550092
x									
Driller License: 1690		Driller Company: VISION RESOURCES, INC							
Driller Name: JASON MALEY									
Drill Start Date: 05/21/2018		Drill Finish Date: 05/22/2018		Plug Date:					
Log File Date: 06/25/2018		PCW Rcv Date:		Source: Shallow					
Pump Type:		Pipe Discharge Size:		Estimated Yield: 90 GPM					
Casing Size: 6.00		Depth Well: 226 feet		Depth Water: 20 feet					
x									
Water Bearing Stratifications:		Top	Bottom	Description					
		0	30	Sandstone/Gravel/Conglomerate					
		30	45	Sandstone/Gravel/Conglomerate					
		45	160	Sandstone/Gravel/Conglomerate					
x									
Casing Perforations:		Top	Bottom						
		2	225						
x									

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

5/13/20 11:53 AM

POINT OF DIVERSION SUMMARY

Appendix C

Chloride Field Test Results

CHLORIDE FIELD TEST RESULTS

COG JACK FEDERAL #004H
COG OPERATING, LLC
EDDY COUNTY, NM
Incident ID NAB1926742112
NMOCD REFERENCE 2RP-5623

SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH (feet)	FIELD SCREEN CHLORIDE (mg/kg)
F-1 @ Sur	8/17/2019	Surface	ND
F-2 @ Sur	8/17/2019	Surface	212
F-3 @ Sur	8/17/2019	Surface	536
F-4 @ Sur	8/17/2019	Surface	ND
F-5 @ 1'	8/17/2019	1' bgs	ND
F-6 @ 2'	8/17/2019	2' bgs	106
WSW-6 @ 2.5'	8/17/2019	2.5' bgs	ND
ESW-6 @ 1'	8/19/2019	1' bgs	ND
F-7 @ 1'	8/19/2019	1' bgs	ND
F-8 @ Sur	8/17/2019	Surface	ND
F-9 @ Sur	8/17/2019	Surface	ND
F-10 @ Sur	8/17/2019	Surface	ND
F-11 @ 4'	8/17/2019	4' bgs	ND
WSW-11 @ 2.5'	8/17/2019	2.5' bgs	ND
NSW-11 @ 2.5'	8/17/2019	2.5 bgs	ND
ESW-11 @ 2.5'	8/17/2019	2.5' bgs	376
F-12 @ 9"	8/17/2019	9 inches bgs	ND
F-13 @ 1.5'	8/17/2019	1.5' bgs	ND
SSW-13 @ 6"	8/17/2019	6 inches bgs	ND
NSW-13 @ 6"	8/17/2019	6 inches bgs	ND
F-14 @ 9"	8/17/2019	9 inches bgs	ND
F-15 @ 2'	8/17/2019	2' bgs	ND
NSW-15 @ 6"	8/17/2019	6" inches bgs	ND
SSW-15 @ 1'	8/17/2019	1' bgs	ND
F-16 @ 2'	8/17/2019	2' bgs	ND
NSW-16 @ 6"	8/17/2019	6 inches bgs	212
SSW-16 @ 1'	8/17/2019	1' bgs	ND
F-17 @ Sur	8/17/2019	Surface	80
F-18 @ 1.5'	8/17/2019	1.5' bgs	80
F-19 @ 2'	8/17/2019	2' bgs	536
NSW-19 @ 1'	8/17/2019	1' bgs	130
F-20 @ 1.5'	8/17/2019	1.5' bgs	ND
SSW-20 @ 1'	8/17/2019	1' bgs	108
F-21 @ 9"	8/19/2019	9 inches bgs	212
F-22 @ 9"	8/19/2019	9 inches bgs	528
F-23 @ 9"	8/19/2019	9 inches bgs	212
F-24 @ 9"	8/19/2019	9 inches bgs	ND
F-25 @ 9"	8/19/2019	9 inches bgs	ND

Appendix D

Laboratory Analytical Reports

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



Analytical Report

Prepared for:

Curt Stanley
TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland, TX 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Location: Eddy County, NM
Lab Order Number: 9H21018



NELAP/TCEQ # T104704516-18-9

Report Date: 09/05/19

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
F-1 @ Sur	9H21018-01	Soil	08/17/19 14:00	08-21-2019 14:59
F-2 @ Sur	9H21018-02	Soil	08/17/19 14:10	08-21-2019 14:59
F-3 @ Sur	9H21018-03	Soil	08/17/19 14:15	08-21-2019 14:59
F-4 @ Sur	9H21018-04	Soil	08/17/19 14:20	08-21-2019 14:59
F-5 @ 1'	9H21018-05	Soil	08/17/19 14:25	08-21-2019 14:59
F-6 @ 2'	9H21018-06	Soil	08/17/19 14:30	08-21-2019 14:59
WSW-6 @ 2.5'	9H21018-07	Soil	08/17/19 14:35	08-21-2019 14:59
F-8 @ Sur	9H21018-08	Soil	08/17/19 14:40	08-21-2019 14:59
F-9 @ Sur	9H21018-09	Soil	08/17/19 14:45	08-21-2019 14:59
F-10 @ Sur	9H21018-10	Soil	08/17/19 14:50	08-21-2019 14:59
F-11 @ 4'	9H21018-11	Soil	08/17/19 15:00	08-21-2019 14:59
WSW-11 @ 2.5'	9H21018-12	Soil	08/17/19 15:10	08-21-2019 14:59
NSW-11 @ 2.5'	9H21018-13	Soil	08/17/19 15:20	08-21-2019 14:59
ESW-11 @ 2.5'	9H21018-14	Soil	08/17/19 15:25	08-21-2019 14:59
F-12 @ 9"	9H21018-15	Soil	08/17/19 15:35	08-21-2019 14:59
F-13 @ 1.5'	9H21018-16	Soil	08/17/19 15:45	08-21-2019 14:59
SSW-13 @ 6"	9H21018-17	Soil	08/17/19 15:50	08-21-2019 14:59
NSW-13 @ 6"	9H21018-18	Soil	08/17/19 16:00	08-21-2019 14:59
F-14 @ 9"	9H21018-19	Soil	08/17/19 16:05	08-21-2019 14:59
F-15 @ 2'	9H21018-20	Soil	08/17/19 16:10	08-21-2019 14:59
NSW-15 @ 6"	9H21018-21	Soil	08/17/19 16:20	08-21-2019 14:59
SSW-15 @ 1'	9H21018-22	Soil	08/17/19 16:25	08-21-2019 14:59
F-16 @ 2'	9H21018-23	Soil	08/17/19 16:30	08-21-2019 14:59
NSW-16 @ 6"	9H21018-24	Soil	08/17/19 16:35	08-21-2019 14:59
SSW-16 @ 1'	9H21018-25	Soil	08/17/19 16:40	08-21-2019 14:59
F-17 @ Sur	9H21018-26	Soil	08/17/19 16:45	08-21-2019 14:59
F-18 @ 1.5'	9H21018-27	Soil	08/17/19 16:50	08-21-2019 14:59
F-19 @ 2'	9H21018-28	Soil	08/17/19 16:55	08-21-2019 14:59
SSW-20 @ 1'	9H21018-29	Soil	08/17/19 17:00	08-21-2019 14:59
NSW-19 @ 1'	9H21018-30	Soil	08/17/19 17:05	08-21-2019 14:59
F-20 @ 1.5'	9H21018-31	Soil	08/17/19 17:10	08-21-2019 14:59
ESW-6 @ 1'	9H21018-32	Soil	08/19/19 14:10	08-21-2019 14:59
F-7 @ 1'	9H21018-33	Soil	08/19/19 14:20	08-21-2019 14:59
F-21 @ 9"	9H21018-34	Soil	08/19/19 14:25	08-21-2019 14:59

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
F-22 @ 9"	9H21018-35	Soil	08/19/19 14:30	08-21-2019 14:59
F-23 @ 9"	9H21018-36	Soil	08/19/19 14:35	08-21-2019 14:59
F-24 @ 9"	9H21018-37	Soil	08/19/19 14:40	08-21-2019 14:59
F-25 @ 9"	9H21018-38	Soil	08/19/19 14:50	08-21-2019 14:59

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-1 @ Sur
9H21018-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00101	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Toluene	0.00214	0.00101	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Ethylbenzene	0.00503	0.00101	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (p/m)	0.0124	0.00202	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (o)	0.00560	0.00101	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		90.5 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		88.5 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	23.7	5.05	mg/kg dry	5	P9H2907	08/29/19	08/30/19	EPA 300.0	
% Moisture	1.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	25.3	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	25.3	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	25.3	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		121 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		124 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.3	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-2 @ Sur
9H21018-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00100	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Toluene	ND	0.00100	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.0 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		92.1 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	204	5.00	mg/kg dry	5	P9H2907	08/29/19	08/30/19	EPA 300.0	
% Moisture	ND	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	25.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	25.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	25.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		111 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		110 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.0	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-3 @ Sur
9H21018-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00104	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Toluene	ND	0.00104	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Ethylbenzene	ND	0.00104	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00208	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (o)	ND	0.00104	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.9 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		96.8 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	413	5.21	mg/kg dry	5	P9H2907	08/29/19	08/30/19	EPA 300.0	
% Moisture	4.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		126 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		132 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-4 @ Sur
9H21018-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00105	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Toluene	0.00113	0.00105	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Ethylbenzene	0.00625	0.00105	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (p/m)	0.0102	0.00211	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (o)	0.00382	0.00105	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.0 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		95.9 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	52.0	10.5	mg/kg dry	10	P9H2907	08/29/19	08/30/19	EPA 300.0	
% Moisture	5.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.3	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		115 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		119 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-5 @ 1'
9H21018-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00105	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Toluene	ND	0.00105	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Ethylbenzene	0.00275	0.00105	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (p/m)	0.00421	0.00211	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (o)	0.00291	0.00105	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		86.9 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		99.1 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	44.2	1.05	mg/kg dry	1	P9H2907	08/29/19	08/30/19	EPA 300.0	
% Moisture	5.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.3	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		130 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		139 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-6 @ 2'
9H21018-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00104	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Toluene	0.00114	0.00104	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Ethylbenzene	0.00216	0.00104	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (p/m)	0.00506	0.00208	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (o)	0.00267	0.00104	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		<i>87.1 %</i>		<i>75-125</i>	<i>P9H2207</i>	<i>08/22/19</i>	<i>08/23/19</i>	<i>EPA 8021B</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>112 %</i>		<i>75-125</i>	<i>P9H2207</i>	<i>08/22/19</i>	<i>08/23/19</i>	<i>EPA 8021B</i>	

General Chemistry Parameters by EPA / Standard Methods

Chloride	168	1.04	mg/kg dry	1	P9H2910	08/29/19	08/30/19	EPA 300.0	
% Moisture	4.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		<i>122 %</i>		<i>70-130</i>	<i>P9H2310</i>	<i>08/23/19</i>	<i>08/25/19</i>	<i>TPH 8015M</i>	
<i>Surrogate: o-Terphenyl</i>		<i>130 %</i>		<i>70-130</i>	<i>P9H2310</i>	<i>08/23/19</i>	<i>08/25/19</i>	<i>TPH 8015M</i>	
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

TRC Solutions- Midland, Texas
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Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

WSW-6 @ 2.5'
9H21018-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00112	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Toluene	0.00138	0.00112	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Ethylbenzene	0.00337	0.00112	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (p/m)	0.00738	0.00225	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (o)	0.00496	0.00112	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		104 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		86.6 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	5.85	1.12	mg/kg dry	1	P9H2910	08/29/19	08/30/19	EPA 300.0	
% Moisture	11.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.1	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		128 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		137 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-8 @ Sur
9H21018-08 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00109	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Toluene	0.00650	0.00109	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Ethylbenzene	0.00989	0.00109	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (p/m)	0.0242	0.00217	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (o)	0.0109	0.00109	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		88.3 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		95.2 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	32.0	1.09	mg/kg dry	1	P9H2910	08/29/19	08/30/19	EPA 300.0	
% Moisture	8.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.2	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		110 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		119 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-9 @ Sur
9H21018-09 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00108	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Toluene	0.00178	0.00108	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Ethylbenzene	0.00526	0.00108	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (p/m)	0.0101	0.00215	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (o)	0.00468	0.00108	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		86.4 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		105 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	81.6	1.08	mg/kg dry	1	P9H2910	08/29/19	08/30/19	EPA 300.0	
% Moisture	7.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.9	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		125 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		128 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-10 @ Sur
9H21018-10 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00108	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Toluene	ND	0.00108	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Ethylbenzene	0.00159	0.00108	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (p/m)	0.00331	0.00215	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (o)	0.00117	0.00108	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		88.5 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		97.4 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	47.4	10.8	mg/kg dry	10	P9H2910	08/29/19	08/30/19	EPA 300.0	
% Moisture	7.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.9	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		119 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		127 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-11 @ 4'
9H21018-11 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00103	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Toluene	ND	0.00103	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Ethylbenzene	ND	0.00103	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00206	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Xylene (o)	ND	0.00103	mg/kg dry	1	P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		118 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		84.6 %	75-125		P9H2207	08/22/19	08/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	36.8	1.03	mg/kg dry	1	P9H2910	08/29/19	08/30/19	EPA 300.0	
% Moisture	3.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	25.8	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		116 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		127 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

WSW-11 @ 2.5'

9H21018-12 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00104	mg/kg dry	1	P9H2207	08/22/19	08/24/19	EPA 8021B	
Toluene	0.00372	0.00104	mg/kg dry	1	P9H2207	08/22/19	08/24/19	EPA 8021B	
Ethylbenzene	0.00759	0.00104	mg/kg dry	1	P9H2207	08/22/19	08/24/19	EPA 8021B	
Xylene (p/m)	0.0136	0.00208	mg/kg dry	1	P9H2207	08/22/19	08/24/19	EPA 8021B	
Xylene (o)	0.00759	0.00104	mg/kg dry	1	P9H2207	08/22/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		85.0 %	75-125		P9H2207	08/22/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		106 %	75-125		P9H2207	08/22/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	34.2	1.04	mg/kg dry	1	P9H2910	08/29/19	08/30/19	EPA 300.0	
% Moisture	4.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		111 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		119 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

NSW-11 @ 2.5'
9H21018-13 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P9H2207	08/22/19	08/24/19	EPA 8021B	
Toluene	0.00684	0.00106	mg/kg dry	1	P9H2207	08/22/19	08/24/19	EPA 8021B	
Ethylbenzene	0.0120	0.00106	mg/kg dry	1	P9H2207	08/22/19	08/24/19	EPA 8021B	
Xylene (p/m)	0.0296	0.00213	mg/kg dry	1	P9H2207	08/22/19	08/24/19	EPA 8021B	
Xylene (o)	0.0108	0.00106	mg/kg dry	1	P9H2207	08/22/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.7 %	75-125		P9H2207	08/22/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		119 %	75-125		P9H2207	08/22/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	32.7	1.06	mg/kg dry	1	P9H2910	08/29/19	08/30/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		122 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		132 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

ESW-11 @ 2.5'
9H21018-14 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00104	mg/kg dry	1	P9H2207	08/22/19	08/24/19	EPA 8021B	
Toluene	ND	0.00104	mg/kg dry	1	P9H2207	08/22/19	08/24/19	EPA 8021B	
Ethylbenzene	ND	0.00104	mg/kg dry	1	P9H2207	08/22/19	08/24/19	EPA 8021B	
Xylene (p/m)	ND	0.00208	mg/kg dry	1	P9H2207	08/22/19	08/24/19	EPA 8021B	
Xylene (o)	ND	0.00104	mg/kg dry	1	P9H2207	08/22/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		92.3 %	75-125		P9H2207	08/22/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		114 %	75-125		P9H2207	08/22/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	246	1.04	mg/kg dry	1	P9H2910	08/29/19	08/30/19	EPA 300.0	
% Moisture	4.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		123 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		134 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-12 @ 9"
9H21018-15 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00105	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Toluene	0.00157	0.00105	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	0.00199	0.00105	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	0.00539	0.00211	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	0.00305	0.00105	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		85.1 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		108 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	4.55	1.05	mg/kg dry	1	P9H2910	08/29/19	08/30/19	EPA 300.0	
% Moisture	5.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.3	mg/kg dry	1	P9H2310	08/23/19	08/26/19	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P9H2310	08/23/19	08/26/19	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P9H2310	08/23/19	08/26/19	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		128 %	70-130		P9H2310	08/23/19	08/26/19	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		139 %	70-130		P9H2310	08/23/19	08/26/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	08/23/19	08/26/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-13 @ 1.5'
9H21018-16 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00100	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Toluene	0.00560	0.00100	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	0.0105	0.00100	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	0.0235	0.00200	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	0.00882	0.00100	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.5 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		114 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	8.83	1.00	mg/kg dry	1	P9H2910	08/29/19	08/30/19	EPA 300.0	
% Moisture	ND	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	25.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	25.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	25.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		122 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		129 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.0	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

SSW-13 @ 6"
9H21018-17 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Toluene	ND	0.00106	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	0.00136	0.00106	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	0.00278	0.00213	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.0 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		101 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	17.5	1.06	mg/kg dry	1	P9H2910	08/29/19	08/30/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		112 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		117 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

NSW-13 @ 6"
9H21018-18 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00100	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Toluene	0.00208	0.00100	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	0.00649	0.00100	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	0.0135	0.00200	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	0.00493	0.00100	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		112 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		91.5 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	38.4	1.00	mg/kg dry	1	P9H2910	08/29/19	08/30/19	EPA 300.0	
% Moisture	ND	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	25.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	25.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	25.0	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		121 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		129 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.0	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-14 @ 9"
9H21018-19 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Toluene	0.00511	0.00106	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	0.00757	0.00106	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	0.0226	0.00213	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	0.00744	0.00106	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		112 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.8 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	6.33	1.06	mg/kg dry	1	P9H2910	08/29/19	08/31/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		130 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		138 %	70-130		P9H2310	08/23/19	08/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-15 @ 2'
9H21018-20 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00109	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Toluene	ND	0.00109	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	ND	0.00109	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	ND	0.00217	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	ND	0.00109	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.2 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		97.3 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	59.0	1.09	mg/kg dry	1	P9H2910	08/29/19	08/31/19	EPA 300.0	
% Moisture	8.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.2	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		122 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		128 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	08/22/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

NSW-15 @ 6"
9H21018-21 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00108	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Toluene	0.00212	0.00108	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	0.00543	0.00108	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	0.00929	0.00215	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	0.00380	0.00108	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		89.7 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		116 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	39.7	1.08	mg/kg dry	1	P9H2910	08/29/19	08/31/19	EPA 300.0	
% Moisture	7.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.9	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		113 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		123 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	08/22/19	08/25/19	calc	

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

SSW-15 @ 1'
9H21018-22 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00103	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Toluene	0.00421	0.00103	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	0.00732	0.00103	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	0.0134	0.00206	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	0.00637	0.00103	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		108 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		84.5 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	13.7	1.03	mg/kg dry	1	P9H2910	08/29/19	08/31/19	EPA 300.0	
% Moisture	3.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	25.8	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		116 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		124 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	08/22/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-16 @ 2'
9H21018-23 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00114	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Toluene	0.00152	0.00114	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	0.00169	0.00114	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	0.00342	0.00227	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	ND	0.00114	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		85.2 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		104 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	29.3	1.14	mg/kg dry	1	P9H2910	08/29/19	08/31/19	EPA 300.0	
% Moisture	12.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.4	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C12-C28	ND	28.4	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C28-C35	ND	28.4	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		126 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		137 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	28.4	mg/kg dry	1	[CALC]	08/22/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

NSW-16 @ 6"
9H21018-24 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00110	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Toluene	ND	0.00110	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	ND	0.00110	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	ND	0.00220	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	ND	0.00110	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		102 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.1 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	345	1.10	mg/kg dry	1	P9H2910	08/29/19	08/31/19	EPA 300.0	
% Moisture	9.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.5	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C12-C28	ND	27.5	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C28-C35	ND	27.5	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		115 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		127 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.5	mg/kg dry	1	[CALC]	08/22/19	08/25/19	calc	

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

SSW-16 @ 1'
9H21018-25 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Toluene	ND	0.00106	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	ND	0.00106	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	ND	0.00213	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P9H2304	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		99.8 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-125		P9H2304	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	36.4	1.06	mg/kg dry	1	P9H2910	08/29/19	08/31/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		120 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		132 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	08/22/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-17 @ Sur
9H21018-26 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Toluene	0.0253	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	0.0418	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	0.110	0.00200	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	0.0367	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		120 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		92.9 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	162	10.3	mg/kg dry	10	P9H3004	08/30/19	08/31/19	EPA 300.0	
% Moisture	3.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	25.8	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		119 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		123 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	08/22/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-18 @ 1.5'
9H21018-27 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Toluene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		113 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		89.3 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	140	1.12	mg/kg dry	1	P9H3004	08/30/19	08/31/19	EPA 300.0	
% Moisture	11.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.1	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		115 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		129 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	08/22/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-19 @ 2'
9H21018-28 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Toluene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	0.00153	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	0.00309	0.00200	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	0.00316	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		111 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		92.8 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	563	1.12	mg/kg dry	1	P9H3004	08/30/19	08/31/19	EPA 300.0	
% Moisture	11.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.1	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		119 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		131 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	08/22/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

SSW-20 @ 1'
9H21018-29 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Toluene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	0.00248	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	0.00613	0.00200	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	0.00389	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		107 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.5 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	78.5	1.06	mg/kg dry	1	P9H3004	08/30/19	08/31/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		128 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		140 %	70-130		P9H2217	08/22/19	08/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	08/22/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

NSW-19 @ 1'
9H21018-30 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Toluene	0.00621	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	0.00750	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	0.0165	0.00200	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	0.00547	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.4 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	104	1.06	mg/kg dry	1	P9H3004	08/30/19	08/31/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		119 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		131 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-20 @ 1.5'
9H21018-31 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Toluene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	0.00249	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	0.00441	0.00200	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	0.00130	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		106 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		86.5 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	14.1	1.10	mg/kg dry	1	P9H3004	08/30/19	08/31/19	EPA 300.0	
% Moisture	9.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.5	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	27.5	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	27.5	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		129 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		146 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	27.5	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

ESW-6 @ 1'
9H21018-32 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Toluene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		96.6 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.3 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	3.27	1.05	mg/kg dry	1	P9H3004	08/30/19	08/31/19	EPA 300.0	
% Moisture	5.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.3	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		126 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		133 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-7 @ 1'
9H21018-33 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Toluene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		108 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		92.5 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	26.6	1.06	mg/kg dry	1	P9H3004	08/30/19	08/31/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		119 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		118 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-21 @ 9"
9H21018-34 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Toluene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		113 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.1 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	236	1.08	mg/kg dry	1	P9H3004	08/30/19	08/31/19	EPA 300.0	
% Moisture	7.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.9	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		123 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		135 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-22 @ 9"
9H21018-35 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Toluene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		107 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		89.7 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	435	1.04	mg/kg dry	1	P9H3004	08/30/19	08/31/19	EPA 300.0	
% Moisture	4.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.0	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.0	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		128 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		131 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-23 @ 9"
9H21018-36 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Toluene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	0.00113	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		104 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		82.0 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	219	1.03	mg/kg dry	1	P9H3004	08/30/19	09/01/19	EPA 300.0	
% Moisture	3.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	25.8	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		122 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		130 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-24 @ 9"
9H21018-37 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Toluene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		102 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		91.5 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	133	1.04	mg/kg dry	1	P9I0403	09/04/19	09/05/19	EPA 300.0	
% Moisture	4.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.0	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	26.0	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		120 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		125 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-25 @ 9"
9H21018-38 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Toluene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/L	1	P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		92.0 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		80.1 %	75-125		P9H2305	08/23/19	08/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	403	5.10	mg/kg dry	5	P9I0403	09/04/19	09/05/19	EPA 300.0	
% Moisture	2.0	0.1	%	1	P9H2205	08/22/19	08/22/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	25.5	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		120 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	
Surrogate: o-Terphenyl		119 %	70-130		P9H2311	08/23/19	08/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	08/23/19	08/25/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9H2207 - General Preparation (GC)

Blank (P9H2207-BLK1)

Prepared: 08/22/19 Analyzed: 08/23/19

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	0.102		"	0.120		84.9	75-125			
Surrogate: 4-Bromofluorobenzene	0.130		"	0.120		109	75-125			

LCS (P9H2207-BS1)

Prepared: 08/22/19 Analyzed: 08/23/19

Benzene	0.0968	0.00100	mg/kg wet	0.100		96.8	70-130			
Toluene	0.113	0.00100	"	0.100		113	70-130			
Ethylbenzene	0.122	0.00100	"	0.100		122	70-130			
Xylene (p/m)	0.209	0.00200	"	0.200		104	70-130			
Xylene (o)	0.108	0.00100	"	0.100		108	70-130			
Surrogate: 1,4-Difluorobenzene	0.144		"	0.120		120	75-125			
Surrogate: 4-Bromofluorobenzene	0.142		"	0.120		118	75-125			

LCS Dup (P9H2207-BSD1)

Prepared: 08/22/19 Analyzed: 08/23/19

Benzene	0.0901	0.00100	mg/kg wet	0.100		90.1	70-130	7.23	20	
Toluene	0.106	0.00100	"	0.100		106	70-130	5.73	20	
Ethylbenzene	0.111	0.00100	"	0.100		111	70-130	9.34	20	
Xylene (p/m)	0.191	0.00200	"	0.200		95.3	70-130	8.97	20	
Xylene (o)	0.0972	0.00100	"	0.100		97.2	70-130	10.1	20	
Surrogate: 4-Bromofluorobenzene	0.140		"	0.120		116	75-125			
Surrogate: 1,4-Difluorobenzene	0.137		"	0.120		114	75-125			

Calibration Blank (P9H2207-CCB1)

Prepared: 08/22/19 Analyzed: 08/23/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.105		"	0.120		87.8	75-125			
Surrogate: 4-Bromofluorobenzene	0.124		"	0.120		103	75-125			

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9H2207 - General Preparation (GC)

Calibration Blank (P9H2207-CCB2)

Prepared: 08/22/19 Analyzed: 08/23/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.113		"	0.120		93.8	75-125			
Surrogate: 4-Bromofluorobenzene	0.126		"	0.120		105	75-125			

Calibration Blank (P9H2207-CCB3)

Prepared: 08/22/19 Analyzed: 08/24/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.0973		"	0.120		81.1	75-125			
Surrogate: 4-Bromofluorobenzene	0.116		"	0.120		96.3	75-125			

Calibration Check (P9H2207-CCV1)

Prepared: 08/22/19 Analyzed: 08/23/19

Benzene	0.0901	0.00100	mg/kg wet	0.100		90.1	80-120			
Toluene	0.103	0.00100	"	0.100		103	80-120			
Ethylbenzene	0.114	0.00100	"	0.100		114	80-120			
Xylene (p/m)	0.194	0.00200	"	0.200		96.8	80-120			
Xylene (o)	0.102	0.00100	"	0.100		102	80-120			
Surrogate: 1,4-Difluorobenzene	0.140		"	0.120		117	75-125			
Surrogate: 4-Bromofluorobenzene	0.140		"	0.120		116	75-125			

Calibration Check (P9H2207-CCV2)

Prepared: 08/22/19 Analyzed: 08/23/19

Benzene	0.100	0.00100	mg/kg wet	0.100		100	80-120			
Toluene	0.102	0.00100	"	0.100		102	80-120			
Ethylbenzene	0.0986	0.00100	"	0.100		98.6	80-120			
Xylene (p/m)	0.194	0.00200	"	0.200		96.9	80-120			
Xylene (o)	0.108	0.00100	"	0.100		108	80-120			
Surrogate: 4-Bromofluorobenzene	0.135		"	0.120		113	75-125			
Surrogate: 1,4-Difluorobenzene	0.139		"	0.120		115	75-125			

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9H2207 - General Preparation (GC)

Calibration Check (P9H2207-CCV3)

Prepared: 08/22/19 Analyzed: 08/24/19

Benzene	0.0857	0.00100	mg/kg wet	0.100		85.7	80-120			
Toluene	0.0876	0.00100	"	0.100		87.6	80-120			
Ethylbenzene	0.0808	0.00100	"	0.100		80.8	80-120			
Xylene (p/m)	0.160	0.00200	"	0.200		80.1	80-120			
Xylene (o)	0.0916	0.00100	"	0.100		91.6	80-120			
Surrogate: 4-Bromofluorobenzene	0.108		"	0.120		90.0	75-125			
Surrogate: 1,4-Difluorobenzene	0.132		"	0.120		110	75-125			

Matrix Spike (P9H2207-MS1)

Source: 9H21018-01

Prepared: 08/22/19 Analyzed: 08/24/19

Benzene	0.0423	0.00101	mg/kg dry	0.101	ND	41.9	80-120			QM-05
Toluene	0.0558	0.00101	"	0.101	0.00214	53.1	80-120			QM-05
Ethylbenzene	0.0757	0.00101	"	0.101	0.00503	70.0	80-120			QM-05
Xylene (p/m)	0.133	0.00202	"	0.202	0.0124	59.7	80-120			QM-05
Xylene (o)	0.0581	0.00101	"	0.101	0.00560	52.0	80-120			QM-05
Surrogate: 4-Bromofluorobenzene	0.128		"	0.121		106	75-125			
Surrogate: 1,4-Difluorobenzene	0.135		"	0.121		111	75-125			

Matrix Spike Dup (P9H2207-MSD1)

Source: 9H21018-01

Prepared: 08/22/19 Analyzed: 08/24/19

Benzene	0.0370	0.00101	mg/kg dry	0.101	ND	36.6	80-120	13.4	20	QM-05
Toluene	0.0465	0.00101	"	0.101	0.00214	43.9	80-120	19.0	20	QM-05
Ethylbenzene	0.0718	0.00101	"	0.101	0.00503	66.1	80-120	5.79	20	QM-05
Xylene (p/m)	0.124	0.00202	"	0.202	0.0124	55.3	80-120	7.65	20	QM-05
Xylene (o)	0.0563	0.00101	"	0.101	0.00560	50.2	80-120	3.44	20	QM-05
Surrogate: 1,4-Difluorobenzene	0.130		"	0.121		108	75-125			
Surrogate: 4-Bromofluorobenzene	0.126		"	0.121		104	75-125			

Batch P9H2304 - General Preparation (GC)

Blank (P9H2304-BLK1)

Prepared: 08/23/19 Analyzed: 08/24/19

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	0.127		"	0.120		106	75-125			
Surrogate: 1,4-Difluorobenzene	0.109		"	0.120		90.6	75-125			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9H2304 - General Preparation (GC)

LCS (P9H2304-BS1)		Prepared: 08/23/19 Analyzed: 08/24/19								
Benzene	0.0982	0.00100	mg/kg wet	0.100		98.2	70-130			
Toluene	0.0942	0.00100	"	0.100		94.2	70-130			
Ethylbenzene	0.119	0.00100	"	0.100		119	70-130			
Xylene (p/m)	0.179	0.00200	"	0.200		89.4	70-130			
Xylene (o)	0.103	0.00100	"	0.100		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.101		"	0.120		84.4	75-125			
Surrogate: 1,4-Difluorobenzene	0.122		"	0.120		102	75-125			

LCS Dup (P9H2304-BSD1)		Prepared: 08/23/19 Analyzed: 08/24/19								
Benzene	0.0973	0.00100	mg/kg wet	0.100		97.3	70-130	0.962	20	
Toluene	0.0908	0.00100	"	0.100		90.8	70-130	3.71	20	
Ethylbenzene	0.122	0.00100	"	0.100		122	70-130	2.08	20	
Xylene (p/m)	0.183	0.00200	"	0.200		91.7	70-130	2.50	20	
Xylene (o)	0.103	0.00100	"	0.100		103	70-130	0.146	20	
Surrogate: 1,4-Difluorobenzene	0.122		"	0.120		102	75-125			
Surrogate: 4-Bromofluorobenzene	0.106		"	0.120		88.7	75-125			

Calibration Blank (P9H2304-CCB1)		Prepared: 08/23/19 Analyzed: 08/24/19								
Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.110		"	0.120		91.3	75-125			
Surrogate: 4-Bromofluorobenzene	0.144		"	0.120		120	75-125			

Calibration Blank (P9H2304-CCB2)		Prepared: 08/23/19 Analyzed: 08/24/19								
Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.127		"	0.120		106	75-125			
Surrogate: 1,4-Difluorobenzene	0.110		"	0.120		91.9	75-125			

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

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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
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Batch P9H2304 - General Preparation (GC)

Calibration Blank (P9H2304-CCB3)

Prepared: 08/23/19 Analyzed: 08/24/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.102		"	0.120		85.3	75-125			
Surrogate: 4-Bromofluorobenzene	0.111		"	0.120		92.7	75-125			

Calibration Check (P9H2304-CCV1)

Prepared: 08/23/19 Analyzed: 08/24/19

Benzene	0.101	0.00100	mg/kg wet	0.100		101	80-120			
Toluene	0.0946	0.00100	"	0.100		94.6	80-120			
Ethylbenzene	0.0977	0.00100	"	0.100		97.7	80-120			
Xylene (p/m)	0.173	0.00200	"	0.200		86.7	80-120			
Xylene (o)	0.102	0.00100	"	0.100		102	80-120			
Surrogate: 4-Bromofluorobenzene	0.129		"	0.120		107	75-125			
Surrogate: 1,4-Difluorobenzene	0.133		"	0.120		111	75-125			

Calibration Check (P9H2304-CCV2)

Prepared: 08/23/19 Analyzed: 08/24/19

Benzene	0.0956	0.00100	mg/kg wet	0.100		95.6	80-120			
Toluene	0.0959	0.00100	"	0.100		95.9	80-120			
Ethylbenzene	0.0997	0.00100	"	0.100		99.7	80-120			
Xylene (p/m)	0.192	0.00200	"	0.200		96.0	80-120			
Xylene (o)	0.104	0.00100	"	0.100		104	80-120			
Surrogate: 1,4-Difluorobenzene	0.128		"	0.120		107	75-125			
Surrogate: 4-Bromofluorobenzene	0.115		"	0.120		95.8	75-125			

Calibration Check (P9H2304-CCV3)

Prepared: 08/23/19 Analyzed: 08/24/19

Benzene	0.107	0.00100	mg/kg wet	0.100		107	80-120			
Toluene	0.112	0.00100	"	0.100		112	80-120			
Ethylbenzene	0.110	0.00100	"	0.100		110	80-120			
Xylene (p/m)	0.211	0.00200	"	0.200		106	80-120			
Xylene (o)	0.118	0.00100	"	0.100		118	80-120			
Surrogate: 4-Bromofluorobenzene	0.138		"	0.120		115	75-125			
Surrogate: 1,4-Difluorobenzene	0.128		"	0.120		107	75-125			

Permian Basin Environmental Lab, L.P.

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Project Manager: Curt Stanley

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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
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Batch P9H2304 - General Preparation (GC)

Matrix Spike (P9H2304-MS1)		Source: 9H21018-15		Prepared: 08/23/19		Analyzed: 08/24/19				
Benzene	0.0592	0.00105	mg/kg dry	0.105	ND	56.2	80-120			QM-05
Toluene	0.0596	0.00105	"	0.105	0.00157	55.1	80-120			QM-05
Ethylbenzene	0.0725	0.00105	"	0.105	0.00199	66.9	80-120			QM-05
Xylene (p/m)	0.120	0.00211	"	0.211	0.00539	54.6	80-120			QM-05
Xylene (o)	0.0599	0.00105	"	0.105	0.00305	54.0	80-120			QM-05
Surrogate: 4-Bromofluorobenzene	0.127		"	0.126		101	75-125			
Surrogate: 1,4-Difluorobenzene	0.130		"	0.126		103	75-125			

Matrix Spike Dup (P9H2304-MSD1)		Source: 9H21018-15		Prepared: 08/23/19		Analyzed: 08/24/19				
Benzene	0.0495	0.00105	mg/kg dry	0.105	ND	47.0	80-120	17.8	20	QM-05
Toluene	0.0571	0.00105	"	0.105	0.00157	52.7	80-120	4.43	20	QM-05
Ethylbenzene	0.0715	0.00105	"	0.105	0.00199	66.0	80-120	1.34	20	QM-05
Xylene (p/m)	0.116	0.00211	"	0.211	0.00539	52.5	80-120	4.04	20	QM-05
Xylene (o)	0.0542	0.00105	"	0.105	0.00305	48.6	80-120	10.6	20	QM-05
Surrogate: 1,4-Difluorobenzene	0.140		"	0.126		111	75-125			
Surrogate: 4-Bromofluorobenzene	0.139		"	0.126		110	75-125			

Batch P9H2305 - General Preparation (GC)

Blank (P9H2305-BLK1)				Prepared: 08/23/19		Analyzed: 08/24/19				
Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	0.106		"	0.120		88.5	75-125			
Surrogate: 1,4-Difluorobenzene	0.102		"	0.120		84.8	75-125			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9H2305 - General Preparation (GC)

LCS (P9H2305-BS1)		Prepared: 08/23/19 Analyzed: 08/24/19								
Benzene	0.0989	0.00100	mg/L	0.100		98.9	70-130			
Toluene	0.109	0.00100	"	0.100		109	70-130			
Ethylbenzene	0.117	0.00100	"	0.100		117	70-130			
Xylene (p/m)	0.210	0.00200	"	0.200		105	70-130			
Xylene (o)	0.114	0.00100	"	0.100		114	70-130			
Surrogate: 4-Bromofluorobenzene	0.126		"	0.120		105	75-125			
Surrogate: 1,4-Difluorobenzene	0.129		"	0.120		108	75-125			

LCS Dup (P9H2305-BSD1)		Prepared: 08/23/19 Analyzed: 08/24/19								
Benzene	0.101	0.00100	mg/L	0.100		101	70-130	2.08	20	
Toluene	0.113	0.00100	"	0.100		113	70-130	3.50	20	
Ethylbenzene	0.118	0.00100	"	0.100		118	70-130	0.332	20	
Xylene (p/m)	0.217	0.00200	"	0.200		108	70-130	3.02	20	
Xylene (o)	0.115	0.00100	"	0.100		115	70-130	1.22	20	
Surrogate: 4-Bromofluorobenzene	0.138		"	0.120		115	75-125			
Surrogate: 1,4-Difluorobenzene	0.137		"	0.120		114	75-125			

Calibration Blank (P9H2305-CCB1)		Prepared: 08/23/19 Analyzed: 08/24/19								
Benzene	0.00		mg/L							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.111		"	0.120		92.7	75-125			
Surrogate: 1,4-Difluorobenzene	0.102		"	0.120		85.3	75-125			

Calibration Blank (P9H2305-CCB2)		Prepared: 08/23/19 Analyzed: 08/24/19								
Benzene	0.00		mg/L							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.126		"	0.120		105	75-125			
Surrogate: 1,4-Difluorobenzene	0.100		"	0.120		83.6	75-125			

Permian Basin Environmental Lab, L.P.

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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
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Batch P9H2305 - General Preparation (GC)

Calibration Check (P9H2305-CCV1)

Prepared: 08/23/19 Analyzed: 08/24/19

Benzene	0.0932	0.00100	mg/L	0.100		93.2	80-120			
Toluene	0.0974	0.00100	"	0.100		97.4	80-120			
Ethylbenzene	0.0958	0.00100	"	0.100		95.8	80-120			
Xylene (p/m)	0.184	0.00200	"	0.200		92.0	80-120			
Xylene (o)	0.103	0.00100	"	0.100		103	80-120			
Surrogate: 4-Bromofluorobenzene	0.120		"	0.120		100	75-125			
Surrogate: 1,4-Difluorobenzene	0.138		"	0.120		115	75-125			

Calibration Check (P9H2305-CCV2)

Prepared: 08/23/19 Analyzed: 08/24/19

Benzene	0.0847	0.00100	mg/L	0.100		84.7	80-120			
Toluene	0.0846	0.00100	"	0.100		84.6	80-120			
Ethylbenzene	0.0834	0.00100	"	0.100		83.4	80-120			
Xylene (p/m)	0.168	0.00200	"	0.200		83.8	80-120			
Xylene (o)	0.0916	0.00100	"	0.100		91.6	80-120			
Surrogate: 4-Bromofluorobenzene	0.107		"	0.120		88.8	75-125			
Surrogate: 1,4-Difluorobenzene	0.126		"	0.120		105	75-125			

Calibration Check (P9H2305-CCV3)

Prepared: 08/23/19 Analyzed: 08/24/19

Benzene	0.0968	0.00100	mg/L	0.100		96.8	80-120			
Toluene	0.0986	0.00100	"	0.100		98.6	80-120			
Ethylbenzene	0.0993	0.00100	"	0.100		99.3	80-120			
Xylene (p/m)	0.194	0.00200	"	0.200		96.8	80-120			
Xylene (o)	0.105	0.00100	"	0.100		105	80-120			
Surrogate: 4-Bromofluorobenzene	0.125		"	0.120		104	75-125			
Surrogate: 1,4-Difluorobenzene	0.139		"	0.120		116	75-125			

Matrix Spike (P9H2305-MS1)

Source: 9H21018-26

Prepared: 08/23/19 Analyzed: 08/24/19

Benzene	0.0615	0.00100	mg/L	0.100	ND	61.5	80-120			QM-07
Toluene	0.105	0.00100	"	0.100	0.0253	79.6	80-120			QM-07
Ethylbenzene	0.109	0.00100	"	0.100	0.0418	67.4	80-120			QM-07
Xylene (p/m)	0.211	0.00200	"	0.200	0.110	50.7	80-120			QM-07
Xylene (o)	0.107	0.00100	"	0.100	0.0367	70.6	80-120			QM-07
Surrogate: 4-Bromofluorobenzene	0.129		"	0.120		108	75-125			
Surrogate: 1,4-Difluorobenzene	0.138		"	0.120		115	75-125			

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Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9H2305 - General Preparation (GC)

Matrix Spike Dup (P9H2305-MSD1)		Source: 9H21018-26		Prepared: 08/23/19		Analyzed: 08/24/19				
Benzene	0.0574	0.00100	mg/L	0.100	ND	57.4	80-120	6.80	20	QM-07
Toluene	0.0959	0.00100	"	0.100	0.0253	70.6	80-120	12.0	20	QM-07
Ethylbenzene	0.0998	0.00100	"	0.100	0.0418	58.0	80-120	15.0	20	QM-07
Xylene (p/m)	0.214	0.00200	"	0.200	0.110	52.1	80-120	2.70	20	QM-07
Xylene (o)	0.0935	0.00100	"	0.100	0.0367	56.8	80-120	21.7	20	QM-07
Surrogate: 4-Bromofluorobenzene	0.121		"	0.120		101	75-125			
Surrogate: 1,4-Difluorobenzene	0.130		"	0.120		109	75-125			

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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
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Batch P9H2205 - * DEFAULT PREP *****

Blank (P9H2205-BLK1)		Prepared & Analyzed: 08/22/19							
% Moisture	ND	0.1	%						
Duplicate (P9H2205-DUP1)		Source: 9H21004-02		Prepared & Analyzed: 08/22/19					
% Moisture	8.0	0.1	%		8.0			0.00	20
Duplicate (P9H2205-DUP2)		Source: 9H21008-03		Prepared & Analyzed: 08/22/19					
% Moisture	10.0	0.1	%		9.0			10.5	20
Duplicate (P9H2205-DUP3)		Source: 9H21010-06		Prepared & Analyzed: 08/22/19					
% Moisture	7.0	0.1	%		7.0			0.00	20
Duplicate (P9H2205-DUP4)		Source: 9H21013-03		Prepared & Analyzed: 08/22/19					
% Moisture	13.0	0.1	%		14.0			7.41	20
Duplicate (P9H2205-DUP5)		Source: 9H21001-18		Prepared & Analyzed: 08/22/19					
% Moisture	1.0	0.1	%		15.0			175	20
Duplicate (P9H2205-DUP6)		Source: 9H21018-20		Prepared & Analyzed: 08/22/19					
% Moisture	8.0	0.1	%		8.0			0.00	20

Batch P9H2907 - * DEFAULT PREP *****

Blank (P9H2907-BLK1)		Prepared: 08/29/19 Analyzed: 08/30/19							
Chloride	ND	1.00	mg/kg wet						
LCS (P9H2907-BS1)		Prepared: 08/29/19 Analyzed: 08/30/19							
Chloride	412	1.00	mg/kg wet	400		103	80-120		

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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 P9H2907 - *** DEFAULT PREP ***										
LCS Dup (P9H2907-BSD1)				Prepared: 08/29/19 Analyzed: 08/30/19						
Chloride	418	1.00	mg/kg wet	400		104	80-120	1.38	20	
Calibration Check (P9H2907-CCV1)				Prepared: 08/29/19 Analyzed: 08/30/19						
Chloride	20.0		mg/kg	20.0		100	0-200			
Calibration Check (P9H2907-CCV2)				Prepared: 08/29/19 Analyzed: 08/30/19						
Chloride	19.7		mg/kg	20.0		98.4	0-200			
Calibration Check (P9H2907-CCV3)				Prepared: 08/29/19 Analyzed: 08/30/19						
Chloride	20.3		mg/kg	20.0		101	0-200			
Matrix Spike (P9H2907-MS1)		Source: 9H29001-01		Prepared: 08/29/19 Analyzed: 08/30/19						
Chloride	21300	57.5	mg/kg dry	5750	14900	111	80-120			
Matrix Spike (P9H2907-MS2)		Source: 9H20014-01		Prepared: 08/29/19 Analyzed: 08/30/19						
Chloride	9630	51.0	mg/kg dry	5100	4730	96.1	80-120			
Matrix Spike Dup (P9H2907-MSD1)		Source: 9H29001-01		Prepared: 08/29/19 Analyzed: 08/30/19						
Chloride	21300	57.5	mg/kg dry	5750	14900	111	80-120	0.0270	20	
Matrix Spike Dup (P9H2907-MSD2)		Source: 9H20014-01		Prepared: 08/29/19 Analyzed: 08/30/19						
Chloride	9990	51.0	mg/kg dry	5100	4730	103	80-120	3.65	20	
Batch P9H2910 - *** DEFAULT PREP ***										
Blank (P9H2910-BLK1)				Prepared: 08/29/19 Analyzed: 08/30/19						
Chloride	ND	1.00	mg/kg wet							

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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 P9H2910 - *** DEFAULT PREP ***										
LCS (P9H2910-BS1)				Prepared: 08/29/19 Analyzed: 08/30/19						
Chloride	435	1.00	mg/kg wet	400		109	80-120			
LCS Dup (P9H2910-BSD1)				Prepared: 08/29/19 Analyzed: 08/30/19						
Chloride	433	1.00	mg/kg wet	400		108	80-120	0.350	20	
Calibration Blank (P9H2910-CCB2)				Prepared: 08/29/19 Analyzed: 08/30/19						
Chloride	0.00		mg/kg wet							
Calibration Check (P9H2910-CCV1)				Prepared: 08/29/19 Analyzed: 08/30/19						
Chloride	19.8		mg/kg	20.0		99.1	0-200			
Calibration Check (P9H2910-CCV2)				Prepared: 08/29/19 Analyzed: 08/30/19						
Chloride	20.3		mg/kg	20.0		101	0-200			
Matrix Spike (P9H2910-MS1)				Source: 9H21018-10		Prepared: 08/29/19 Analyzed: 08/30/19				
Chloride	1160	10.8	mg/kg dry	1080	47.4	103	80-120			
Matrix Spike (P9H2910-MS2)				Source: 9H21018-16		Prepared: 08/29/19 Analyzed: 08/30/19				
Chloride	514	1.00	mg/kg dry	500	8.83	101	80-120			
Matrix Spike Dup (P9H2910-MSD1)				Source: 9H21018-10		Prepared: 08/29/19 Analyzed: 08/30/19				
Chloride	1180	10.8	mg/kg dry	1080	47.4	105	80-120	1.75	20	
Matrix Spike Dup (P9H2910-MSD2)				Source: 9H21018-16		Prepared: 08/29/19 Analyzed: 08/30/19				
Chloride	504	1.00	mg/kg dry	500	8.83	99.1	80-120	1.93	20	
Batch P9H3004 - *** DEFAULT PREP ***										
Blank (P9H3004-BLK1)				Prepared: 08/30/19 Analyzed: 08/31/19						
Chloride	ND	1.00	mg/kg wet							

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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
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Batch P9H3004 - * DEFAULT PREP *****

LCS (P9H3004-BS1)

Prepared: 08/30/19 Analyzed: 08/31/19

Chloride	419	1.00	mg/kg wet	400		105	80-120			
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LCS Dup (P9H3004-BSD1)

Prepared: 08/30/19 Analyzed: 08/31/19

Chloride	427	1.00	mg/kg wet	400		107	80-120	1.88	20	
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Calibration Blank (P9H3004-CCB1)

Prepared: 08/30/19 Analyzed: 08/31/19

Chloride	0.00		mg/kg wet							
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Calibration Blank (P9H3004-CCB2)

Prepared: 08/30/19 Analyzed: 08/31/19

Chloride	0.00		mg/kg wet							
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Calibration Check (P9H3004-CCV1)

Prepared: 08/30/19 Analyzed: 08/31/19

Chloride	20.0		mg/kg	20.0		99.8	0-200			
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Calibration Check (P9H3004-CCV2)

Prepared: 08/30/19 Analyzed: 08/31/19

Chloride	22.4		mg/kg	20.0		112	0-200			
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Calibration Check (P9H3004-CCV3)

Prepared: 08/30/19 Analyzed: 09/01/19

Chloride	21.0		mg/kg	20.0		105	0-200			
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Matrix Spike (P9H3004-MS1)

Source: 9H21018-26

Prepared: 08/30/19 Analyzed: 08/31/19

Chloride	1270	10.3	mg/kg dry	1030	162	108	80-120			
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Matrix Spike (P9H3004-MS2)

Source: 9H21018-36

Prepared: 08/30/19 Analyzed: 09/01/19

Chloride	757	1.03	mg/kg dry	515	219	104	80-120			
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Matrix Spike Dup (P9H3004-MSD1)

Source: 9H21018-26

Prepared: 08/30/19 Analyzed: 08/31/19

Chloride	1240	10.3	mg/kg dry	1030	162	104	80-120	2.92	20	
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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
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Batch P9H3004 - * DEFAULT PREP *****

Matrix Spike Dup (P9H3004-MSD2)	Source: 9H21018-36			Prepared: 08/30/19		Analyzed: 09/01/19				
Chloride	713	1.03	mg/kg dry	515	219	95.8	80-120	5.95	20	

Batch P9I0403 - * DEFAULT PREP *****

LCS (P9I0403-BS1)				Prepared: 09/04/19		Analyzed: 09/05/19				
Chloride	418	1.00	mg/kg wet	400		104	80-120			

LCS Dup (P9I0403-BSD1)				Prepared: 09/04/19		Analyzed: 09/05/19				
Chloride	412	1.00	mg/kg wet	400		103	80-120	1.41	20	

Matrix Spike (P9I0403-MS1)	Source: 9H21018-38			Prepared: 09/04/19		Analyzed: 09/05/19				
Chloride	5320	5.10	mg/kg dry	1020	403	482	80-120			

Matrix Spike Dup (P9I0403-MSD1)	Source: 9H21018-38			Prepared: 09/04/19		Analyzed: 09/05/19				
Chloride	5470	5.10	mg/kg dry	1020	403	497	80-120	2.78	20	

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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
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Batch P9H2217 - TX 1005

Blank (P9H2217-BLK1)

Prepared: 08/22/19 Analyzed: 08/23/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	134		"	120		111	70-130			
Surrogate: o-Terphenyl	71.0		"	60.0		118	70-130			

LCS (P9H2217-BS1)

Prepared: 08/22/19 Analyzed: 08/23/19

C6-C12	919	25.0	mg/kg wet	1000		91.9	75-125			
>C12-C28	975	25.0	"	1000		97.5	75-125			
Surrogate: 1-Chlorooctane	123		"	100		123	70-130			
Surrogate: o-Terphenyl	58.2		"	50.0		116	70-130			

LCS Dup (P9H2217-BSD1)

Prepared: 08/22/19 Analyzed: 08/23/19

C6-C12	1060	25.0	mg/kg wet	1000		106	75-125	14.6	20	
>C12-C28	1110	25.0	"	1000		111	75-125	12.8	20	
Surrogate: 1-Chlorooctane	129		"	100		129	70-130			
Surrogate: o-Terphenyl	64.6		"	50.0		129	70-130			

Calibration Blank (P9H2217-CCB1)

Prepared: 08/22/19 Analyzed: 08/23/19

C6-C12	4.28		mg/kg wet							
>C12-C28	15.4		"							
Surrogate: 1-Chlorooctane	133		"	120		110	70-130			
Surrogate: o-Terphenyl	71.0		"	60.0		118	70-130			

Calibration Blank (P9H2217-CCB2)

Prepared: 08/22/19 Analyzed: 08/25/19

C6-C12	9.70		mg/kg wet							
>C12-C28	23.4		"							
Surrogate: 1-Chlorooctane	130		"	100		130	70-130			
Surrogate: o-Terphenyl	69.4		"	50.0		139	70-130			S-GC

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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
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Batch P9H2217 - TX 1005

Calibration Check (P9H2217-CCV1)

Prepared: 08/22/19 Analyzed: 08/23/19

C6-C12	522	25.0	mg/kg wet	500		104	85-115			
>C12-C28	555	25.0	"	500		111	85-115			
Surrogate: 1-Chlorooctane	126		"	100		126	70-130			
Surrogate: o-Terphenyl	57.3		"	50.0		115	70-130			

Calibration Check (P9H2217-CCV2)

Prepared: 08/22/19 Analyzed: 08/25/19

C6-C12	543	25.0	mg/kg wet	500		109	85-115			
>C12-C28	524	25.0	"	500		105	85-115			
Surrogate: 1-Chlorooctane	121		"	100		121	70-130			
Surrogate: o-Terphenyl	59.2		"	50.0		118	70-130			

Calibration Check (P9H2217-CCV3)

Prepared: 08/22/19 Analyzed: 08/25/19

C6-C12	530	25.0	mg/kg wet	500		106	85-115			
>C12-C28	491	25.0	"	500		98.2	85-115			
Surrogate: 1-Chlorooctane	126		"	100		126	70-130			
Surrogate: o-Terphenyl	56.1		"	50.0		112	70-130			

Duplicate (P9H2217-DUP1)

Source: 9H21018-29

Prepared: 08/22/19 Analyzed: 08/25/19

C6-C12	12.1	26.6	mg/kg dry		ND				20	
>C12-C28	ND	26.6	"		12.5				20	
Surrogate: 1-Chlorooctane	137		"	106		129	70-130			
Surrogate: o-Terphenyl	75.6		"	53.2		142	70-130			S-GC

Batch P9H2310 - TX 1005

Blank (P9H2310-BLK1)

Prepared: 08/23/19 Analyzed: 08/25/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	135		"	120		112	70-130			
Surrogate: o-Terphenyl	70.3		"	60.0		117	70-130			

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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 P9H2310 - TX 1005										
LCS (P9H2310-BS1)				Prepared: 08/23/19 Analyzed: 08/25/19						
C6-C12	1150	25.0	mg/kg wet	1000		115	75-125			
>C12-C28	1160	25.0	"	1000		116	75-125			
Surrogate: 1-Chlorooctane	121		"	100		121	70-130			
Surrogate: o-Terphenyl	62.2		"	50.0		124	70-130			
LCS Dup (P9H2310-BSD1)				Prepared: 08/23/19 Analyzed: 08/25/19						
C6-C12	1020	25.0	mg/kg wet	1000		102	75-125	12.4	20	
>C12-C28	1180	25.0	"	1000		118	75-125	2.20	20	
Surrogate: 1-Chlorooctane	128		"	100		128	70-130			
Surrogate: o-Terphenyl	63.1		"	50.0		126	70-130			
Calibration Blank (P9H2310-CCB1)				Prepared: 08/23/19 Analyzed: 08/25/19						
C6-C12	6.63		mg/kg wet							
>C12-C28	22.4		"							
Surrogate: 1-Chlorooctane	130		"	100		130	70-130			
Surrogate: o-Terphenyl	68.6		"	50.0		137	70-130			S-GC
Calibration Blank (P9H2310-CCB2)				Prepared: 08/23/19 Analyzed: 08/25/19						
C6-C12	5.92		mg/kg wet							
>C12-C28	19.6		"							
Surrogate: 1-Chlorooctane	132		"	120		110	70-130			
Surrogate: o-Terphenyl	69.0		"	60.0		115	70-130			
Calibration Check (P9H2310-CCV1)				Prepared: 08/23/19 Analyzed: 08/24/19						
C6-C12	542	25.0	mg/kg wet	500		108	85-115			
>C12-C28	565	25.0	"	500		113	85-115			
Surrogate: 1-Chlorooctane	128		"	100		128	70-130			
Surrogate: o-Terphenyl	61.8		"	50.0		124	70-130			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9H2310 - TX 1005

Calibration Check (P9H2310-CCV2)

Prepared: 08/23/19 Analyzed: 08/25/19

C6-C12	544	25.0	mg/kg wet	500		109	85-115			
>C12-C28	570	25.0	"	500		114	85-115			
Surrogate: 1-Chlorooctane	122		"	100		122	70-130			
Surrogate: o-Terphenyl	60.5		"	50.0		121	70-130			

Calibration Check (P9H2310-CCV3)

Prepared: 08/23/19 Analyzed: 08/25/19

C6-C12	542	25.0	mg/kg wet	500		108	85-115			
>C12-C28	574	25.0	"	500		115	85-115			
Surrogate: 1-Chlorooctane	131		"	100		131	70-130			S-GC
Surrogate: o-Terphenyl	57.3		"	50.0		115	70-130			

Duplicate (P9H2310-DUP1)

Source: 9H21018-19

Prepared: 08/23/19 Analyzed: 08/25/19

C6-C12	14.4	26.6	mg/kg dry		13.2			8.34	20	
>C12-C28	12.7	26.6	"		ND				20	
Surrogate: 1-Chlorooctane	144		"	128		113	70-130			
Surrogate: o-Terphenyl	76.5		"	63.8		120	70-130			

Batch P9H2311 - TX 1005

Blank (P9H2311-BLK1)

Prepared: 08/23/19 Analyzed: 08/25/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	94.3		"	100		94.3	70-130			
Surrogate: o-Terphenyl	49.2		"	50.0		98.4	70-130			

LCS (P9H2311-BS1)

Prepared: 08/23/19 Analyzed: 08/25/19

C6-C12	1020	25.0	mg/kg wet	1000		102	75-125			
>C12-C28	1090	25.0	"	1000		109	75-125			
Surrogate: 1-Chlorooctane	112		"	100		112	70-130			
Surrogate: o-Terphenyl	51.9		"	50.0		104	70-130			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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 P9H2311 - TX 1005

LCS Dup (P9H2311-BSD1)

Prepared: 08/23/19 Analyzed: 08/25/19

C6-C12	1020	25.0	mg/kg wet	1000		102	75-125	0.0586	20	
>C12-C28	1090	25.0	"	1000		109	75-125	0.164	20	
Surrogate: 1-Chlorooctane	110		"	100		110	70-130			
Surrogate: o-Terphenyl	52.4		"	50.0		105	70-130			

Calibration Blank (P9H2311-CCB1)

Prepared: 08/23/19 Analyzed: 08/25/19

C6-C12	10.4		mg/kg wet							
>C12-C28	9.55		"							
Surrogate: 1-Chlorooctane	111		"	100		111	70-130			
Surrogate: o-Terphenyl	57.9		"	50.0		116	70-130			

Calibration Blank (P9H2311-CCB2)

Prepared: 08/23/19 Analyzed: 08/25/19

C6-C12	5.23		mg/kg wet							
>C12-C28	17.8		"							
Surrogate: 1-Chlorooctane	115		"	100		115	70-130			
Surrogate: o-Terphenyl	59.5		"	50.0		119	70-130			

Calibration Check (P9H2311-CCV1)

Prepared: 08/23/19 Analyzed: 08/25/19

C6-C12	530	25.0	mg/kg wet	500		106	85-115			
>C12-C28	491	25.0	"	500		98.2	85-115			
Surrogate: 1-Chlorooctane	126		"	100		126	70-130			
Surrogate: o-Terphenyl	56.1		"	50.0		112	70-130			

Calibration Check (P9H2311-CCV2)

Prepared: 08/23/19 Analyzed: 08/25/19

C6-C12	552	25.0	mg/kg wet	500		110	85-115			
>C12-C28	569	25.0	"	500		114	85-115			
Surrogate: 1-Chlorooctane	128		"	100		128	70-130			
Surrogate: o-Terphenyl	57.6		"	50.0		115	70-130			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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 P9H2311 - TX 1005

Calibration Check (P9H2311-CCV3)

Prepared: 08/23/19 Analyzed: 08/26/19

C6-C12	533	25.0	mg/kg wet	500		107	85-115			
>C12-C28	567	25.0	"	500		113	85-115			
Surrogate: 1-Chlorooctane	127		"	100		127	70-130			
Surrogate: o-Terphenyl	59.7		"	50.0		119	70-130			

Duplicate (P9H2311-DUP1)

Source: 9H22001-05

Prepared: 08/23/19 Analyzed: 08/26/19

C6-C12	ND	30.5	mg/kg dry		13.0				20	
>C12-C28	15.7	30.5	"		25.2			46.1	20	
Surrogate: 1-Chlorooctane	127		"	122		105	70-130			
Surrogate: o-Terphenyl	68.1		"	61.0		112	70-130			

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

Notes and Definitions

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

ROI Received on Ice

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

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.

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:



Date:

9/5/2019

Brent Barron, Laboratory Director/Technical Director

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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

**Permian Basin Environmental Lab, LP
10014 S. County Road 1213
Midland, Texas 79706**

Page 1 of 5

Project Name: COG - Jack Federal #004H

Project #: TRC #358143

Project Loc: Eddy County, NM

PO#:

Fax No:

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

e-mail: cdstanley@trcsolutions.com

ORDER #: 91121018

2006.34 PM

ORDER #:		91121018																															
LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO ₃	HCl	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Metals: Al, B, Co, Cu, Fe, Mn, Mo	Metals: Ni, Zn	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides E 300	Paint Filter	TCLP BTEX	RUSH TAT (Pre-Schedule) 24, 48,	Standard TAT	
1	F-1 @ Sur			8/17/2019	1400		1	X								Soil	X									X						X	
2	F-2 @ Sur			8/17/2019	1410		1	X								Soil	X									X						X	
3	F-3 @ Sur			8/17/2019	1415		1	X								Soil	X									X						X	
4	F-4 @ Sur			8/17/2019	1420		1	X								Soil	X									X						X	
5	F-5 @ 1'			8/17/2019	1425		1	X								Soil	X									X						X	
6	F-6 @ 2'			8/17/2019	1430		1	X								Soil	X									X						X	
7	WSW-6 @ 2.5'			8/17/2019	1435		1	X								Soil	X									X						X	
8	F-8 @ Sur			8/17/2019	1440		1	X								Soil	X									X						X	
9	F-9 @ Sur			8/17/2019	1445		1	X								Soil	X									X						X	

Bill to TRC

Date _____

Time

Received by:

Date _____

Time

Labels on container(s)

NY 100

Date _____

Time

Received by:

2

Defin

Time

Study Seeds Of Hope

2/2/76

1001

[illegible]

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1

100

by Corner? UPS

DHL FedEx Lone Star

10

1

11/11/11

2100

11

4.59

Adjusted: 7.5% C.F.

actor 22

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP
10014 S. County Road 1213
Midland, Texas 79706

Phone: 432-661-4184

Page 2 of 5

Project Manager: Curt Stanley

Company Name TRC Environmental Corporation

Company Address: 10 Desta Drive Ste 150E

City/State/Zip: Midland/TX 79705

Telephone No: (432) 520-7720

Sampler Signature

Fax No: _____
e-mail: cdstanley@trcsolutions.com

Report Format:

☒ Standard ☐ TRRP ☐ NPDES

Project Loc: Eddy County, NM

Project #: TRC #358143

Project Name: COG - Jack Federal #004H

Page 65 of 68

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PERI LAB

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP
10014 S. County Road 1213
Midland, Texas 79706

Page 3 of 5

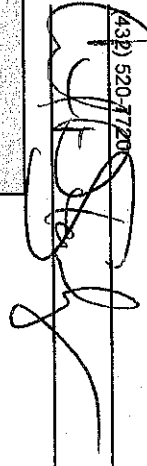
Project Manager: Curt Stanley

Company Name: TRC Environmental Corporation

Company Address: 10 Dosta Drive Ste 150E

City/State/Zip: Midland/TX/79705

Telephone No: (432) 520-1720

Sampler Signature: 

e-mail: cstanley@trcsolutions.com

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Project Name: COG - Jack Federal #004H

Project #: TRC #358143

Project Loc: Eddy County, NM

PO #:

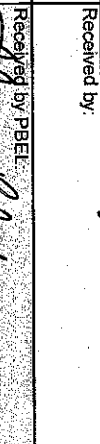
Page 66 of 68

(lab use only)
ORDER #: 91421018

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO ₃	HCl	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Metals: Al, B, Co, Cu, Fe, Mn, Mo	Metals: Ni, Zn	BTEX 6021P/5030 or BTEX 8260	RCl	N.O.R.M.	Chlorides E 300	Paint Filter	TCLP BTEX	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
19	F-14 @ 9"			8/17/2019	1605		1	X								Soil	X															X
20	F-15 @ 2'			8/17/2019	1610		1	X								Soil	X															X
21	NSW-15 @ 6"			8/17/2019	1620		1	X								Soil	X															X
22	SSW-15 @ 1'			8/17/2019	1625		1	X								Soil	X															X
23	F-16 @ 2'			8/17/2019	1630		1	X								Soil	X															X
24	NSW-16 @ 6"			8/17/2019	1635		1	X								Soil	X															X
25	SSW-16 @ 1'			8/17/2019	1640		1	X								Soil	X															X
26	F-17 @ Sur			8/17/2019	1645		1	X								Soil	X															X
27	F-18 @ 15'			8/17/2019	1650		1	X								Soil	X															X

Special Instructions:

Bill to TRC

Relinquished by:  Date: 8/21/19 Time: 14:00 Received by:  Date: 8/21/19 Time: 14:59Relinquished by:  Date: 8/21/19 Time: 14:59 Received by:  Date: 8/21/19 Time: 14:59Relinquished by:  Date: 8/21/19 Time: 14:59 Received by:  Date: 8/21/19 Time: 14:59Relinquished by:  Date: 8/21/19 Time: 14:59 Received by:  Date: 8/21/19 Time: 14:59

Laboratory Comments:

Sample Containers: 1623

VOCs Free of Headspace?

Labels on Containers?

Custody seals on containers?

Sample Hand Delivered by Sampler/Client Rep.?

Temperature Upon Receipt:

Adjusted: 45 °C

C Factor: 0.54

N

N

N

N

N



CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP
10014 S. County Road 1213
Midland, Texas 79706

Phone: 432-661-4184

Page 4 of 5

Project Manager: Curt Stanley

Company Name TRC Environmental Corporation

Company Address: 10 Desta Drive Ste 150E

City/State/Zip: Midland/TX/79705

Telephone No: (432) 520-7720

Sampler Signature:

Fax No:

e-mail: cdstanley@trcsolutions.com

Report Format:

☒ Standard

☐ TRRP

☐ NPDES

Project Loc: Eddy County, NM

Project #: TRC #358143

Project Name: COG - Jack Federal #004H

Page 67 of 68

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Permian Basin Environmental Lab, LP
10014 S. County Road 1213
Midland, Texas 79706

Phone: 432-661-4184

Page 5 of 5

Project Manager: Curt Stanley

Company Name TRC Environmental Corporation

Company Address: 10 Desta Drive Ste 150E

City/State/Zip: Midland/TX/79705

Telephone No:

Sampler Signature:

Fax No:

e-mail: cdstanley@trcsolutions.com

Report Format:

☒ Standard

☐ TRRP

NPDES

PO#

Project Loc: Eddy County, NM

Project #: TRC #358143

Project Name: COG - Jack Federal #004-H

Page 68 of 68

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



Analytical Report

Prepared for:

Curt Stanley
TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland, TX 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Location: Eddy County, NM
Lab Order Number: 9J22005



NELAP/TCEQ # T104704516-17-8

Report Date: 10/30/19

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
ESW-5 @ 6"	9J22005-01	Soil	10/17/19 14:00	10-22-2019 15:34
SSW-6 @ 4"	9J22005-02	Soil	10/17/19 14:10	10-22-2019 15:34
ESW-13 @ 9"	9J22005-03	Soil	10/17/19 14:15	10-22-2019 15:34
WSW-16 @ 6"	9J22005-04	Soil	10/17/19 14:20	10-22-2019 15:34
WSW-7 @ 3"	9J22005-05	Soil	10/17/19 14:30	10-22-2019 15:34
SSW-19 @ 10"	9J22005-06	Soil	10/17/19 14:35	10-22-2019 15:34
WSW-20 @ 9"	9J22005-07	Soil	10/17/19 14:45	10-22-2019 15:34
F-26 @ 1.5'	9J22005-08	Soil	10/17/19 14:50	10-22-2019 15:34
ESW-18 @ 9"	9J22005-09	Soil	10/17/19 14:55	10-22-2019 15:34
ESW-21 @ 4"	9J22005-10	Soil	10/17/19 15:05	10-22-2019 15:34
ESW-22 @ 5"	9J22005-11	Soil	10/17/19 15:15	10-22-2019 15:34
NSW-23 @ 5"	9J22005-12	Soil	10/17/19 15:20	10-22-2019 15:34
SSW-24 @ 5"	9J22005-13	Soil	10/17/19 15:25	10-22-2019 15:34
WSW-25 @ 5"	9J22005-14	Soil	10/17/19 15:30	10-22-2019 15:34

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

ESW-5 @ 6"
9J22005-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00103	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00103	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00103	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00206	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00103	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		94.2 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		104 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	2350	10.3	mg/kg dry	10	P9J2806	10/28/19	10/29/19	EPA 300.0	
% Moisture	3.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	25.8	mg/kg dry	1	P9J2308	10/23/19	10/24/19	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P9J2308	10/23/19	10/24/19	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P9J2308	10/23/19	10/24/19	TPH 8015M	
Surrogate: 1-Chlorooctane		116 %	70-130		P9J2308	10/23/19	10/24/19	TPH 8015M	
Surrogate: o-Terphenyl		125 %	70-130		P9J2308	10/23/19	10/24/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	10/23/19	10/24/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

SSW-6 @ 4"

9J22005-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00111	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00111	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00111	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00222	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00111	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		101 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		100 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	2.51	1.11	mg/kg dry	1	P9J2806	10/28/19	10/29/19	EPA 300.0	
% Moisture	10.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.8	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	27.8	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	27.8	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		117 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		124 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.8	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

ESW-13 @ 9"

9J22005-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00106	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00106	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00213	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		105 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		90.2 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	6.72	1.06	mg/kg dry	1	P9J2807	10/28/19	10/29/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		127 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		135 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

WSW-16 @ 6"

9J22005-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00112	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00112	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00112	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00225	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00112	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		104 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		99.2 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	2.84	1.12	mg/kg dry	1	P9J2807	10/28/19	10/30/19	EPA 300.0	
% Moisture	11.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.1	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		122 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		134 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

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Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

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WSW-7 @ 3"

9J22005-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00104	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00104	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00104	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00208	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00104	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		88.4 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.6 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	14100	52.1	mg/kg dry	50	P9J2807	10/28/19	10/29/19	EPA 300.0	
% Moisture	4.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.0	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	26.0	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		127 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		134 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

SSW-19 @ 10"

9J22005-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00109	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00109	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00109	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00217	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00109	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		95.1 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		104 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	156	1.09	mg/kg dry	1	P9J2807	10/28/19	10/29/19	EPA 300.0	
% Moisture	8.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.2	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		124 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		129 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

WSW-20 @ 9"

9J22005-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00111	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00111	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00111	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00222	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00111	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		103 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		99.4 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	134	1.11	mg/kg dry	1	P9J2807	10/28/19	10/29/19	EPA 300.0	
% Moisture	10.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.8	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	27.8	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	27.8	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		126 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		133 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	27.8	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

F-26 @ 1.5'
9J22005-08 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00115	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00115	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00115	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00230	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00115	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		94.4 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		100 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	18.6	1.15	mg/kg dry	1	P9J2807	10/28/19	10/29/19	EPA 300.0	
% Moisture	13.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.7	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	28.7	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	28.7	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		122 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		133 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	28.7	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

ESW-18 @ 9"

9J22005-09 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00110	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00110	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00110	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00220	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00110	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		102 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		96.3 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	820	5.49	mg/kg dry	5	P9J2807	10/28/19	10/29/19	EPA 300.0	
% Moisture	9.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.5	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	27.5	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	27.5	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		123 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		131 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	27.5	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

ESW-21 @ 4"

9J22005-10 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00106	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00106	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00213	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		108 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		102 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	281	10.6	mg/kg dry	10	P9J2807	10/28/19	10/29/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		119 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		127 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

ESW-22 @ 5"

9J22005-11 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00109	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00109	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00109	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00217	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00109	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		104 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		100 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	159	5.43	mg/kg dry	5	P9J2807	10/28/19	10/29/19	EPA 300.0	
% Moisture	8.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.2	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		100 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		104 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

NSW-23 @ 5"

9J22005-12 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00106	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00106	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00213	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		100 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		97.9 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	19.9	1.06	mg/kg dry	1	P9J2807	10/28/19	10/29/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		94.8 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		100 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

SSW-24 @ 5"

9J22005-13 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00108	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00108	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00108	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00215	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00108	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		98.1 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		94.3 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	223	5.38	mg/kg dry	5	P9J2807	10/28/19	10/30/19	EPA 300.0	
% Moisture	7.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.9	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		110 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		114 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

WSW-25 @ 5"

9J22005-14 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00105	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00105	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00105	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00211	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00105	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		97.3 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		98.6 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	52.8	5.26	mg/kg dry	5	P9J2807	10/28/19	10/30/19	EPA 300.0	
% Moisture	5.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.3	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		124 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		131 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9J2303 - General Preparation (GC)

Blank (P9J2303-BLK1)

Prepared & Analyzed: 10/23/19

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	0.119		"	0.120		99.0	75-125			
Surrogate: 1,4-Difluorobenzene	0.114		"	0.120		94.8	75-125			

LCS (P9J2303-BS1)

Prepared & Analyzed: 10/23/19

Benzene	0.0860	0.00100	mg/kg wet	0.100		86.0	70-130			
Toluene	0.104	0.00100	"	0.100		104	70-130			
Ethylbenzene	0.102	0.00100	"	0.100		102	70-130			
Xylene (p/m)	0.202	0.00200	"	0.200		101	70-130			
Xylene (o)	0.103	0.00100	"	0.100		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.131		"	0.120		109	75-125			
Surrogate: 1,4-Difluorobenzene	0.138		"	0.120		115	75-125			

LCS Dup (P9J2303-BSD1)

Prepared & Analyzed: 10/23/19

Benzene	0.0938	0.00100	mg/kg wet	0.100		93.8	70-130	8.65	20	
Toluene	0.102	0.00100	"	0.100		102	70-130	1.57	20	
Ethylbenzene	0.104	0.00100	"	0.100		104	70-130	2.46	20	
Xylene (p/m)	0.207	0.00200	"	0.200		104	70-130	2.35	20	
Xylene (o)	0.111	0.00100	"	0.100		111	70-130	7.83	20	
Surrogate: 1,4-Difluorobenzene	0.136		"	0.120		113	75-125			
Surrogate: 4-Bromofluorobenzene	0.120		"	0.120		100	75-125			

Calibration Blank (P9J2303-CCB1)

Prepared & Analyzed: 10/23/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.111		"	0.120		92.6	75-125			
Surrogate: 4-Bromofluorobenzene	0.120		"	0.120		99.8	75-125			

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9J2303 - General Preparation (GC)

Calibration Blank (P9J2303-CCB2)

Prepared & Analyzed: 10/23/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.116		"	0.120		96.5	75-125			
Surrogate: 1,4-Difluorobenzene	0.124		"	0.120		103	75-125			

Calibration Blank (P9J2303-CCB3)

Prepared & Analyzed: 10/23/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.111		"	0.120		92.6	75-125			
Surrogate: 4-Bromofluorobenzene	0.120		"	0.120		99.8	75-125			

Calibration Check (P9J2303-CCV1)

Prepared & Analyzed: 10/23/19

Benzene	0.0900	0.00100	mg/kg wet	0.100		90.0	80-120			
Toluene	0.0974	0.00100	"	0.100		97.4	80-120			
Ethylbenzene	0.105	0.00100	"	0.100		105	80-120			
Xylene (p/m)	0.193	0.00200	"	0.200		96.3	80-120			
Xylene (o)	0.107	0.00100	"	0.100		107	80-120			
Surrogate: 4-Bromofluorobenzene	0.131		"	0.120		110	75-125			
Surrogate: 1,4-Difluorobenzene	0.130		"	0.120		109	75-125			

Calibration Check (P9J2303-CCV2)

Prepared & Analyzed: 10/23/19

Benzene	0.0970	0.00100	mg/kg wet	0.100		97.0	80-120			
Toluene	0.102	0.00100	"	0.100		102	80-120			
Ethylbenzene	0.113	0.00100	"	0.100		113	80-120			
Xylene (p/m)	0.202	0.00200	"	0.200		101	80-120			
Xylene (o)	0.111	0.00100	"	0.100		111	80-120			
Surrogate: 4-Bromofluorobenzene	0.133		"	0.120		110	75-125			
Surrogate: 1,4-Difluorobenzene	0.136		"	0.120		113	75-125			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9J2303 - General Preparation (GC)

Calibration Check (P9J2303-CCV3)

Prepared & Analyzed: 10/23/19

Benzene	0.0900	0.00100	mg/kg wet	0.100		90.0	80-120			
Toluene	0.0974	0.00100	"	0.100		97.4	80-120			
Ethylbenzene	0.105	0.00100	"	0.100		105	80-120			
Xylene (p/m)	0.193	0.00200	"	0.200		96.3	80-120			
Xylene (o)	0.107	0.00100	"	0.100		107	80-120			
Surrogate: 4-Bromofluorobenzene	0.131		"	0.120		110	75-125			
Surrogate: 1,4-Difluorobenzene	0.130		"	0.120		109	75-125			

Matrix Spike (P9J2303-MS1)

Source: 9J22005-01

Prepared & Analyzed: 10/23/19

Benzene	0.0552	0.00103	mg/kg dry	0.103	ND	53.6	80-120			QM-05
Toluene	0.0643	0.00103	"	0.103	ND	62.4	80-120			QM-05
Ethylbenzene	0.0835	0.00103	"	0.103	ND	81.0	80-120			
Xylene (p/m)	0.125	0.00206	"	0.206	ND	60.5	80-120			QM-05
Xylene (o)	0.0600	0.00103	"	0.103	ND	58.2	80-120			QM-05
Surrogate: 1,4-Difluorobenzene	0.146		"	0.124		118	75-125			
Surrogate: 4-Bromofluorobenzene	0.136		"	0.124		110	75-125			

Matrix Spike Dup (P9J2303-MSD1)

Source: 9J22005-01

Prepared & Analyzed: 10/23/19

Benzene	0.0498	0.00103	mg/kg dry	0.103	ND	48.3	80-120	10.4	20	QM-05
Toluene	0.0539	0.00103	"	0.103	ND	52.3	80-120	17.7	20	QM-05
Ethylbenzene	0.0667	0.00103	"	0.103	ND	64.7	80-120	22.4	20	QM-05
Xylene (p/m)	0.103	0.00206	"	0.206	ND	49.8	80-120	19.4	20	QM-05
Xylene (o)	0.0469	0.00103	"	0.103	ND	45.4	80-120	24.6	20	QM-05
Surrogate: 4-Bromofluorobenzene	0.125		"	0.124		101	75-125			
Surrogate: 1,4-Difluorobenzene	0.145		"	0.124		117	75-125			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9J2403 - * DEFAULT PREP *****

Blank (P9J2403-BLK1)				Prepared & Analyzed: 10/24/19						
% Moisture	ND	0.1	%							
Duplicate (P9J2403-DUP1)				Source: 9J23001-09 Prepared & Analyzed: 10/24/19						
% Moisture	8.0	0.1	%		8.0			0.00	20	
Duplicate (P9J2403-DUP2)				Source: 9J23006-03 Prepared & Analyzed: 10/24/19						
% Moisture	8.0	0.1	%		8.0			0.00	20	
Duplicate (P9J2403-DUP3)				Source: 9J23006-05 Prepared & Analyzed: 10/24/19						
% Moisture	10.0	0.1	%		9.0			10.5	20	

Batch P9J2806 - * DEFAULT PREP *****

Blank (P9J2806-BLK1)				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	ND	0.100	mg/kg wet							
LCS (P9J2806-BS1)				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	433	1.00	mg/kg wet	400		108	80-120			
LCS Dup (P9J2806-BSD1)				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	438	1.00	mg/kg wet	400		109	80-120	1.07	20	
Calibration Blank (P9J2806-CCB1)				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	0.00		mg/kg wet							
Calibration Blank (P9J2806-CCB2)				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	0.00		mg/kg wet							

Permian Basin Environmental Lab, L.P.

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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
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Batch P9J2806 - * DEFAULT PREP *****

Calibration Check (P9J2806-CCV1)

Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	20.7		mg/kg	20.0		104	0-200			
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Calibration Check (P9J2806-CCV2)

Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	20.7		mg/kg	20.0		104	0-200			
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Calibration Check (P9J2806-CCV3)

Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	21.2		mg/kg	20.0		106	0-200			
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Matrix Spike (P9J2806-MS1)

Source: 9J28001-01

Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	519	1.00	mg/kg dry	500	37.9	96.2	80-120			
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Matrix Spike (P9J2806-MS2)

Source: 9J22003-02

Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	12000	29.4	mg/kg dry	2940	8820	108	80-120			
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Matrix Spike Dup (P9J2806-MSD1)

Source: 9J28001-01

Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	516	1.00	mg/kg dry	500	37.9	95.6	80-120	0.512	20	
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Matrix Spike Dup (P9J2806-MSD2)

Source: 9J22003-02

Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	11700	29.4	mg/kg dry	2940	8820	98.2	80-120	2.50	20	
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Batch P9J2807 - * DEFAULT PREP *****

Blank (P9J2807-BLK1)

Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	ND	0.100	mg/kg wet							
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LCS (P9J2807-BS1)

Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	436	1.00	mg/kg wet	400		109	80-120			
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TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9J2807 - * DEFAULT PREP *****

LCS Dup (P9J2807-BSD1) Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	442	1.00	mg/kg wet	400		110	80-120	1.25	20	
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Calibration Blank (P9J2807-CCB1) Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	0.00		mg/kg wet							
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Calibration Blank (P9J2807-CCB2) Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	0.00		mg/kg wet							
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Calibration Check (P9J2807-CCV1) Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	21.2		mg/kg	20.0		106	0-200			
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Calibration Check (P9J2807-CCV2) Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	20.5		mg/kg	20.0		103	0-200			
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Calibration Check (P9J2807-CCV3) Prepared: 10/28/19 Analyzed: 10/30/19

Chloride	20.9		mg/kg	20.0		105	0-200			
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Matrix Spike (P9J2807-MS1) Source: 9J22005-04 Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	1190	11.2	mg/kg dry	1120	2.84	105	80-120			
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Matrix Spike (P9J2807-MS2) Source: 9J22005-13 Prepared: 10/28/19 Analyzed: 10/30/19

Chloride	745	5.38	mg/kg dry	538	223	97.2	80-120			
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Matrix Spike Dup (P9J2807-MSD1) Source: 9J22005-04 Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	1140	11.2	mg/kg dry	1120	2.84	101	80-120	4.32	20	
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Matrix Spike Dup (P9J2807-MSD2) Source: 9J22005-13 Prepared: 10/28/19 Analyzed: 10/30/19

Chloride	765	5.38	mg/kg dry	538	223	101	80-120	2.66	20	
----------	-----	------	-----------	-----	-----	-----	--------	------	----	--

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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 P9J2308 - TX 1005

Blank (P9J2308-BLK1)

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	121		"	100		121	70-130			
Surrogate: o-Terphenyl	64.4		"	50.0		129	70-130			

LCS (P9J2308-BS1)

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	893	25.0	mg/kg wet	1000		89.3	75-125			
>C12-C28	882	25.0	"	1000		88.2	75-125			
Surrogate: 1-Chlorooctane	99.0		"	100		99.0	70-130			
Surrogate: o-Terphenyl	51.7		"	50.0		103	70-130			

LCS Dup (P9J2308-BSD1)

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	933	25.0	mg/kg wet	1000		93.3	75-125	4.41	20	
>C12-C28	925	25.0	"	1000		92.5	75-125	4.71	20	
Surrogate: 1-Chlorooctane	105		"	100		105	70-130			
Surrogate: o-Terphenyl	54.6		"	50.0		109	70-130			

Calibration Blank (P9J2308-CCB1)

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	7.29		mg/kg wet							
>C12-C28	5.45		"							
Surrogate: 1-Chlorooctane	111		"	100		111	70-130			
Surrogate: o-Terphenyl	60.2		"	50.0		120	70-130			

Calibration Blank (P9J2308-CCB2)

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	8.19		mg/kg wet							
>C12-C28	15.3		"							
Surrogate: 1-Chlorooctane	106		"	100		106	70-130			
Surrogate: o-Terphenyl	56.6		"	50.0		113	70-130			

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TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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 P9J2308 - TX 1005

Calibration Check (P9J2308-CCV1)

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	491	25.0	mg/kg wet	500		98.3	85-115			
>C12-C28	484	25.0	"	500		96.7	85-115			
Surrogate: 1-Chlorooctane	102		"	100		102	70-130			
Surrogate: o-Terphenyl	54.5		"	50.0		109	70-130			

Calibration Check (P9J2308-CCV2)

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	438	25.0	mg/kg wet	500		87.5	85-115			
>C12-C28	446	25.0	"	500		89.1	85-115			
Surrogate: 1-Chlorooctane	92.9		"	100		92.9	70-130			
Surrogate: o-Terphenyl	49.6		"	50.0		99.2	70-130			

Matrix Spike (P9J2308-MS1)

Source: 9J22001-09

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	871	25.0	mg/kg dry	1000	ND	87.1	75-125			
>C12-C28	862	25.0	"	1000	461	40.1	75-125			QM-05
Surrogate: 1-Chlorooctane	91.1		"	100		91.1	70-130			
Surrogate: o-Terphenyl	46.0		"	50.0		92.1	70-130			

Matrix Spike Dup (P9J2308-MSD1)

Source: 9J22001-09

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	879	25.0	mg/kg dry	1000	ND	87.9	75-125	0.900	20	
>C12-C28	898	25.0	"	1000	461	43.7	75-125	8.45	20	QM-05
Surrogate: 1-Chlorooctane	92.5		"	100		92.5	70-130			
Surrogate: o-Terphenyl	46.5		"	50.0		92.9	70-130			

Batch P9J2310 - TX 1005

Blank (P9J2310-BLK1)

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	130		"	100		130	70-130			
Surrogate: o-Terphenyl	66.8		"	50.0		134	70-130			S-GC

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10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9J2310 - TX 1005

LCS (P9J2310-BS1)

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	976	25.0	mg/kg wet	1000		97.6	75-125			
>C12-C28	974	25.0	"	1000		97.4	75-125			
Surrogate: 1-Chlorooctane	122		"	100		122	70-130			
Surrogate: o-Terphenyl	61.8		"	50.0		124	70-130			

LCS Dup (P9J2310-BSD1)

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	979	25.0	mg/kg wet	1000		97.9	75-125	0.372	20	
>C12-C28	951	25.0	"	1000		95.1	75-125	2.33	20	
Surrogate: 1-Chlorooctane	118		"	100		118	70-130			
Surrogate: o-Terphenyl	62.8		"	50.0		126	70-130			

Calibration Blank (P9J2310-CCB1)

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	8.74		mg/kg wet							
>C12-C28	7.53		"							
Surrogate: 1-Chlorooctane	116		"	100		116	70-130			
Surrogate: o-Terphenyl	61.7		"	50.0		123	70-130			

Calibration Check (P9J2310-CCV1)

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	521	25.0	mg/kg wet	500		104	85-115			
>C12-C28	572	25.0	"	500		114	85-115			
Surrogate: 1-Chlorooctane	120		"	100		120	70-130			
Surrogate: o-Terphenyl	62.0		"	50.0		124	70-130			

Calibration Check (P9J2310-CCV2)

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	982	25.0	mg/kg wet	1000		98.2	85-115			
>C12-C28	935	25.0	"	1000		93.5	85-115			
Surrogate: 1-Chlorooctane	115		"	100		115	70-130			
Surrogate: o-Terphenyl	58.4		"	50.0		117	70-130			

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Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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 P9J2310 - TX 1005

Calibration Check (P9J2310-CCV3)

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	529	25.0	mg/kg wet	500		106	85-115			
>C12-C28	500	25.0	"	500		99.9	85-115			
Surrogate: 1-Chlorooctane	121		"	100		121	70-130			
Surrogate: o-Terphenyl	61.0		"	50.0		122	70-130			

Matrix Spike (P9J2310-MS1)

Source: 9J23002-07

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	1000	26.0	mg/kg dry	1040	16.0	94.8	75-125			
>C12-C28	987	26.0	"	1040	11.4	93.7	75-125			
Surrogate: 1-Chlorooctane	115		"	104		111	70-130			
Surrogate: o-Terphenyl	53.8		"	52.1		103	70-130			

Matrix Spike Dup (P9J2310-MSD1)

Source: 9J23002-07

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	995	26.0	mg/kg dry	1040	16.0	94.0	75-125	0.864	20	
>C12-C28	999	26.0	"	1040	11.4	94.8	75-125	1.24	20	
Surrogate: 1-Chlorooctane	124		"	104		119	70-130			
Surrogate: o-Terphenyl	54.0		"	52.1		104	70-130			

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

Notes and Definitions

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

ROI Received on Ice

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.

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:



Date:

10/30/2019

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.

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: COG - Jack Federal #004H
Project Number: TRC #358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permlan Basin Environmental Lab, LP
10014 S. County Road 1213
Midland, Texas 79706

Phone: 432-661-4184

Page 1 of 2

Project Manager: Curt Stanley

Company Name TRC Environmental Corporation

Company Address: 10 Desta Drive, Ste 150E

City/State/Zip: Midland/TX 79703

Telephone No.:

Sampler Signature:

Fax No:

e-mail: cdstanley@trcsolutions.com

Report Format:

☒ Standard

☐ TRRP

NPDES

PO#

Project Loc: Eddy County, New Mexico

Project #: TRC #358143

Project Name: COG - Jack Federal #004H

Page 29 of 30

[illegible]

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP
10014 S. County Road 1213
Midland, Texas 79706

Phone: 432-661-4184

Page 2 of 2

Project Manager: Curt Stanley

Company Name TRC Environmental Corporation

Company Address: 10 Desta Drive, Ste 150E

City/State/Zip: Midland/TX/79703

Telephone No.:

Sampler Signature

Fax No:

e-mail: cdstanley@trcsolutions.com
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Report Format: ☒ Standard ☐ TRRP ☐ NPDES

PO#:

Project Loc: Eddy County, New Mexico

Project #: TRC #358143

Project Name: COG - Jack Federal #004H

Page 30 of 30

[illegible]

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



Analytical Report

Prepared for:

Curt Stanley
TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland, TX 79705

Project: Concho Jack Federal 04H

Project Number: 358143

Location: Eddy County, NM

Lab Order Number: 9L20003



NELAP/TCEQ # T104704516-17-8

Report Date: 12/31/19

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: Concho Jack Federal 04H
Project Number: 358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WSW-7A@3"	9L20003-01	Soil	12/19/19 11:45	12-20-2019 11:23
ESW-5A@6"	9L20003-02	Soil	12/19/19 11:55	12-20-2019 11:23
ESW-18A@9"	9L20003-03	Soil	12/19/19 12:35	12-20-2019 11:23

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Project: Concho Jack Federal 04H
Project Number: 358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

WSW-7A@3"
9L20003-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00112	mg/kg dry	1	P9L2201	12/22/19	12/22/19	EPA 8021B	
Toluene	ND	0.00112	mg/kg dry	1	P9L2201	12/22/19	12/22/19	EPA 8021B	
Ethylbenzene	ND	0.00112	mg/kg dry	1	P9L2201	12/22/19	12/22/19	EPA 8021B	
Xylene (p/m)	ND	0.00225	mg/kg dry	1	P9L2201	12/22/19	12/22/19	EPA 8021B	
Xylene (o)	ND	0.00112	mg/kg dry	1	P9L2201	12/22/19	12/22/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		106 %	75-125		P9L2201	12/22/19	12/22/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		96.2 %	75-125		P9L2201	12/22/19	12/22/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	413	5.62	mg/kg dry	5	P9L2902	12/29/19	12/30/19	EPA 300.0	
% Moisture	11.0	0.1	%	1	P9L2301	12/23/19	12/23/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.1	mg/kg dry	1	P9L2402	12/24/19	12/24/19	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P9L2402	12/24/19	12/24/19	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P9L2402	12/24/19	12/24/19	TPH 8015M	
Surrogate: 1-Chlorooctane		91.4 %	70-130		P9L2402	12/24/19	12/24/19	TPH 8015M	
Surrogate: o-Terphenyl		103 %	70-130		P9L2402	12/24/19	12/24/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	12/24/19	12/24/19	calc	

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Concho Jack Federal 04H
Project Number: 358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

ESW-5A@6"
9L20003-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00109	mg/kg dry	1	P9L2201	12/22/19	12/22/19	EPA 8021B	
Toluene	ND	0.00109	mg/kg dry	1	P9L2201	12/22/19	12/22/19	EPA 8021B	
Ethylbenzene	ND	0.00109	mg/kg dry	1	P9L2201	12/22/19	12/22/19	EPA 8021B	
Xylene (p/m)	ND	0.00217	mg/kg dry	1	P9L2201	12/22/19	12/22/19	EPA 8021B	
Xylene (o)	ND	0.00109	mg/kg dry	1	P9L2201	12/22/19	12/22/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		100 %	75-125		P9L2201	12/22/19	12/22/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		109 %	75-125		P9L2201	12/22/19	12/22/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	148	5.43	mg/kg dry	5	P9L2902	12/29/19	12/30/19	EPA 300.0	
% Moisture	8.0	0.1	%	1	P9L2301	12/23/19	12/23/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.2	mg/kg dry	1	P9L2402	12/24/19	12/24/19	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P9L2402	12/24/19	12/24/19	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P9L2402	12/24/19	12/24/19	TPH 8015M	
Surrogate: 1-Chlorooctane		86.9 %	70-130		P9L2402	12/24/19	12/24/19	TPH 8015M	
Surrogate: o-Terphenyl		97.6 %	70-130		P9L2402	12/24/19	12/24/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	12/24/19	12/24/19	calc	

Permian Basin Environmental Lab, L.P.

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Project: Concho Jack Federal 04H
Project Number: 358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

ESW-18A@9"
9L20003-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00115	mg/kg dry	1	P9L2201	12/22/19	12/22/19	EPA 8021B	
Toluene	ND	0.00115	mg/kg dry	1	P9L2201	12/22/19	12/22/19	EPA 8021B	
Ethylbenzene	ND	0.00115	mg/kg dry	1	P9L2201	12/22/19	12/22/19	EPA 8021B	
Xylene (p/m)	ND	0.00230	mg/kg dry	1	P9L2201	12/22/19	12/22/19	EPA 8021B	
Xylene (o)	ND	0.00115	mg/kg dry	1	P9L2201	12/22/19	12/22/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		119 %	75-125		P9L2201	12/22/19	12/22/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		104 %	75-125		P9L2201	12/22/19	12/22/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	425	1.15	mg/kg dry	1	P9L2902	12/29/19	12/30/19	EPA 300.0	
% Moisture	13.0	0.1	%	1	P9L2301	12/23/19	12/23/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.7	mg/kg dry	1	P9L2402	12/24/19	12/24/19	TPH 8015M	
>C12-C28	ND	28.7	mg/kg dry	1	P9L2402	12/24/19	12/24/19	TPH 8015M	
>C28-C35	ND	28.7	mg/kg dry	1	P9L2402	12/24/19	12/24/19	TPH 8015M	
Surrogate: 1-Chlorooctane		86.8 %	70-130		P9L2402	12/24/19	12/24/19	TPH 8015M	
Surrogate: o-Terphenyl		97.7 %	70-130		P9L2402	12/24/19	12/24/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.7	mg/kg dry	1	[CALC]	12/24/19	12/24/19	calc	

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Midland TX, 79705

Project: Concho Jack Federal 04H
Project Number: 358143
Project Manager: Curt Stanley

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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
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Batch P9L2201 - General Preparation (GC)

Blank (P9L2201-BLK1)

Prepared & Analyzed: 12/22/19

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	0.117		"	0.120		97.2	75-125			
Surrogate: 4-Bromofluorobenzene	0.130		"	0.120		108	75-125			

LCS (P9L2201-BS1)

Prepared & Analyzed: 12/22/19

Benzene	0.0979	0.00100	mg/kg wet	0.100		97.9	70-130			
Toluene	0.118	0.00100	"	0.100		118	70-130			
Ethylbenzene	0.117	0.00100	"	0.100		117	70-130			
Xylene (p/m)	0.237	0.00200	"	0.200		118	70-130			
Xylene (o)	0.109	0.00100	"	0.100		109	70-130			
Surrogate: 4-Bromofluorobenzene	0.137		"	0.120		114	75-125			
Surrogate: 1,4-Difluorobenzene	0.131		"	0.120		109	75-125			

LCS Dup (P9L2201-BSD1)

Prepared & Analyzed: 12/22/19

Benzene	0.106	0.00100	mg/kg wet	0.100		106	70-130	7.67	20	
Toluene	0.117	0.00100	"	0.100		117	70-130	0.729	20	
Ethylbenzene	0.111	0.00100	"	0.100		111	70-130	5.82	20	
Xylene (p/m)	0.238	0.00200	"	0.200		119	70-130	0.316	20	
Xylene (o)	0.113	0.00100	"	0.100		113	70-130	3.24	20	
Surrogate: 1,4-Difluorobenzene	0.123		"	0.120		102	75-125			
Surrogate: 4-Bromofluorobenzene	0.125		"	0.120		104	75-125			

Calibration Blank (P9L2201-CCB1)

Prepared & Analyzed: 12/22/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.119		"	0.120		99.1	75-125			
Surrogate: 4-Bromofluorobenzene	0.133		"	0.120		111	75-125			

Permian Basin Environmental Lab, L.P.

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Project: Concho Jack Federal 04H
Project Number: 358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9L2201 - General Preparation (GC)

Calibration Blank (P9L2201-CCB2)

Prepared & Analyzed: 12/22/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.130		"	0.120		109	75-125			
Surrogate: 1,4-Difluorobenzene	0.117		"	0.120		97.4	75-125			

Calibration Blank (P9L2201-CCB3)

Prepared & Analyzed: 12/22/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.126		"	0.120		105	75-125			
Surrogate: 1,4-Difluorobenzene	0.114		"	0.120		94.7	75-125			

Calibration Check (P9L2201-CCV1)

Prepared & Analyzed: 12/22/19

Benzene	0.0986	0.00100	mg/kg wet	0.100		98.6	80-120			
Toluene	0.117	0.00100	"	0.100		117	80-120			
Ethylbenzene	0.118	0.00100	"	0.100		118	80-120			
Xylene (p/m)	0.234	0.00200	"	0.200		117	80-120			
Xylene (o)	0.112	0.00100	"	0.100		112	80-120			
Surrogate: 1,4-Difluorobenzene	0.134		"	0.120		112	75-125			
Surrogate: 4-Bromofluorobenzene	0.138		"	0.120		115	75-125			

Calibration Check (P9L2201-CCV2)

Prepared & Analyzed: 12/22/19

Benzene	0.0975	0.00100	mg/kg wet	0.100		97.5	80-120			
Toluene	0.117	0.00100	"	0.100		117	80-120			
Ethylbenzene	0.115	0.00100	"	0.100		115	80-120			
Xylene (p/m)	0.230	0.00200	"	0.200		115	80-120			
Xylene (o)	0.115	0.00100	"	0.100		115	80-120			
Surrogate: 1,4-Difluorobenzene	0.127		"	0.120		106	75-125			
Surrogate: 4-Bromofluorobenzene	0.132		"	0.120		110	75-125			

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Concho Jack Federal 04H
Project Number: 358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9L2201 - General Preparation (GC)

Calibration Check (P9L2201-CCV3)			Prepared & Analyzed: 12/22/19							
Benzene	0.104	0.00100	mg/kg wet	0.100		104	80-120			
Toluene	0.120	0.00100	"	0.100		120	80-120			
Ethylbenzene	0.119	0.00100	"	0.100		119	80-120			
Xylene (p/m)	0.237	0.00200	"	0.200		119	80-120			
Xylene (o)	0.114	0.00100	"	0.100		114	80-120			
Surrogate: 1,4-Difluorobenzene	0.134		"	0.120		112	75-125			
Surrogate: 4-Bromofluorobenzene	0.140		"	0.120		117	75-125			

Matrix Spike (P9L2201-MS1)			Source: 9L20007-01	Prepared & Analyzed: 12/22/19						
Benzene	0.0864	0.00101	mg/kg dry	0.101	ND	85.5	80-120			
Toluene	0.100	0.00101	"	0.101	ND	99.1	80-120			
Ethylbenzene	0.116	0.00101	"	0.101	ND	115	80-120			
Xylene (p/m)	0.198	0.00202	"	0.202	ND	97.9	80-120			
Xylene (o)	0.0932	0.00101	"	0.101	ND	92.3	80-120			
Surrogate: 1,4-Difluorobenzene	0.136		"	0.121		112	75-125			
Surrogate: 4-Bromofluorobenzene	0.139		"	0.121		115	75-125			

Matrix Spike Dup (P9L2201-MSD1)			Source: 9L20007-01	Prepared & Analyzed: 12/22/19						
Benzene	0.0874	0.00101	mg/kg dry	0.101	ND	86.5	80-120	1.15	20	
Toluene	0.103	0.00101	"	0.101	ND	102	80-120	3.06	20	
Ethylbenzene	0.120	0.00101	"	0.101	ND	119	80-120	3.61	20	
Xylene (p/m)	0.207	0.00202	"	0.202	ND	102	80-120	4.54	20	
Xylene (o)	0.106	0.00101	"	0.101	ND	105	80-120	12.7	20	
Surrogate: 1,4-Difluorobenzene	0.135		"	0.121		112	75-125			
Surrogate: 4-Bromofluorobenzene	0.139		"	0.121		114	75-125			

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Concho Jack Federal 04H
Project Number: 358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9L2301 - * DEFAULT PREP *****

Blank (P9L2301-BLK1)		Prepared & Analyzed: 12/23/19							
% Moisture	ND	0.1	%						
Duplicate (P9L2301-DUP1)		Source: 9L20002-26		Prepared & Analyzed: 12/23/19					
% Moisture	12.0	0.1	%		12.0			0.00	20
Duplicate (P9L2301-DUP2)		Source: 9L20003-03		Prepared & Analyzed: 12/23/19					
% Moisture	13.0	0.1	%		13.0			0.00	20
Duplicate (P9L2301-DUP3)		Source: 9L20007-11		Prepared & Analyzed: 12/23/19					
% Moisture	1.0	0.1	%		1.0			0.00	20

Batch P9L2902 - * DEFAULT PREP *****

Blank (P9L2902-BLK1)		Prepared: 12/29/19 Analyzed: 12/30/19							
Chloride	ND	0.100	mg/kg wet						
LCS (P9L2902-BS1)		Prepared: 12/29/19 Analyzed: 12/30/19							
Chloride	399	1.00	mg/kg wet	400		99.8	80-120		
LCS Dup (P9L2902-BSD1)		Prepared: 12/29/19 Analyzed: 12/30/19							
Chloride	400	1.00	mg/kg wet	400		99.9	80-120	0.0801	20
Calibration Blank (P9L2902-CCB1)		Prepared: 12/29/19 Analyzed: 12/30/19							
Chloride	0.00		mg/kg wet						
Calibration Blank (P9L2902-CCB2)		Prepared: 12/29/19 Analyzed: 12/30/19							
Chloride	0.00		mg/kg wet						

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Project: Concho Jack Federal 04H
Project Number: 358143
Project Manager: Curt Stanley

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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 P9L2902 - *** DEFAULT PREP ***										
Calibration Check (P9L2902-CCV1)				Prepared: 12/29/19 Analyzed: 12/30/19						
Chloride	20.0		mg/kg	20.0		99.8	0-200			
Calibration Check (P9L2902-CCV2)				Prepared: 12/29/19 Analyzed: 12/30/19						
Chloride	20.2		mg/kg	20.0		101	0-200			
Calibration Check (P9L2902-CCV3)				Prepared: 12/29/19 Analyzed: 12/30/19						
Chloride	18.9		mg/kg	20.0		94.7	0-200			
Matrix Spike (P9L2902-MS1)				Source: 9L19012-13		Prepared: 12/29/19 Analyzed: 12/30/19				
Chloride	3190	28.7	mg/kg dry	2870	487	93.9	80-120			
Matrix Spike (P9L2902-MS2)				Source: 9L20003-02		Prepared: 12/29/19 Analyzed: 12/30/19				
Chloride	694	5.43	mg/kg dry	543	148	100	80-120			
Matrix Spike Dup (P9L2902-MSD1)				Source: 9L19012-13		Prepared: 12/29/19 Analyzed: 12/30/19				
Chloride	3060	28.7	mg/kg dry	2870	487	89.6	80-120	3.93	20	
Matrix Spike Dup (P9L2902-MSD2)				Source: 9L20003-02		Prepared: 12/29/19 Analyzed: 12/30/19				
Chloride	684	5.43	mg/kg dry	543	148	98.6	80-120	1.36	20	

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Midland TX, 79705

Project: Concho Jack Federal 04H
Project Number: 358143
Project Manager: Curt Stanley

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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
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Batch P9L2402 - TX 1005

Blank (P9L2402-BLK1)

Prepared & Analyzed: 12/24/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	93.6		"	100		93.6	70-130			
Surrogate: o-Terphenyl	51.3		"	50.0		103	70-130			

LCS (P9L2402-BS1)

Prepared & Analyzed: 12/24/19

C6-C12	812	25.0	mg/kg wet	1000		81.2	75-125			
>C12-C28	1130	25.0	"	1000		113	75-125			
Surrogate: 1-Chlorooctane	109		"	100		109	70-130			
Surrogate: o-Terphenyl	47.3		"	50.0		94.6	70-130			

LCS Dup (P9L2402-BSD1)

Prepared & Analyzed: 12/24/19

C6-C12	842	25.0	mg/kg wet	1000		84.2	75-125	3.68	20	
>C12-C28	1140	25.0	"	1000		114	75-125	1.14	20	
Surrogate: 1-Chlorooctane	114		"	100		114	70-130			
Surrogate: o-Terphenyl	48.8		"	50.0		97.7	70-130			

Calibration Blank (P9L2402-CCB1)

Prepared & Analyzed: 12/24/19

C6-C12	16.8		mg/kg wet							
>C12-C28	12.5		"							
Surrogate: 1-Chlorooctane	86.0		"	100		86.0	70-130			
Surrogate: o-Terphenyl	49.6		"	50.0		99.1	70-130			

Calibration Blank (P9L2402-CCB2)

Prepared & Analyzed: 12/24/19

C6-C12	15.0		mg/kg wet							
>C12-C28	12.7		"							
Surrogate: 1-Chlorooctane	80.9		"	100		80.9	70-130			
Surrogate: o-Terphenyl	46.1		"	50.0		92.2	70-130			

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: Concho Jack Federal 04H
Project Number: 358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

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
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Batch P9L2402 - TX 1005

Calibration Check (P9L2402-CCV1)

Prepared & Analyzed: 12/24/19

C6-C12	453	25.0	mg/kg wet	500		90.6	85-115			
>C12-C28	451	25.0	"	500		90.1	85-115			
Surrogate: 1-Chlorooctane	88.1		"	100		88.1	70-130			
Surrogate: o-Terphenyl	43.5		"	50.0		87.0	70-130			

Calibration Check (P9L2402-CCV2)

Prepared & Analyzed: 12/24/19

C6-C12	479	25.0	mg/kg wet	500		95.9	85-115			
>C12-C28	465	25.0	"	500		93.0	85-115			
Surrogate: 1-Chlorooctane	81.9		"	100		81.9	70-130			
Surrogate: o-Terphenyl	40.3		"	50.0		80.6	70-130			

Matrix Spike (P9L2402-MS1)

Source: 9L20010-02

Prepared & Analyzed: 12/24/19

C6-C12	816	25.8	mg/kg dry	1030	17.5	77.4	75-125			
>C12-C28	1260	25.8	"	1030	477	76.1	75-125			
Surrogate: 1-Chlorooctane	113		"	103		109	70-130			
Surrogate: o-Terphenyl	50.8		"	51.5		98.6	70-130			

Matrix Spike Dup (P9L2402-MSD1)

Source: 9L20010-02

Prepared & Analyzed: 12/24/19

C6-C12	795	25.8	mg/kg dry	1030	17.5	75.4	75-125	2.70	20	
>C12-C28	1160	25.8	"	1030	477	65.9	75-125	14.4	20	QM-07
Surrogate: 1-Chlorooctane	109		"	103		106	70-130			
Surrogate: o-Terphenyl	49.2		"	51.5		95.4	70-130			

Permian Basin Environmental Lab, L.P.

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.

1400 Rankin HWY Midland, TX 79701 432-686-7235

Page 12 of 14

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: Concho Jack Federal 04H
Project Number: 358143
Project Manager: Curt Stanley

Fax: (432) 520-7701

Notes and Definitions

ROI Received on Ice

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:



Date:

12/31/2019

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.

PBBI LAB

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Page 2 of 2

Permian Basin Environmental Lab, LP
10014 S. County Road 1213
Midland, Texas 79706

Phone: 432-661-4164

Project Manager: Curt Stanley

Company Name: TRC Environmental Corporation

Company Address: 10 Deste Drive Suite 150E

City/State/Zip: Midland/TX/79705

Telephone No: (432) 6207720

Sampler Signature: e-mail: cdstanley@trcsolutions.com
sstanley@trccompanies.com

Fax No:

Report Format:

☒ Standard☐ TRRP☐ NPDES

PO #:

Project Name: Concho Jack Federal 04H

Project #: 358143

Project Loc: Eddy County, NM

Page 14 of 14

(lab use only)

ORDER #: 9L20003

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO ₃	HCl	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides E 300	Paint Filter	TCLP Benzene	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT	
1	WSW-7A@3"			12/19/2019	11:45		1	X									Soil	X															
2	ESW-5A@6"			12/19/2019	11:55		1	X									Soil	X															
3	ESW-18A@9"			12/19/2019	12:35		1	X									Soil	X															

Special Instructions:

Bill to TRC Project #358143

Relinquished by:

Date

Time

Received by:

Date

Time

Relinquished by:

Date

Time

Received by:

Date

Time

Relinquished by:

Date

Time

Received by:

Date

Time

Laboratory Comments:

Sample Containers intact?

VOCs Free of Headspace?

Labels on container(s)?

Custody seals on container(s)?

Custody seals on cooler(s)?

Sample Hand Delivered by Sampler/Client Rep.?

Temperature Upon Receipt:

Adjusted: 42 °C

Factor: 1.18

N

N

N

N

N

N

N

N

N

Appendix E
Request for Approval to Accept Solid Waste
(NMOCD Form C138)

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

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

Form C-138
Revised August 1, 2011

*Surface Waste Management Facility Operator
and Generator shall maintain and make this
Documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:

COG Operating, LLC
600 West Illinois Avenue
Midland, TX 79701

2. Originating Site:

COG Jack Federal #004H (API # 30-015-42134)

3. Location of Material (Street Address, City, State or ULSTR):

ULT "C", Sec 31, T25S, R27E, Eddy County, New Mexico

4. Source and Description of Waste:

Waste was generated due to a produced water release from a Concho gathering line

Estimated Volume 150 yd³ / bbls Known Volume (to be entered by the operator at the end of the haul) yd³ / bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Sheldon Hitchcock, representative or authorized agent for COG Operating, LLC do hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☒ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. *Operator Use Only: Waste Acceptance Frequency* ☐ Monthly ☐ Weekly ☐ Per Load

☐ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Sheldon Hitchcock, representative for COG Operating, LLC do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. Transporter:

M Mata Trucking, Hobbs, NM

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Lea Land LLC – NMOCD Permit #NM-01-35-0

Address of Facility: Section 32, Township 20 South, Range 32 East, NMPM Lea County, New Mexico

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☐ Landfarm ☒ Landfill ☐ Other

Waste Acceptance Status:

☒ **APPROVED**

☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: Sarahlyn Hall TITLE: mk. mng. DATE: 5/4/20

SIGNATURE: Sarahlyn Hall TELEPHONE NO.: 405-579-1187
Surface Waste Management Facility Authorized Agent

Appendix F

Release Notification Form C-141

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	

AMENDED - ADD FACILITY #

Release Notification TCJTY-190823-C-1410

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☐ Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☐ The source of the release has been stopped.	
☐ The impacted area has been secured to protect human health and the environment.	
☐ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
☐ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
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: _____	Title: _____
Signature: <u>Delann Opreant</u>	Date: _____
email: _____	Telephone: _____
<u>OCD Only</u>	
Received by: _____	Date: _____

District I
1625 N. French Dr., Hobbs, NM 88240
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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	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>20</u> (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
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?	☐ Yes ☒ No
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?	☐ Yes ☒ No
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?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
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
- ☒ Laboratory data including chain of custody

Incident ID	
District RP	
Facility ID	
Application ID	

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.

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: Ike Tavaréz Title: Senior HSE Representative

Signature:  Date: 6/11/20

email: itavarez@concho.com Telephone: 432-701-8630

OCD Only

Received by: _____ Date: _____

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.

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

- ☒ 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 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: Ike Tavaréz Title: Senior HSE Representative

Signature:  Date: 6/11/20

email: itavarez@concho.com Telephone: 432-701-8630

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 party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____